# TRAFFIC PLANNING AND DESIGN, INC.

Est. 1989

# Cardinal Crossings

Transportation Impact Study

*Marple Township, Delaware County*

## For Submission To:

Marple Township & PennDOT District 6-0

Last Revised: January 28, 2016

TPD# GMP.A.00030

2500 E. High Street | Suite 650 | Pottstown, PA | 19464 | 610.326.3100 | TPD@TrafficPD.com

# CARDINAL CROSSINGS
# TRANSPORTATION IMPACT STUDY

For Submission to:

**Marple Township, Delaware County, PA**
**& PennDOT District 6-0**

*Prepared For:*

**Mr. Bruce Goodman &**
**Mr. Chris Anderson**
**Goodman Properties**
**636 Old York Road**
**Jenkintown, PA 19046**

**November 5, 2014**
**(Last Revised January 28, 2016)**
*TPD # GMP.A.00030*

*Prepared By:*


**Traffic Planning and Design, Inc.**
**Sanatoga Commons**
**2500 East High Street, Suite 650**
**Pottstown, Pennsylvania 19464**

**Phone: (610) 326-3100**
**Fax: (610) 326-9410**
**E-mail: TPD@TrafficPD.com**
**Web Site: www.trafficpd.com**

**Matthew I. Hammond, P.E.**
**Executive Vice President**
**Pennsylvania License No. 071037**

# TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... i
INTRODUCTION ..... 1
EXISTING ROADWAY NETWORK ..... 2
EXISTING TRAFFIC CONDITIONS ..... 5
BASE (NO-BUILD) CONDITIONS ..... 9
SCHEDULED ROADWAY IMPROVEMENTS ..... 10
PROPOSED SITE ACCESS ..... 11
TRIP GENERATION ..... 13
TRIP DISTRIBUTION ..... 17
PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES ..... 18
DRIVEWAY CLASSIFICATION ..... 18
LEVELS OF SERVICE FOR AN INTERSECTION ..... 19
CAPACITY ANALYSIS METHODOLOGY ..... 20
LEVELS OF SERVICE IN THE STUDY AREA ..... 21
95TH PERCENTILE QUEUE ANALYSIS ..... 22
AUXILIARY TURN LANE ANALYSIS ..... 22
SIGNAL WARRANT ANALYSIS ..... 24
RECOMMENDATIONS ..... 25
CONCLUSIONS ..... 25

**Figures 1 – 23**

**Technical Appendices**

**Appendix A:** **Project Correspondence**
**Appendix B:** **Study Area Photographs**
**Appendix C:** **Smart Transportation Criteria**
**Appendix D:** **Manual Counts**
**Appendix E:** **ATR Counts**
**Appendix F:** **Nearby Development Data**
**Appendix G:** **Interaction Data**
**Appendix H:** **Gravity Model Data**
**Appendix I:** **Volume Development Spreadsheets**
**Appendix J:** **Capacity Analysis**
**Appendix K:** **PennDOT/Township Signal Timing Data**
**Appendix L:** **Auxiliary Turn Lane Analysis**
**Appendix M:** **Signal Warrant Analysis**
**Appendix N:** **Conflict Factor Analysis**

## EXECUTIVE SUMMARY

The purpose of this study is to examine the potential traffic impact associated with the proposed Cardinal Crossings development on the roadway network in Marple Township, Delaware County, PA. Based on this evaluation, the following conclusions were reached:

- The project scope and the extent of the study area were confirmed with representatives of PennDOT and Township staff at a meeting held on August 14, 2014. This TIS was revised based on the following:
  - Review letters from PennDOT (December 29, 2014 and June 16, 2015)
  - Review letters from Marple Township (February 3, 2015 and July 31, 2015)
  - An additional meeting with representatives of PennDOT and Township staff, held on March 17, 2015
  - An additional meeting with Marple Township staff/consultants, held on September 4, 2015
- The project site is bounded by Sproul Road (S.R. 0320) to the west, Route 476 (S.R. 0476) to the south and Reed Road to the north and to the east. The proposed site will consist of:
  - 318 Townhomes (Includes Carriage Homes)
  - A 130-room Hotel
  - A 55,000 s.f. Multiplex
  - A 80,000 s.f. Recreational Community Center
  - 100,000 s.f. of General Office space
  - 690,000 s.f. of General Retail space
  - Convenience Market with sixteen (16) fueling positions (5,000+ ksf).

  In addition, it is TPD's understanding that as part of this development, the existing Don Guanella facility will be relocated from its current location on Sproul Road, to a location adjacent to the existing Cardinal O'Hara High School, along Sproul Road (S.R. 0320) to the south.
- The site will be served by the following proposed site driveways:
  - Four (4) Driveways to Sproul Road (S.R. 0320)
  - Five (5) Driveways to Reed Road (Including one (1) opposite Marpit Drive)
  - One (1) Driveway to the Lawrence Park Shopping Center Driveway off of Reed Road.

  With the development of the site, the proposed site will share its southern access on Sproul Road (S.R. 0320) with the existing Cardinal O'Hara High School to the south.
- All proposed driveway location sight distances will exceed PennDOT's Desirable and Safe Stopping Sight Distance (SSSD) criteria.
- Upon full build-out, the proposed site will generate **913 new vehicle-trips** during the weekday A.M. peak hour, **2184 new vehicle-trips** during the weekday P.M. peak hour, and **2842 new vehicle-trips** during the Saturday Midday peak hour.

- Under projected conditions with the development of the proposed site and with the site-related recommendations, all study area intersections will satisfy PennDOT ILOS Standards, with the following exceptions:

  - *Sproul Road & Springfield Road* – ILOS increases by over 10-seconds during the weekday P.M. peak period. It should be noted that the increase analyzed is 0.9 seconds beyond the 10-second threshold (10.9 second increase). It should also be noted that the Applicant is providing a separate left-turn lane on southbound Sproul Road and signal optimization at this intersection. It is TPD's opinion that additional improvements would require widening of adjacent bridges to the south, which is not feasible. ILOS at this intersection will operate at ILOS D or better, which is acceptable in urban settings. Furthermore, it should be noted that the Applicant has agreed to provide a Traffic Adaptive Signal System along Sproul Road extending from State Road to Lawrence Road. Because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30%. Applying the low end of the improvement (10%) to this intersection, as well as the other intersections within the system, you can expect an improvement from what is shown in the analysis in the overall operation of this intersection. This improvement, based on the adaptive technology, would allow this intersection to satisfy PennDOT ILOS Standards.

  - *Springfield Road & State Road* – ILOS increases by over 10-seconds during the weekday P.M. and Saturday Midday peak hours. It should be noted that the Applicant has agreed to provide a Traffic Adaptive Signal System along Sproul Road extending from State Road to Lawrence Road and along Springfield Road between Sproul Road and State Road. As mentioned previously, because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30% which should satisfy PennDOT ILOS standards.

- Levels of Service (LOS) for the study area intersections have been summarized in matrix form. **Table I-III** details the overall intersection LOS for each study area intersection.

## TABLE I
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Lawrence Road (S.R. 1020) | WBL | C | D | D | D | E | F(146.0) | D |
| | WBR | C | C | C | E | F(51.8) | D | E |
| | NBT | F(121.9) | D | F(69.1) | D | C | D | D |
| | NBR | C | C | C | A | C | C | A |
| | SBL | D | E | E | C | D | D | C |
| | SBT | A | A | A | A | A | A | A |
| | **ILOS** | **E(57.0)** | **C(33.0)** | **D(43.7)** | **C(32.0)** | **C(33.5)** | **D(41.5)** | **C(33.8)** |
| Sproul Road (S.R. 0320) & Williamsburg Drive/ Shopping Center Driveway | EBL | C | D | D | C | D | D | C |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | C | D | D | C | D | D | C |
| | WBT | | | | | | | |
| | WBR | C | D | D | C | D | D | C |
| | NBL | A | A | A | A | A | A | A |
| | NBT | A | A | B | A | A | B | A |
| | NBR | A | A | A | | A | A | |
| | SBL | A | A | B | A | A | B | A |
| | SBT | A | A | A | A | A | A | A |
| | SBR | | | | | | | |
| | **ILOS** | **A(6.3)** | **A(5.0)** | **B(12.9)** | **A(4.0)** | **A(5.2)** | **B(13.5)** | **A(4.1)** |
| Sproul Road (S.R. 0320) & Reed Road | WBL | D | E | -- | -- | E | -- | -- |
| | WBR | C | C | -- | -- | C | -- | -- |
| | NBT | C | C | -- | -- | C | -- | -- |
| | NBR | B | B | -- | -- | B | -- | -- |
| | SBL | D | D | -- | -- | D | -- | -- |
| | SBT | A | A | -- | -- | A | -- | -- |
| | **ILOS** | **B(18.0)** | **B(19.7)** | **--** | **--** | **C(21.1)** | **--** | **--** |
| Sproul Road (S.R. 0320) & Springfield Road (S.R. 1009) | WBR | C | E | E | C | D | E | C |
| | NBT | B | C | C | C | C | C | D |
| | NBR | | | | | | | |
| | SBL | B | D | D | C | C | C | C |
| | SBT | A | A | A | A | A | A | A |
| | **ILOS** | **B(12.8)** | **C(28.8)** | **D(35.6)** | **C(24.1)** | **C(28.2)** | **C(33.9)** | **C(25.1)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Old Marple Road (S.R. 1008) | EBL | B | C | D | B | C | D | B |
| | EBT | | | | | | | |
| | EBR | | | | B | | | B |
| | WBL | C | F(86.5) | F(83.9) | D | F(104.1) | F(100.4) | C |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | E | E | E | D | E | E | D |
| | NBT | | | | B | | | C |
| | NBR | | | | | | | |
| | SBL | B | B | B | C | B | B | C |
| | SBT | | | | B | | | B |
| | SBR | | | | | | | |
| | **ILOS** | **D(40.8)** | **E(55.1)** | **D(54.4)** | **C(21.4)** | **E(59.5)** | **E(58.6)** | **C(23.1)** |
| Sproul Road (S.R. 0320) & State Road (S.R. 0001) | EBL | E | D | E | E | E | E | E |
| | EBLT | A | A | A | A | A | A | A |
| | EBR | A | A | A | A | A | A | A |
| | WBL | E | D | D | E | E | E | E |
| | WBLT | E | E | E | E | E | E | E |
| | WBR | | | | | | | |
| | NBL | F(226.5) | F(87.4) | F(87.4) | D | E | E | D |
| | NBT | B | B | C | B | B | B | B |
| | NBR | A | A | A | A | A | A | A |
| | SBL | E | E | E | E | E | E | E |
| | SBT | C | D | D | E | D | D | E |
| | SBR | A | A | A | A | A | A | A |
| | **ILOS** | **E(66.1)** | **D(41.9)** | **D(44.5)** | **D(41.2)** | **D(39.1)** | **D(42.8)** | **D(42.5)** |
| Springfield Road (S.R. 1009) & State Road (S.R. 0001) | EBL | F(131.2) | F(269.0) | F(269.0) | -- | F(242.3) | F(242.3) | -- |
| | EBT | C | D | D | -- | C | C | -- |
| | EBR | A | A | A | -- | A | A | -- |
| | WBL | C | C | C | -- | C | C | -- |
| | WBT | F(162.5) | F(136.9) | F(146.2) | -- | F(113.7) | F(121.4) | -- |
| | WBR | | | | -- | | | -- |
| | NBL | F(268.4) | F(197.3) | F(197.3) | -- | F(173.7) | F(173.7) | -- |
| | NBT | F(82.8) | D | D | -- | E | E | -- |
| | NBR | | | | -- | | | -- |
| | SBL | D | D | E | -- | D | F(91.9) | -- |
| | SBT | E | D | E | -- | F(117.9) | F(152.8) | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **F(116.9)** | **F(103.7)** | **F(107.2)** | **--** | **F(98.0)** | **F(106.6)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Springfield Road (S.R. 1009) & Eagle Road (S.R. 1006) | WBL | F(143.4) | E | E | F(85.9) | F(129.2) | F(129.2) | F(112.2) |
| | WBR | C | B | B | B | B | B | B |
| | NBT | C | E | F(117.4) | D | D | F(80.1) | C |
| | NBR | | | | A | | | A |
| | SBL | B | C | E | B | B | D | B |
| | SBR | | | | B | | | A |
| | **ILOS** | **E(60.4)** | **E(55.6)** | **F(81.9)** | **D(39.6)** | **E(66.6)** | **F(81.6)** | **D(45.5)** |
| Lawrence Road (S.R. 1020) & Parkway Avenue | EBL | B | B | B | B | B | C | B |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | A | A | A | B | B | B | B |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | C | D | F(194.8) | C | C | F(196.9) | C |
| | NBT | B | B | C | B | B | B | B |
| | NBR | | | | | | | |
| | SBL | B | B | B | B | B | B | B |
| | SBT | | | | | | | |
| | SBR | | | | | | | |
| | **ILOS** | **B(14.7)** | **B(16.9)** | **D(42.5)** | **B(16.5)** | **B(19.4)** | **D(47.6)** | **B(17.7)** |
| Parkway Avenue & Shopping Center Driveway/ Westbourne Drive | EBLT | B | B | B | C | B | B | C |
| | EBR | A | A | A | C | A | A | C |
| | WB | B | B | B | C | B | B | C |
| | NBL | E | F(55.5) | F(55.6) | A | F(55.6) | F(55.8) | A |
| | NBTR | | | | | | | |
| | SBL | B | B | B | A | B | B | A |
| | SBTR | | | | | | | |
| | **ILOS** | **D(34.4)** | **E(38.8)** | **E(38.8)** | **A(6.8)** | **E(38.9)** | **E(38.9)** | **A(6.9)** |
| Red Hill Drive & Parkway Avenue Reed Road/ | EBL | B | B | B | C | B | B | C |
| | EBT | | | | C | | | C |
| | EBR | B | B | B | B | B | B | B |
| | WB | B | B | B | C | B | B | C |
| | NBL | A | A | A | A | A | A | A |
| | NBT | A | B | B | B | B | B | B |
| | NBR | A | A | A | A | A | A | A |
| | SB | B | B | B | B | B | B | B |
| | **ILOS** | **B(11.2)** | **B(11.6)** | **B(12.3)** | **B(12.0)** | **B(11.9)** | **B(12.6)** | **B(12.3)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Marpit Drive/ Proposed Driveway | EBL | -- | -- | C | -- | -- | C | -- |
| | EBTR | -- | -- | C | -- | -- | C | -- |
| | WBL | D | D | D | -- | D | D | -- |
| | WBT | -- | -- | C | -- | -- | C | -- |
| | WBR | C | C | | -- | C | | -- |
| | WBL | D | D | D | -- | D | D | -- |
| | NBL | -- | -- | A | -- | -- | A | -- |
| | NBT | C | D | D | -- | D | D | -- |
| | NBR | | | | -- | | | -- |
| | SBL | D | D | D | -- | D | D | -- |
| | SBT | A | A | A | -- | A | A | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **C(25.8)** | **C(34.6)** | **C(34.9)** | **--** | **D(40.1)** | **D(40.1)** | **--** |
| Eagle Road (S.R. 1006) & Reed Road/Driveway | EBL | F(108.7) | F(144.0) | F(162.8) | D | F(152.5) | F(171.5) | F(109.0) |
| | EBT | A | A | A | A | A | A | A |
| | EBR | | | | | | | |
| | WBL | B | B | B | C | B | B | C |
| | WBT | | | | | | | |
| | WBR | F(213.9) | F(182.6) | F(206.1) | F(134.3) | F(176.0) | F(198.6) | F(117.9) |
| | NBL | B | B | B | C | C | C | C |
| | NBT | | | | | | | |
| | NBR | | | | | | | |
| | SBL | D | D | E | C | D | E | C |
| | SBT | | | | C | | | C |
| | SBR | B | B | B | | C | C | |
| | **ILOS** | **F(110.5)** | **F(106.9)** | **F(120.4)** | **E(67.7)** | **F(107.2)** | **F(121.0)** | **E(75.1)** |
| Sproul Road (S.R. 0320) & Crum Creek Road/ Realigned Reed Road | EBL | F(120.7) | F(395.0) | E | -- | F(510.8) | E | -- |
| | EBT | | | E | -- | | E | -- |
| | EBR | | | | -- | | | -- |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | D | -- | -- | D | -- |
| | WBR | -- | -- | D | -- | -- | D | -- |
| | NBL | A | A | A | -- | A | A | -- |
| | NBT | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | B | -- | -- | B | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | A | -- | -- | A | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(2.3)** | **A(7.1)** | **B(17.0)** | **--** | **A(9.1)** | **B(18.4)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Cemetery Driveway/ Don Guanella Driveway/ Proposed Site Driveway | EBL | A | F(228.1) | E | -- | F(271.3) | E | -- |
| | EBT | | | A | -- | | A | -- |
| | EBR | | | | -- | | | -- |
| | WBL | A | A | E | -- | A | E | -- |
| | WBT | | | A | -- | | A | -- |
| | WBR | | | D | -- | | D | -- |
| | NBL | A | A | A | -- | A | A | -- |
| | NBT | -- | -- | A | -- | -- | A | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | C | C | E | -- | D | E | -- |
| | SBT | -- | -- | A | -- | -- | A | -- |
| | SBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **A(0.1)** | **A(0.8)** | **A(3.8)** | **--** | **A(0.9)** | **A(3.7)** | **--** |
| Sproul Road (S.R. 0320) & Southern Cemetery Driveway/ Proposed Site Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | A | -- | -- | A | -- |
| | EBR | A | A | | -- | A | | -- |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | D | -- | -- | D | -- |
| | NBL | -- | -- | -- | -- | -- | -- | -- |
| | NBT | -- | -- | A | -- | -- | A | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | A | -- | -- | A | -- |
| | SBR | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(0.0)** | **A(0.0)** | **A(4.9)** | **--** | **A(0.0)** | **A(5.1)** | **--** |
| Sproul Road (S.R. 0320) & High School Driveway | WBL | C | E | E | E | E | F(52.1) | F(52.1) |
| | WBR | | | | | | | |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | C | D | E | E | E | E | E |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(3.6)** | **A(5.5)** | **A(7.7)** | **A(1.0)** | **A(7.1)** | **A(8.4)** | **A(1.1)** |
| Springfield Road (S.R. 1009) & Old Marple Road (S.R. 1008) | EBL | E | E | F(64.1) | C | F(51.6) | F(75.8) | C |
| | EBR | | | | | | | |
| | NBL | B | B | B | A | B | B | A |
| | NBT | -- | -- | -- | | -- | -- | |
| | SBT | -- | -- | -- | A | -- | -- | B |
| | SBR | -- | -- | -- | | -- | -- | |
| | **ILOS** | **A(2.4)** | **A(2.8)** | **A(3.5)** | **A(5.7)** | **A(3.1)** | **A(4.1)** | **A(6.1)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Shopping Center Driveway/ Proposed Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | B | B | B | -- | C | B | -- |
| | SBR | | | | | | | |
| | NBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(2.6)** | **A(2.6)** | **A(2.6)** | **--** | **A(2.7)** | **A(2.6)** | **--** |
| Reed Road & Lawrence Business Park Driveway/ Proposed Site Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | | -- | -- | | -- |
| | EBR | -- | -- | A | -- | -- | A | -- |
| | WBL | -- | -- | C | -- | -- | C | -- |
| | WBT | -- | -- | A | -- | -- | A | -- |
| | WBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | C | -- | -- | C | -- |
| | NBT | -- | -- | C | -- | -- | C | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | C | C | C | -- | C | C | -- |
| | SBT | | | | -- | | | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **A(1.4)** | **A(1.4)** | **A(7.7)** | **--** | **A(1.5)** | **A(7.8)** | **--** |
| Reed Road & Parkway Avenue | WBL | C | C | D | C | D | D | D |
| | WBR | | | | D | | | D |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | B | B | B | B | C | C | C |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(3.2)** | **A(3.3)** | **A(3.7)** | **A(3.5)** | **A(3.5)** | **A(3.8)** | **A(3.6)** |
| Eagle Road (S.R. 1006) & High School Driveway | EBL | B | B | B | -- | B | B | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBT | F(109.7) | F(146.5) | F(137.5) | -- | F(178.4) | F(174.0) | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **B(13.8)** | **C(18.4)** | **B(14.5)** | **--** | **C(22.3)** | **C(18.3)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO/LI Driveway | WBR | -- | -- | B | -- | -- | B | -- |
| | SBL | -- | -- | B | -- | -- | B | -- |
| | **ILOS** | **--** | **--** | **A(0.2)** | **--** | **--** | **A(0.2)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE I (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY AM PEAK HOUR

| Intersection | Movement | Weekday AM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Proposed Driveway (Residential) (East) | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBL | -- | -- | A | -- | -- | A | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **--** | **--** | **A(0.2)** | **--** | **--** | **A(0.2)** | **--** |
| Reed Road & Proposed Convenience Market Driveway | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(0.5)** | **--** | **--** | **A(0.5)** | **--** |
| Shopping Center Driveway & Proposed Convenience Market Driveway | EBL | -- | -- | A | -- | -- | A | -- |
| | EBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(2.4)** | **--** | **--** | **A(2.4)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO Driveway (Convenience Market) | WBR | -- | -- | B | -- | -- | B | -- |
| | **ILOS** | **--** | **--** | **A(0.2)** | **--** | **--** | **A(0.2)** | **--** |
| Eagle Road (S.R. 1006) & West Rolling Road | EBT | -- | -- | -- | A | -- | -- | A |
| | EBR | -- | -- | -- | | -- | -- | |
| | WBL | A | A | A | A | A | A | A |
| | WBT | -- | -- | -- | | -- | -- | |
| | NBL | F(293.9) | F(408.4) | F(485.7) | B | F(404.8) | F(558.5) | C |
| | NBR | B | C | C | | C | C | |
| | **ILOS** | **F(58.2)** | **F(79.8)** | **F(93.7)** | **A(9.3)** | **F(79.2)** | **F(107.6)** | **B(10.3)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Lawrence Road (S.R. 1020) | WBL | D | F(107.5) | F(217.7) | E | F(90.0) | F(189.8) | E |
| | WBR | B | C | C | C | C | B | C |
| | NBT | D | C | F(108.2) | D | D | F(131.5) | D |
| | NBR | C | B | C | A | B | C | A |
| | SBL | F(90.5) | F(108.6) | F(109.9) | E | F(115.4) | F(115.4) | F(108.2) |
| | SBT | B | B | B | A | B | B | A |
| | **ILOS** | **C(33.5)** | **D(39.6)** | **E(74.1)** | **C(33.4)** | **D(43.7)** | **E(77.4)** | **D(37.1)** |
| Sproul Road (S.R. 0320) & Williamsburg Drive/ Shopping Center Driveway | EBL | C | E | E | E | E | E | E |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | F(89.4) | F(158.5) | F(234.0) | F(143.9) | F(225.5) | F(305.3) | F(155.4) |
| | WBT | | | | | | | |
| | WBR | B | C | C | D | C | C | D |
| | NBL | B | B | C | A | B | C | B |
| | NBT | C | D | B | A | D | B | A |
| | NBR | A | A | A | | A | A | |
| | SBL | B | C | B | A | A | A | A |
| | SBT | D | B | F(74.2) | B | C | F(49.5) | C |
| | SBR | | | | | | | |
| | **ILOS** | **C(32.7)** | **C(34.4)** | **E(59.7)** | **C(21.1)** | **C(36.3)** | **D(49.2)** | **C(26.3)** |
| Sproul Road (S.R. 0320) & Reed Road | WBL | D | E | -- | -- | E | -- | -- |
| | WBR | C | C | -- | -- | C | -- | -- |
| | NBT | B | C | -- | -- | C | -- | -- |
| | NBR | B | C | -- | -- | C | -- | -- |
| | SBL | F(177.9) | E | -- | -- | E | -- | -- |
| | SBT | B | C | -- | -- | C | -- | -- |
| | **ILOS** | **C(28.6)** | **C(30.6)** | **--** | **--** | **C(31.9)** | **--** | **--** |
| Sproul Road (S.R. 0320) & Springfield Road (S.R. 1009) | WBR | B | B | B | B | B | B | B |
| | NBT | C | C | D | D | D | F(122.4) | E |
| | NBR | | | | | | | |
| | SBL | F(88.5) | F(86.8) | F(206.4) | F(110.1) | D | F(147.3) | F(119.2) |
| | SBT | A | B | F(80.2) | A | B | F(90.7) | A |
| | **ILOS** | **C(29.0)** | **C(32.2)** | **F(84.9)** | **D(37.7)** | **C(30.1)** | **F(99.6)** | **D(41.0)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Old Marple Road (S.R. 1008) | EBL | C | C | D | C | C | D | C |
| | EBT | | | | | | | |
| | EBR | | | | B | | | B |
| | WBL | C | C | C | C | C | C | C |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | F(780.1) | F(743.5) | F(719.9) | D | F(745.5) | F(667.8) | D |
| | NBT | | | | B | | | B |
| | NBR | | | | | | | |
| | SBL | B | B | D | B | B | E | B |
| | SBT | | | | C | | | D |
| | SBR | | | | | | | |
| | **ILOS** | **F(274.2)** | **F(264.7)** | **F(279.7)** | **C(23.7)** | **F(265.4)** | **F(267.7)** | **C(27.9)** |
| Sproul Road (S.R. 0320) & State Road (S.R. 0001) | EBL | E | E | E | F(101.7) | E | E | E |
| | EBLT | A | A | A | A | A | A | A |
| | EBR | A | A | A | A | A | A | A |
| | WBL | E | E | E | F(115.2) | F(105.1) | F(105.1) | F(122.1) |
| | WBLT | F(92.1) | F(83.2) | F(83.0) | F(141.1) | F(129.0) | F(128.3) | F(152.2) |
| | WBR | | | | | | | |
| | NBL | E | F(206.3) | F(206.3) | C | F(95.1) | F(95.1) | C |
| | NBT | C | C | C | A | C | C | A |
| | NBR | A | A | A | A | A | A | A |
| | SBL | E | E | F(140.7) | E | E | F(143.7) | E |
| | SBT | F(112.0) | F(135.2) | F(168.2) | E | F(105.7) | F(131.3) | F(87.9) |
| | SBR | A | A | A | A | A | A | A |
| | **ILOS** | **E(75.3)** | **F(97.0)** | **F(110.0)** | **E(63.0)** | **F(82.4)** | **F(93.0)** | **E(65.3)** |
| Springfield Road (S.R. 1009) & State Road (S.R. 0001) | EBL | D | F(184.2) | F(184.2) | F(141.7) | F(191.2) | F(191.2) | F(224.0) |
| | EBT | C | F(73.0) | F(83.1) | D | F(67.4) | F(76.4) | F(69.4) |
| | EBR | A | A | A | A | A | A | A |
| | WBL | C | C | C | C | C | C | C |
| | WBT | D | F(70.5) | F(81.0) | E | E | F(73.1) | E |
| | WBR | | | | | | | |
| | NBL | F(343.3) | F(119.1) | F(119.1) | F(224.4) | F(162.6) | F(162.6) | F(209.7) |
| | NBT | E | D | E | F(126.2) | D | E | E |
| | NBR | | | | | | | |
| | SBL | E | D | F(141.9) | F(65.3) | F(99.6) | F(178.9) | F(110.1) |
| | SBT | E | F(92.3) | F(174.6) | F(144.8) | F(108.0) | F(183.1) | F(140.5) |
| | SBR | | | | | | | |
| | **ILOS** | **F(71.1)** | **E(78.3)** | **F(100.4)** | **F(89.4)** | **F(83.1)** | **F(104.0)** | **F(97.4)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Springfield Road (S.R. 1009) & Eagle Road (S.R. 1006) | WBL | D | C | C | C | D | D | C |
| | WBR | C | B | B | B | B | B | B |
| | NBT | B | C | F(56.1) | A | B | C | A |
| | NBR | | | | A | | | A |
| | SBL | C | F(659.3) | F(999+) | A | F(253.6) | F(999+) | A |
| | SBR | | | | A | | | A |
| | **ILOS** | **C(27.4)** | **F(257.8)** | **F(999+)** | **B(11.4)** | **F(108.5)** | **F(504.5)** | **B(11.5)** |
| Lawrence Road (S.R. 1020) & Parkway Avenue | EBL | A | A | A | A | A | A | A |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | A | A | B | B | A | B | B |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | C | C | C | C | C | C | C |
| | NBT | C | C | C | C | C | C | C |
| | NBR | | | | | | | |
| | SBL | C | C | C | B | C | C | B |
| | SBT | | | | | | | |
| | SBR | | | | | | | |
| | **ILOS** | **B(10.9)** | **B(12.3)** | **B(14.3)** | **B(13.7)** | **B(12.7)** | **B(15.0)** | **B(14.5)** |
| Parkway Avenue & Shopping Center Driveway/ Westbourne Drive | EBLT | C | C | C | C | C | C | C |
| | EBR | B | B | B | C | B | B | C |
| | WB | B | B | B | C | B | B | C |
| | NBL | D | D | E | A | E | E | A |
| | NBTR | | | | | | | |
| | SBL | F(61.6) | F(61.9) | F(62.5) | B | F(62.4) | F(63.0) | B |
| | SBTR | | | | | | | |
| | **ILOS** | **E(39.8)** | **E(40.6)** | **E(44.6)** | **B(12.5)** | **E(42.1)** | **E(46.6)** | **B(12.8)** |
| Red Hill Drive & Parkway Avenue Reed Road/ | EBL | C | C | C | C | C | C | C |
| | EBT | | | | C | | | C |
| | EBR | D | C | D | C | C | D | C |
| | WB | C | C | C | C | C | C | C |
| | NBL | A | B | F(63.4) | B | B | F(71.4) | B |
| | NBT | A | A | A | A | A | A | A |
| | NBR | A | A | A | A | A | A | A |
| | SB | C | C | C | C | C | C | C |
| | **ILOS** | **B(19.0)** | **B(18.6)** | **C(31.3)** | **B(17.5)** | **B(19.8)** | **C(33.8)** | **B(18.3)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Marpit Drive/ Proposed Driveway | EBL | -- | -- | C | -- | -- | C | -- |
| | EBTR | -- | -- | C | -- | -- | C | -- |
| | WBL | C | C | D | -- | C | D | -- |
| | WBT | -- | -- | C | -- | -- | C | -- |
| | WBR | B | B | | -- | B | | -- |
| | NBL | -- | -- | C | -- | -- | C | -- |
| | NBT | A | A | B | -- | A | B | -- |
| | NBR | | | | -- | | | -- |
| | SBL | B | B | B | -- | B | B | -- |
| | SBT | B | B | B | -- | B | C | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **B(12.7)** | **B(13.4)** | **C(20.9)** | **--** | **B(14.4)** | **C(22.1)** | **--** |
| Eagle Road (S.R. 1006) & Reed Road/Driveway | EBL | B | B | B | B | B | B | C |
| | EBT | B | B | B | B | B | B | B |
| | EBR | | | | | | | |
| | WBL | C | C | C | C | C | C | C |
| | WBT | | | | | | | |
| | WBR | E | F(86.1) | F(149.1) | A | F(98.0) | F(161.1) | A |
| | NBL | A | A | A | A | A | A | A |
| | NBT | | | | | | | |
| | NBR | | | | | | | |
| | SBL | D | D | E | C | F(65.9) | F(65.7) | C |
| | SBT | | | | B | | | B |
| | SBR | B | B | B | | B | B | |
| | **ILOS** | **C(32.6)** | **D(38.6)** | **D(51.2)** | **B(20.0)** | **D(44.3)** | **E(56.0)** | **C(20.1)** |
| Sproul Road (S.R. 0320) & Crum Creek Road/ Realigned Reed Road | EBL | F(999+) | F(999+) | D | -- | F(999+) | D | -- |
| | EBT | | | E | -- | | E | -- |
| | EBR | | | | -- | | | -- |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | D | -- | -- | D | -- |
| | WBR | -- | -- | C | -- | -- | C | -- |
| | NBL | C | D | A | -- | D | A | -- |
| | NBT | -- | -- | A | -- | -- | A | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | B | -- | -- | B | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **D(27.2)** | **E(45.8)** | **B(18.8)** | **--** | **E(48.8)** | **C(21.0)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Cemetery Driveway/ Don Guanella Driveway/ Proposed Site Driveway | EBL | F(417.2) | F(684.3) | E | -- | F(684.6) | E | -- |
| | EBT | | | A | -- | | A | -- |
| | EBR | | | | -- | | | -- |
| | WBL | F(696.5) | F(999+) | E | -- | F(999+) | E | -- |
| | WBT | | | A | -- | | A | -- |
| | WBR | | | C | -- | | C | -- |
| | NBL | C | D | C | -- | E | B | -- |
| | NBT | -- | -- | C | -- | -- | C | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | A | B | E | -- | B | E | -- |
| | SBT | -- | -- | B | -- | -- | B | -- |
| | SBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **A(8.8)** | **B(13.4)** | **C(26.1)** | **--** | **C(15.1)** | **C(25.6)** | **--** |
| Sproul Road (S.R. 0320) & Southern Cemetery Driveway/ Proposed Site Driveway | EBL | D | D | E | -- | E | E | -- |
| | EBT | -- | -- | E | -- | -- | E | -- |
| | EBR | C | D | | -- | D | | -- |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | D | -- | -- | D | -- |
| | NBL | -- | -- | -- | -- | -- | -- | -- |
| | NBT | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | B | -- | -- | B | -- |
| | SBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **A(0.1)** | **A(0.1)** | **B(19.8)** | **--** | **A(0.1)** | **B(18.9)** | **--** |
| Sproul Road (S.R. 0320) & High School Driveway | WBL | B | B | B | C | B | B | C |
| | WBR | | | | | | | |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | C | B | B | C | B | B | C |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(0.3)** | **A(0.3)** | **A(0.2)** | **A(0.3)** | **A(0.3)** | **A(0.2)** | **A(0.3)** |
| Springfield Road (S.R. 1009) & Old Marple Road (S.R. 1008) | EBL | F(81.3) | F(121.4) | F(350.1) | C | F(151.4) | F(412.0) | C |
| | EBR | | | | | | | |
| | NBL | B | B | C | A | B | C | A |
| | NBT | -- | -- | -- | | -- | -- | |
| | SBT | -- | -- | -- | B | -- | -- | C |
| | SBR | -- | -- | -- | | -- | -- | |
| | **ILOS** | **B(10.8)** | **C(15.8)** | **E(39.3)** | **B(13.7)** | **C(19.7)** | **E(46.4)** | **B(15.7)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Shopping Center Driveway/ Proposed Site Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | B | B | B | -- | B | B | -- |
| | SBR | | | | | | | |
| | NBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(2.1)** | **A(2.1)** | **A(2.5)** | **--** | **A(2.2)** | **A(2.5)** | **--** |
| Reed Road & Lawrence Business Park Driveway/ Proposed Site Driveway | EBL | A | A | B | -- | A | B | -- |
| | EBT | -- | -- | | -- | -- | | -- |
| | EBR | -- | -- | B | -- | -- | B | -- |
| | WBL | -- | -- | C | -- | -- | C | -- |
| | WBT | -- | -- | A | -- | -- | A | -- |
| | WBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBT | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | C | C | C | -- | C | C | -- |
| | SBT | | | | -- | | | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **A(2.5)** | **A(2.5)** | **B(14.6)** | **--** | **A(2.7)** | **B(14.6)** | **--** |
| Reed Road & Parkway Avenue | WBL | E | F(54.7) | F(130.0) | F(69.1) | F(71.0) | F(172.5) | F(85.7) |
| | WBR | | | | C | | | C |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | B | B | B | B | B | B | B |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(9.3)** | **B(11.5)** | **D(25.2)** | **A(6.5)** | **B(14.6)** | **D(33.1)** | **A(7.2)** |
| Eagle Road (S.R. 1006) & High School Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBT | C | C | C | -- | C | C | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **A(2.5)** | **A(2.6)** | **A(2.4)** | **--** | **A(2.8)** | **A(2.6)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO/LO Driveway | WBR | -- | -- | B | -- | -- | B | -- |
| | SBL | -- | -- | B | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(0.6)** | **--** | **--** | **A(0.6)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE II (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) - WEEKDAY PM PEAK HOUR

| Intersection | Movement | Weekday PM Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Proposed Driveway (Residential) (East) | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBL | -- | -- | A | -- | -- | A | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **--** | **--** | **A(0.0)** | **--** | **--** | **A(0.0)** | **--** |
| Reed Road & Proposed Convenience Market Driveway | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(3.7)** | **--** | **--** | **A(3.7)** | **--** |
| Shopping Center Driveway & Proposed Convenience Market Driveway | EBL | -- | -- | A | -- | -- | A | -- |
| | EBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(0.5)** | **--** | **--** | **A(0.4)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO Driveway (Convenience Market) | WBR | -- | -- | B | -- | -- | B | -- |
| | **ILOS** | **--** | **--** | **A(0.1)** | **--** | **--** | **A(0.1)** | **--** |
| Eagle Road (S.R. 1006) & West Rolling Road | EBT | -- | -- | -- | A | -- | -- | A |
| | EBR | -- | -- | -- | | -- | -- | |
| | WBL | B | B | B | A | B | B | A |
| | WBT | -- | -- | -- | | -- | -- | |
| | NBL | F(363.0) | F(453.1) | F(999+) | B | F(543.4) | F(999+) | C |
| | NBR | B | B | B | | B | B | |
| | **ILOS** | **C(15.0)** | **C(17.8)** | **F(51.6)** | **A(4.0)** | **C(20.7)** | **F(62.1)** | **A(4.6)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Lawrence Road (S.R. 1020) | WBL | C | E | F(203.3) | D | E | F(212.1) | E |
| | WBR | C | C | C | D | C | C | D |
| | NBT | C | D | F(103.9) | A | D | F(95.1) | A |
| | NBR | B | D | D | A | C | D | A |
| | SBL | F(154.7) | E | E | D | E | E | E |
| | SBT | A | A | B | A | A | B | A |
| | **ILOS** | **C(29.5)** | **D(37.7)** | **E(71.9)** | **B(17.5)** | **D(35.8)** | **E(69.9)** | **B(18.9)** |
| Sproul Road (S.R. 0320) & Williamsburg Drive/ Shopping Center Driveway | EBL | C | D | D | C | D | D | C |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | D | E | F(195.1) | F(102.8) | F(115.3) | F(274.5) | F(131.2) |
| | WBT | | | | | | | |
| | WBR | B | C | B | B | C | C | C |
| | NBL | B | C | C | B | C | C | B |
| | NBT | F(101.8) | F(110.5) | F(264.0) | C | D | F(174.4) | B |
| | NBR | A | A | A | | A | A | |
| | SBL | B | D | D | B | D | D | B |
| | SBT | C | D | F(98.8) | D | C | F(55.6) | C |
| | SBR | | | | | | | |
| | **ILOS** | **D(54.9)** | **E(72.7)** | **F(164.5)** | **C(32.5)** | **D(47.8)** | **F(114.8)** | **C(27.8)** |
| Sproul Road (S.R. 0320) & Reed Road | WBL | D | E | -- | -- | E | -- | -- |
| | WBR | B | C | -- | -- | C | -- | -- |
| | NBT | B | C | -- | -- | C | -- | -- |
| | NBR | B | B | -- | -- | B | -- | -- |
| | SBL | E | E | -- | -- | E | -- | -- |
| | SBT | A | A | -- | -- | A | -- | -- |
| | **ILOS** | **B(19.0)** | **C(20.0)** | **--** | **--** | **C(20.8)** | **--** | **--** |
| Sproul Road (S.R. 0320) & Springfield Road (S.R. 1009) | WBR | B | C | C | C | C | C | C |
| | NBT | A | C | D | D | C | F(88.3) | D |
| | NBR | | | | | | | |
| | SBL | C | D | F(132.1) | D | C | F(87.3) | D |
| | SBT | A | A | A | A | A | A | A |
| | **ILOS** | **B(10.7)** | **B(19.4)** | **D(40.7)** | **C(27.9)** | **B(18.7)** | **D(50.6)** | **C(26.1)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Old Marple Road (S.R. 1008) | EBL | C | C | C | D | C | D | D |
| | EBT | | | | | | | |
| | EBR | | | | B | | | B |
| | WBL | C | C | C | C | C | C | C |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | C | D | F(285.7) | C | D | F(258.6) | C |
| | NBT | | | | C | | | C |
| | NBR | | | | | | | |
| | SBL | B | B | D | C | B | C | C |
| | SBT | | | | B | | | B |
| | SBR | | | | | | | |
| | **ILOS** | **C(21.5)** | **C(27.8)** | **F(147.9)** | **C(24.1)** | **C(31.8)** | **F(135.0)** | **C(27.4)** |
| Sproul Road (S.R. 0320) & State Road (S.R. 0001) | EBL | E | E | F(129.2) | F(133.5) | F(124.8) | F(246.8) | F(124.4) |
| | EBLT | A | A | A | A | A | A | A |
| | EBR | A | A | A | A | A | A | A |
| | WBL | F(129.0) | E | E | F(151.9) | F(81.8) | F(81.8) | F(83.8) |
| | WBLT | F(126.0) | E | E | F(157.7) | F(80.6) | F(80.4) | F(82.1) |
| | WBR | | | | | | | |
| | NBL | F(125.8) | F(195.7) | F(195.7) | B | F(92.7) | F(92.7) | B |
| | NBT | C | C | D | A | C | C | A |
| | NBR | A | A | A | A | A | A | A |
| | SBL | E | E | F(94.3) | E | E | F(211.5) | E |
| | SBT | D | E | F(109.6) | E | E | F(118.1) | E |
| | SBR | A | A | A | A | A | A | A |
| | **ILOS** | **E(71.1)** | **E(73.6)** | **F(99.8)** | **E(68.8)** | **E(74.5)** | **F(114.5)** | **E(56.3)** |
| Springfield Road (S.R. 1009) & State Road (S.R. 0001) | EBL | F(143.4) | F(397.5) | F(397.5) | F(238.2) | F(214.4) | F(214.4) | F(215.0) |
| | EBT | F(84.8) | F(83.2) | F(92.9) | E | E | F(79.3) | E |
| | EBR | A | A | A | A | A | A | A |
| | WBL | C | C | C | C | C | C | C |
| | WBT | F(142.3) | F(87.1) | F(100.1) | F(108.4) | F(100.8) | F(117.4) | F(100.1) |
| | WBR | | | | | | | |
| | NBL | F(151.0) | F(219.9) | F(305.0) | F(275.2) | F(213.9) | F(213.9) | F(318.6) |
| | NBT | D | D | E | F(110.8) | D | F(130.9) | F(162.4) |
| | NBR | | | | | | | |
| | SBL | D | F(137.2) | F(307.6) | F(143.0) | E | F(170.9) | F(150.0) |
| | SBT | E | E | F(122.0) | F(175.2) | F(151.5) | F(301.4) | F(236.5) |
| | SBR | | | | | | | |
| | **ILOS** | **F(104.7)** | **F(110.7)** | **F(137.3)** | **F(127.0)** | **F(101.5)** | **F(138.6)** | **F(131.5)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Springfield Road (S.R. 1009) & Eagle Road (S.R. 1006) | WBL | D | C | C | C | D | D | C |
| | WBR | C | B | B | B | B | C | B |
| | NBT | B | B | F(84.4) | A | B | C | B |
| | NBR | | | | A | | | A |
| | SBL | A | A | F(999+) | A | A | F(365.0) | B |
| | SBR | | | | A | | | A |
| | **ILOS** | **B(18.2)** | **B(17.0)** | **F(371.3)** | **B(10.4)** | **B(19.2)** | **F(137.1)** | **B(14.5)** |
| Lawrence Road (S.R. 1020) & Parkway Avenue | EBL | A | A | A | B | A | B | B |
| | EBT | | | | | | | |
| | EBR | | | | | | | |
| | WBL | A | A | B | B | A | B | B |
| | WBT | | | | | | | |
| | WBR | | | | | | | |
| | NBL | B | C | D | C | C | D | C |
| | NBT | B | C | C | C | C | D | C |
| | NBR | | | | | | | |
| | SBL | B | B | C | B | B | C | B |
| | SBT | | | | | | | |
| | SBR | | | | | | | |
| | **ILOS** | **A(9.4)** | **B(10.5)** | **B(15.9)** | **B(14.4)** | **B(11.1)** | **B(17.0)** | **B(15.4)** |
| Parkway Avenue & Shopping Center Driveway/ Westbourne Drive | EBLT | B | B | C | C | C | C | C |
| | EBR | B | B | B | B | B | B | B |
| | WB | B | B | B | B | B | B | B |
| | NBL | C | C | D | A | D | E | A |
| | NBTR | | | | | | | |
| | SBL | C | C | C | A | C | C | A |
| | SBTR | | | | | | | |
| | **ILOS** | **C(16.8)** | **C(17.9)** | **C(23.8)** | **A(9.9)** | **C(19.4)** | **D(26.0)** | **B(10.2)** |
| Red Hill Drive & Parkway Avenue Reed Road/ | EBL | B | B | C | C | B | D | C |
| | EBT | | | | C | | | C |
| | EBR | B | B | C | B | B | C | B |
| | WB | B | B | B | C | B | B | C |
| | NBL | A | A | B | A | A | B | A |
| | NBT | A | A | A | A | A | A | A |
| | NBR | A | A | A | A | A | A | A |
| | SB | B | B | C | B | B | C | B |
| | **ILOS** | **B(11.7)** | **B(12.1)** | **B(19.4)** | **B(14.4)** | **B(12.3)** | **C(20.3)** | **B(14.3)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Marpit Drive/ Proposed Driveway | EBL | -- | -- | B | -- | -- | B | -- |
| | EBTR | -- | -- | B | -- | -- | B | -- |
| | WBL | B | B | B | -- | B | B | -- |
| | WBT | -- | -- | B | -- | -- | B | -- |
| | WBR | B | B | | -- | B | | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBT | A | A | B | -- | A | B | -- |
| | NBR | | | | -- | | | -- |
| | SBL | A | A | B | -- | B | B | -- |
| | SBT | A | A | A | -- | A | B | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(8.1)** | **A(8.3)** | **B(12.3)** | **--** | **A(8.5)** | **B(12.8)** | **--** |
| Eagle Road (S.R. 1006) & Reed Road/Driveway | EBL | B | B | B | B | B | B | B |
| | EBT | B | B | B | B | B | B | B |
| | EBR | | | | | | | |
| | WBL | C | C | C | C | C | C | C |
| | WBT | | | | | | | |
| | WBR | B | B | C | A | C | C | A |
| | NBL | B | B | B | C | B | B | C |
| | NBT | | | | | | | |
| | NBR | | | | | | | |
| | SBL | F(101.8) | F(114.4) | F(204.5) | C | F(125.9) | F(217.0) | C |
| | SBT | | | | B | | | B |
| | SBR | B | B | B | | B | B | |
| | **ILOS** | **D(43.6)** | **D(47.8)** | **E(77.1)** | **B(18.7)** | **D(51.5)** | **F(81.3)** | **B(19.3)** |
| Sproul Road (S.R. 0320) & Crum Creek Road/ Realigned Reed Road | EBL | F(90.9) | F(537.5) | E | -- | F(599.7) | E | -- |
| | EBT | | | E | -- | | E | -- |
| | EBR | | | | -- | | | -- |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | D | -- | -- | D | -- |
| | WBR | -- | -- | C | -- | -- | C | -- |
| | NBL | B | B | D | -- | B | D | -- |
| | NBT | -- | -- | E | -- | -- | E | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | A | -- | -- | B | -- |
| | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(1.2)** | **A(6.5)** | **D(41.3)** | **--** | **A(7.0)** | **D(43.1)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT Midday PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Sproul Road (S.R. 0320) & Cemetery Driveway/ Don Guanella Driveway/ Proposed Site Driveway | EBL | B | F(636.9) | E | -- | F(731.9) | E | -- |
| | EBT | | | A | -- | | A | -- |
| | EBR | | | | | | | |
| | WBL | E | F(205.3) | E | -- | F(244.5) | E | -- |
| | WBT | | | A | -- | | A | -- |
| | WBR | | | C | | | C | |
| | NBL | A | B | C | -- | B | C | -- |
| | NBT | -- | -- | D | -- | -- | D | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | A | A | E | -- | B | E | -- |
| | SBT | -- | -- | B | -- | -- | B | -- |
| | SBR | -- | -- | | | -- | | |
| | **ILOS** | **A(0.9)** | **D(34.5)** | **C(32.7)** | **--** | **E(39.7)** | **C(33.1)** | **--** |
| Sproul Road (S.R. 0320) & Southern Cemetery Driveway/ Proposed Site Driveway | EBL | B | C | D | -- | C | D | -- |
| | EBT | -- | -- | E | -- | -- | E | -- |
| | EBR | B | B | | | B | | |
| | WBL | -- | -- | E | -- | -- | E | -- |
| | WBT | -- | -- | - | -- | -- | -- | -- |
| | WBR | -- | -- | C | | -- | C | |
| | NBL | -- | -- | -- | -- | -- | -- | -- |
| | NBT | -- | -- | C | -- | -- | C | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | -- | -- | E | -- | -- | E | -- |
| | SBT | -- | -- | A | -- | -- | A | -- |
| | SBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **A(0.4)** | **A(0.4)** | **B(19.3)** | **--** | **A(0.4)** | **B(19.9)** | **--** |
| Sproul Road (S.R. 0320) & High School Driveway | WBL | B | B | C | C | B | D | C |
| | WBR | | | | | | | |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | A | B | C | C | B | C | C |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(0.6)** | **A(1.1)** | **A(0.2)** | **A(0.2)** | **A(1.3)** | **A(0.2)** | **A(0.2)** |
| Springfield Road (S.R. 1009) & Old Marple Road (S.R. 1008) | EBL | F(84.0) | F(135.0) | F(618.8) | C | F(174.6) | F(762.0) | C |
| | EBR | | | | | | | |
| | NBL | B | B | B | A | B | B | A |
| | NBT | -- | -- | -- | | -- | -- | |
| | SBT | -- | -- | -- | A | -- | -- | A |
| | SBR | -- | -- | -- | | -- | -- | |
| | **ILOS** | **B(10.5)** | **C(16.1)** | **F(59.5)** | **A(5.7)** | **C(20.7)** | **F(73.5)** | **A(5.9)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Shopping Center Driveway/ Proposed Driveway | EBL | A | A | B | -- | A | B | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | D | D | C | -- | E | C | -- |
| | SBR | | | | | | | |
| | NBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **A(6.8)** | **A(7.5)** | **A(4.6)** | **--** | **A(8.4)** | **A(4.9)** | **--** |
| Reed Road & Lawrence Business Park Driveway/ Proposed Site Driveway | EBL | A | A | B | -- | A | B | -- |
| | EBT | -- | -- | | -- | -- | | -- |
| | EBR | -- | -- | B | -- | -- | B | -- |
| | WBL | -- | -- | C | -- | -- | C | -- |
| | WBT | -- | -- | A | -- | -- | A | -- |
| | WBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBT | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | SBL | C | C | C | -- | C | C | -- |
| | SBT | | | | -- | | | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **A(2.5)** | **A(2.6)** | **B(15.5)** | **--** | **A(2.7)** | **B(15.5)** | **--** |
| Reed Road & Parkway Avenue | WBL | C | C | C | C | C | D | C |
| | WBR | | | | C | | | C |
| | NBT | -- | -- | -- | -- | -- | -- | -- |
| | NBR | -- | -- | -- | -- | -- | -- | -- |
| | SBL | B | B | B | B | B | B | B |
| | SBT | -- | -- | -- | -- | -- | -- | -- |
| | **ILOS** | **A(4.3)** | **A(4.5)** | **A(5.8)** | **A(4.3)** | **A(4.6)** | **A(6.2)** | **A(4.4)** |
| Eagle Road (S.R. 1006) & High School Driveway | EBL | A | A | A | -- | A | A | -- |
| | EBT | -- | -- | -- | -- | -- | -- | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | WBR | -- | -- | -- | -- | -- | -- | -- |
| | SBT | B | B | B | -- | B | B | -- |
| | SBR | | | | -- | | | -- |
| | **ILOS** | **A(1.4)** | **A(1.4)** | **A(1.1)** | **--** | **A(1.4)** | **A(1.1)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO/LI Driveway | WBR | -- | -- | B | -- | -- | B | -- |
| | SBL | -- | -- | B | -- | | B | -- |
| | **ILOS** | **--** | **--** | **A(0.9)** | **--** | **--** | **A(0.9)** | **--** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

## TABLE III (Continued)
## LEVEL OF SERVICE DELAY (SECONDS) – SAT MIDDAY PEAK HOUR

| Intersection | Movement | SAT Midday Peak Hour | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2014 Existing | 2020 Base | 2020 Projected | 2020 Projected[1] | 2025 Base | 2025 Projected | 2025 Projected[1] |
| Reed Road & Proposed Driveway (Residential) (East) | EBT | -- | -- | -- | -- | -- | -- | -- |
| | EBR | -- | -- | -- | -- | -- | -- | -- |
| | WBL | -- | -- | A | -- | -- | A | -- |
| | WBT | -- | -- | -- | -- | -- | -- | -- |
| | NBL | -- | -- | B | -- | -- | B | -- |
| | NBR | -- | -- | | -- | -- | | -- |
| | **ILOS** | **--** | **--** | **A(0.1)** | **--** | **--** | **A(0.1)** | **--** |
| Reed Road & Proposed Convenience Market Driveway | SBR | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(0.2)** | **--** | **--** | **A(0.2)** | **--** |
| Shopping Center Driveway & Proposed Convenience Market Driveway | EBL | -- | -- | A | -- | -- | A | -- |
| | EBR | -- | -- | | -- | -- | | -- |
| | NBL | -- | -- | A | -- | -- | A | -- |
| | **ILOS** | **--** | **--** | **A(1.1)** | **--** | **--** | **A(1.1)** | **--** |
| Sproul Road (S.R. 0320) & Proposed RI/RO Driveway (Convenience Market) | WBR | -- | -- | C | -- | -- | C | -- |
| | **ILOS** | **--** | **--** | **A(0.1)** | **--** | **--** | **A(0.1)** | **--** |
| Eagle Road (S.R. 1006) & West Rolling Road | EBT | -- | -- | -- | A | -- | -- | A |
| | EBR | -- | -- | -- | | -- | -- | |
| | WBL | A | A | A | A | A | A | A |
| | WBT | -- | -- | -- | | -- | -- | |
| | NBL | D | D | F(95.2) | B | E | F(109.5) | A |
| | NBR | B | B | B | | B | B | |
| | **ILOS** | **A(5.3)** | **A(5.5)** | **B(12.3)** | **A(4.4)** | **A(5.9)** | **B(13.7)** | **A(4.1)** |

Base = No-Build scenario, Projected = Build scenario, ILOS = Overall Intersection Level of Service
1 = With Site- Related Improvements

# TABLE IV
# 95TH PERCENTILE QUEUE ANALYSIS

| Intersection | Lane Group | 2025 Base Conditions | | | | 2025 Projected Conditions[1] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Existing Storage | 95th Percentile Queue Length (ft) | | | Proposed Storage | 95th Percentile Queue Length (ft) | | |
| | | | A.M. | P.M. | SAT. | | A.M. | P.M. | SAT. |
| Sproul Road & Lawrence Road | WBL | [1030] | 353 | 890 | 468 | [1030] | 240 | 445 | 390 |
| | WBR | [1030] | 963 | 405 | 403 | [1030] | 810 | 575 | 505 |
| | NBT | [600] | 613 | 720 | 665 | [600] | 838 | 833 | 250 |
| | NBR | 155 | 235 | 208 | 368 | [600] | 58 | 218 | 48 |
| | SBL | 160 | 530 | 1283 | 598 | 160 | 543 | 1258 | 575 |
| | SBT | -- | 198 | 555 | 345 | -- | 258 | 545 | 428 |
| Sproul Road & Williamsburg Drive/ Shopping Center Driveway | EB | -- | 123 | 113 | 65 | -- | 78 | 123 | 63 |
| | WBLT | -- | 110 | 775 | 230 | -- | 63 | 538 | 315 |
| | WBR | -- | 90 | 228 | 220 | -- | 50 | 220 | 150 |
| | NBL | 115 | <25 | <25 | <25 | 115 | <25 | <25 | <25 |
| | NBT | [1250] | <25 | 600 | 858 | [1250] | <25 | <25 | 80 |
| | NBR | 450 | <25 | <25 | <25 | | | | |
| | SBL | 240 | 38 | 98 | 283 | 240 | 25 | 65 | 95 |
| | SBTR | [600] | 110 | 100 | 683 | [600] | 40 | 278 | 625 |
| Sproul Road & Crum Creek Road/ Realigned Reed Road | EBL | -- | 163 | 250 | 128 | 75 | 35 | <25 | <25 |
| | EBTR | | | | | -- | 73 | 118 | 88 |
| | WBL | -- | -- | -- | -- | [360] | 183 | 285 | 220 |
| | WBT | -- | -- | -- | -- | [360] | <25 | 45 | 43 |
| | WBR | -- | -- | -- | -- | 240 | 210 | 235 | 238 |
| | NBL | 70 | <25 | 28 | <25 | 175 | <25 | <25 | 90 |
| | NBT | [1475] | -- | -- | -- | [680] | 203 | 83 | 818 |
| | NBR | | -- | -- | -- | | | | |
| | SBL | [200] | -- | -- | -- | 350 | 203 | 350 | 350 |
| | SBT | | -- | -- | -- | [1700] | 283 | 205 | 548 |
| | SBR | | -- | -- | -- | 225 | <25 | <25 | <25 |
| Sproul Road & RI/RO/LI Driveway | WBR | -- | -- | -- | -- | -- | <25 | <25 | <25 |
| | SBL | -- | -- | -- | -- | 75 | <25 | <25 | <25 |
| Sproul Road & Cemetery Driveway/ Don Guanella Driveway/ Proposed Main Driveway | EBL | -- | 25 | 25 | 410 | 75 | <25 | <25 | 35 |
| | EBTR | -- | | | | -- | <25 | <25 | <25 |
| | WBL | -- | <25 | 158 | <25 | 385 | 63 | 368 | 385 |
| | WBT | -- | | | | -- | <25 | <25 | <25 |
| | WBR | -- | | | | 170 | 38 | 145 | 175 |
| | NBL | [1325] | <25 | <25 | <25 | [1075] | <25 | <25 | 33 |
| | NBT | [1325] | -- | -- | -- | [1325] | 25 | 485 | 593 |
| | NBR | | -- | -- | -- | | | | |
| | SBL | [1475] | <25 | <25 | <25 | 425 | 120 | 308 | 413 |
| | SBTR | [1475] | -- | -- | -- | [1300] | <25 | 193 | 528 |
| Sproul Road & Southern Cemetery Driveway/ Proposed Southern Driveway | EBL | -- | <25 | <25 | <25 | 75 | <25 | <25 | <25 |
| | EBTR | -- | <25 | <25 | <25 | -- | <25 | <25 | 105 |
| | WBL | -- | -- | -- | -- | 260 | 98 | 255 | 258 |
| | WBR | -- | -- | -- | -- | -- | 65 | 138 | 110 |
| | NBT | [650] | -- | -- | -- | [650] | 95 | 453 | 713 |
| | NBR | | -- | -- | -- | | | | |
| | SBL | -- | -- | -- | -- | 250 | 85 | 118 | 195 |
| | SBT | [1325] | -- | -- | -- | [1325] | <25 | 1190 | <25 |

1 = With Site Improvements, [--] = Distance to Adjacent Study Area Intersection

# TABLE IV (CONTINUED)
# 95TH PERCENTILE QUEUE ANALYSIS

| Intersection | Lane Group | 2025 Base Conditions | | | | 2025 Projected Conditions[1] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Existing Storage | 95th Percentile Queue Length (ft) | | | Proposed Storage | 95th Percentile Queue Length (ft) | | |
| | | | A.M. | P.M. | SAT. | | A.M. | P.M. | SAT. |
| Sproul Road & HS Driveway | WBR | -- | 40 | <25 | <25 | --- | 35 | <25 | <25 |
| | SBL | -- | 48 | <25 | <25 | [630] | 45 | <25 | <25 |
| Sproul Road & Springfield Road | WBR | [400] | 369 | 120 | 171 | [400] | 293 | 213 | 288 |
| | NBTR | [1610] | 298 | 270 | 202 | [1610] | 741 | 698 | 570 |
| | SBL | [450] | 283 | 575 | 332 | [450] | 253 | 1133 | 780 |
| | SBT | [450] | <25 | 201 | <25 | 860 | <25 | <25 | <25 |
| Sproul Road & Old Marple Road | EBLT | -- | 270 | 343 | 270 | -- | 148 | 315 | 343 |
| | EBR | | | | | 75 | <25 | 25 | 28 |
| | WB | [800] | 1060 | 300 | 300 | [800] | 398 | 238 | 283 |
| | NBL | [1100] | 1323 | 2100 | 995 | 225 | 198 | 93 | 68 |
| | NBTR | | | | | [1100] | 420 | 340 | 650 |
| | SBL | [1610] | 380 | 493 | 353 | 75 | <25 | <25 | <25 |
| | SBTR | | | | | [1610] | 285 | 633 | 413 |
| Sproul Road & State Road | EBL | 320 | 220 | 340 | 563 | 320 | 293 | 363 | 835 |
| | EBLT | -- | <25 | 410 | <25 | -- | <25 | <25 | <25 |
| | EBR | 370 | <25 | <25 | <25 | 370 | <25 | <25 | <25 |
| | WBL | 205 | 195 | 480 | 485 | 205 | 195 | 563 | 458 |
| | WBLTR | [1610] | 230 | 728 | 495 | [1610] | 230 | 688 | 465 |
| | NBL | 350 | 700 | 603 | 728 | 350 | 630 | 290 | 283 |
| | NBT | -- | 468 | 370 | 518 | -- | 500 | 198 | 150 |
| | NBR | -- | <25 | <25 | <25 | -- | <25 | <25 | <25 |
| | SBL | 130 | <25 | 78 | 60 | 130 | 38 | 163 | 168 |
| | SBT | [1100] | 355 | 1293 | 618 | [1100] | 418 | 1153 | 610 |
| | SBR | 300 | <25 | <25 | <25 | 300 | <25 | <25 | <25 |
| Springfield Road & State Road | EBL | 230 | 705 | 553 | 733 | 230 | 705 | 585 | 733 |
| | EBT | [1610] | 563 | 1313 | 1005 | [1610] | 573 | 1365 | 1028 |
| | EBR | -- | <25 | <25 | <25 | -- | <25 | <25 | <25 |
| | WBL | 420 | <25 | 35 | 40 | 420 | <25 | 35 | 40 |
| | WBTR | -- | 1343 | 808 | 1425 | -- | 1400 | 820 | 1493 |
| | NBL | 165 | 1315 | 945 | 1213 | 165 | 1315 | 1038 | 1325 |
| | NBTR | -- | 688 | 458 | 500 | -- | 843 | 673 | 1265 |
| | SBL | 180 | 75 | 165 | 121 | 180 | 155 | 308 | 253 |
| | SBTR | [1150] | 678 | 685 | 830 | [1150] | 805 | 1138 | 1243 |
| Springfield Road & Old Marple Road | EB | [800] | 75 | 282 | 285 | [800] | 70 | 200 | 168 |
| | NBL | [1150] | <25 | <25 | <25 | [1150] | <25 | <25 | <25 |
| | NBT | | -- | -- | -- | | | | |
| | SBTR | [925] | -- | -- | -- | [925] | 390 | 670 | 108 |
| Springfield Road & Eagle Road | WBL | [620] | 1118 | 370 | 353 | [620] | 1035 | 315 | 308 |
| | WBR | [620] | 115 | 30 | <25 | [620] | 113 | 35 | 65 |
| | NBT | [925] | 1038 | 450 | 438 | [925] | 473 | 160 | 335 |
| | NBR | | | | | 175 | 130 | 95 | 45 |
| | SBL | [380] | 210 | 1675 | 200 | 75 | <25 | 63 | 40 |
| | SBT | | | | | [380] | 175 | 208 | 188 |

1 = With Site Improvements, [--] = Distance to Adjacent Study Area Intersection

# TABLE IV (CONTINUED)
# 95TH PERCENTILE QUEUE ANALYSIS

| Intersection | Lane Group | 2025 Base Conditions | | | | 2025 Projected Conditions[1] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Existing Storage | 95th Percentile Queue Length (ft) | | | Proposed Storage | 95th Percentile Queue Length (ft) | | |
| | | | A.M. | P.M. | SAT. | | A.M. | P.M. | SAT. |
| Lawrence Road & Parkway Avenue | EBL | [1030] | 350 | 215 | 220 | [1030] | 313 | 230 | 270 |
| | EBTR | | | | | | | | |
| | WBL | -- | 325 | 480 | 300 | -- | 320 | 540 | 458 |
| | WBTR | | | | | | | | |
| | NBL | 130 | 385 | 268 | 185 | 305+ | 305 | 213 | 188 |
| | NBTR | [820] | 243 | 160 | 200 | [820] | 215 | 158 | 240 |
| | SB | -- | <25 | 43 | <25 | -- | <25 | 48 | 43 |
| Reed Road/ Redhill Drive & Parkway Avenue/ Reed Road | EBL | [725] | 60 | 130 | 113 | [725] | 48 | 50 | 108 |
| | EBT | | | | | [725] | 40 | 123 | 83 |
| | EBR | [725] | 133 | 245 | 125 | 270 | 150 | 228 | 173 |
| | WB | -- | 65 | 75 | 58 | -- | 95 | 100 | 100 |
| | NBL | [250] | 95 | 188 | 93 | [250] | 108 | 170 | 125 |
| | NBT | [250] | 320 | 195 | 128 | [250] | 350 | 158 | 148 |
| | NBR | 75 | 35 | <25 | <25 | 75 | 38 | <25 | <25 |
| | SB | [1440] | 123 | 518 | 203 | [1440] | 145 | 490 | 255 |
| Reed Road & Shopping Center Driveway/ Proposed Driveway | EBL | [365] | <25 | <25 | 25 | 200 | <25 | <25 | 35 |
| | EBT | -- | -- | -- | -- | [365] | -- | -- | -- |
| | EBR | -- | -- | -- | -- | | | | |
| | WBT | [640] | -- | -- | -- | [640] | -- | -- | -- |
| | WBR | -- | -- | -- | -- | | | | |
| | SBLR | -- | -- | -- | -- | -- | <25 | <25 | 72 |
| | NBR | -- | <25 | <25 | 115 | -- | <25 | <25 | <25 |
| Reed Road & Lawrence Business Park Driveway/ Proposed Driveway | EBL | [640] | <25 | <25 | <25 | [640] | 85 | 153 | 120 |
| | EBT | | -- | -- | -- | | | | |
| | EBR | | -- | -- | -- | 150 | <25 | 73 | 110 |
| | WBL | [725] | -- | -- | -- | 150 | 40 | 98 | 128 |
| | WBTR | | -- | -- | -- | [725] | 133 | 200 | 183 |
| | NBL | -- | -- | -- | -- | 125 | 33 | 108 | 120 |
| | NBTR | -- | -- | -- | -- | -- | <25 | 73 | 83 |
| | SB | -- | <25 | 40 | 33 | -- | 45 | 103 | 93 |
| Reed Road & Eastern Driveway | WBL | -- | -- | -- | -- | [165] | <25 | <25 | <25 |
| | NB | -- | -- | -- | -- | -- | <25 | <25 | <25 |
| Reed Road & Parkway Avenue | WBL | -- | 45 | 285 | 73 | -- | <25 | 68 | <25 |
| | WBR | | | | | 125 | 48 | 115 | 53 |
| | SBL | [250] | 40 | 28 | <25 | [250] | 43 | 33 | <25 |
| Reed Road & Eagle Road/ Existing Driveway | EBL | 115 | 918 | 78 | 78 | 115 | 828 | 123 | 128 |
| | EBTR | [4090] | 48 | 223 | 105 | [4090] | 60 | 265 | 130 |
| | WBLT | -- | 260 | 230 | 223 | -- | 338 | 258 | 268 |
| | WBR | 170 | 1690 | 535 | 143 | 170 | 1500 | 158 | 150 |
| | NB | -- | <25 | <25 | <25 | -- | <25 | <25 | <25 |
| | SBL | [1750] | 258 | 855 | 885 | [1750] | 60 | 555 | 150 |
| | SBR | [1750] | 38 | 240 | 98 | [1750] | 55 | 295 | 125 |

1 = With Site Improvements, [--] = Distance to Adjacent Study Area Intersection

## TABLE IV (CONTINUED)
## 95TH PERCENTILE QUEUE ANALYSIS

| Intersection | Lane Group | 2025 Base Conditions | | | | 2025 Projected Conditions[1] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Existing Storage | 95th Percentile Queue Length (ft) | | | Proposed Storage | 95th Percentile Queue Length (ft) | | |
| | | | A.M. | P.M. | SAT. | | A.M. | P.M. | SAT. |
| Eagle Road & HS Driveway | EBL | [620] | <25 | <25 | <25 | [620] | <25 | <25 | <25 |
| | SB | -- | 280 | 43 | <25 | -- | 248 | 45 | <25 |
| Reed Road & CM Driveway | SBR | -- | -- | -- | -- | -- | <25 | <25 | <25 |
| Shopping Center Driveway & CM Driveway | EB | -- | -- | -- | -- | -- | <25 | <25 | <25 |
| | NBL | -- | -- | -- | -- | [185] | <25 | <25 | <25 |
| Parkway Avenue & Shopping Center Driveway/ Westbourne Drive | EBLT | -- | <25 | 53 | 50 | -- | 60 | 143 | 153 |
| | EBR | 50 | <25 | 25 | 35 | 50 | 25 | 88 | 110 |
| | WB | -- | <25 | <25 | <25 | -- | 58 | 48 | 48 |
| | NB | [1460] | 410 | 235 | 178 | [1460] | 255 | 205 | 243 |
| | SB | [825] | 50 | 368 | 100 | [825] | <25 | 368 | <25 |
| Sproul Road & RIRO Driveway (Convenience Market) | WBR | -- | -- | -- | -- | -- | <25 | <25 | <25 |
| Reed Road & Marpit Drive/ Proposed Driveway | EBL | -- | -- | -- | -- | 75 | <25 | 28 | <25 |
| | EBT | -- | -- | -- | -- | -- | <25 | 90 | 70 |
| | EBR | -- | -- | -- | -- | | | | |
| | WBL | -- | 98 | 230 | 100 | -- | 83 | 330 | 140 |
| | WBT | -- | -- | -- | -- | -- | 38 | 78 | 30 |
| | WBR | -- | 25 | 53 | <25 | | | | |
| | NBL | -- | -- | -- | -- | 100 | <25 | 75 | 68 |
| | NBT | [1750] | 1745 | 253 | 170 | [1750] | 1795 | 325 | 263 |
| | NBR | | | | | | | | |
| | SBL | 250 | 48 | <25 | 33 | 250 | 48 | 30 | 53 |
| | SBT | [2020] | 60 | 453 | 153 | [2020] | 68 | 588 | 228 |
| | SBR | -- | -- | -- | -- | 75 | <25 | <25 | <25 |
| Eagle Road & West Rolling Road | EBT | [2655] | -- | -- | -- | [2655] | 105 | 163 | 78 |
| | EBR | -- | -- | -- | -- | -- | -- | -- | -- |
| | WBL | [1485] | <25 | 53 | <25 | [1485] | <25 | <25 | <25 |
| | WBT | | | | | | | | |
| | NBL | -- | 518 | 125 | 48 | -- | 120 | 38 | 30 |
| | NBR | -- | 78 | <25 | <25 | -- | 233 | 98 | 58 |

1 = With Site Improvements, [--] = Distance to Adjacent Study Area Intersection

- TPD has made the following recommendations in relation to the proposed Cardinal Crossings development in Marple Township, as outlined below in **Table V**:

## TABLE V
## RECOMMENDATIONS

| Intersection | Recommended Improvements |
|---|---|
| Sproul Road & Lawrence Road | Provide a separate 200' WB left-turn lane on Lawrence Road |
| | Restripe the existing NB Sproul Road right-turn lane, to be continuous to the adjacent intersection at Williamsburg Drive/Shopping Center Driveway. This restriping will provide three (3) receiving lanes at this adjacent intersection. |
| | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Sproul Road corridor. In addition, design the signal timings at approximately 120-second base cycle length with a NB right-turn overlap phase |
| Sproul Road & Williamsburg Drive/ Shopping Center Driveway | Restripe the existing NB Sproul Road right-turn lane, to be an additional NB Sproul Road thru/right-turn lane. This restriping will provide three (3) NB Sproul Road thru lanes. |
| | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Sproul Road corridor. In addition, design the signal timings at approximately a 60-second base half-cycle length to further to reduce queuing while maintaining coordination along Sproul Road. |
| Sproul Road & Crum Creek Road/ Realigned Reed Road | Realign Reed Road and Crum Creek Road to form a single signalized intersection approximately 370 feet south of existing Reed Road. |
| | Provide a 175-foot left-turn lane on NB Sproul Road |
| | Provide dual 350-foot left-turn lanes on SB Sproul Road |
| | Provide a continuous thru/right-turn lane on NB Sproul Road |
| | Provide a 225-foot right-turn lane on SB Sproul Road |
| | Design EB Crum Creek Road to provide a separate 75-foot left-turn lane and a separate thru/right-turn lane. |
| | Design WB Reed Road to provide dual left-turn lanes, a thru lane, and a 240-foot right-turn lane. |
| | Provide signalization with Traffic Adaptive Signal Equipment to improve progression, delays, and queueing along the Sproul Road corridor. Signal timings at the intersection should include a 120-second base cycle-length, a protected SB left-turn phase with a WB right-turn overlap phase, and a protected WB left-turn phase. |
| Sproul Road & Proposed RI/RO/LI Driveway | Provide a continuous thru/right-turn lane on NB Sproul Road |
| | Stripe a 75-foot left-turn lane on SB Sproul Road from the existing center left-turn lane |
| Sproul Road & Cemetery Driveway/ Proposed Main Driveway | Stripe a 75-foot left-turn lane on NB Sproul Road from the existing center left-turn lane |
| | Stripe a 425-foot left-turn lane on SB Sproul Road from the existing center left-turn lane |
| | Provide a continuous thru/right-turn lane on NB Sproul Road |
| | Design EB Cemetery Driveway to maintain a separate 75-foot left-turn lane. |
| | Design WB Main Driveway to provide 405-foot dual left-turn lanes, a thru lane, and a 170-foot right-turn lane. |
| | Provide signalization with Traffic Adaptive Signal Equipment to improve progression, delays, and queueing along the Sproul Road corridor. Signal timings at the intersection should include a 120-second base cycle-length, a protected SB left-turn phase with a WB right-turn overlap phase, and a protected WB left-turn phase. |
| Sproul Road & Proposed RI Driveway | Provide a continuous thru/right-turn lane on NB Sproul Road |

## TABLE V (CONTINUED)
## RECOMMENDATIONS

| Intersection | Recommended Improvements |
|---|---|
| Sproul Road & Southern Cemetery Driveway/ Proposed Southern Driveway | Provide a continuous thru/right-turn lane on NB Sproul Road |
| | Provide a 250-foot left-turn lane on SB Sproul Road |
| | Design EB Cemetery Driveway to maintain a separate 75-foot left-turn lane. |
| | Design the Driveway to provide a 300-foot left-turn lane and a right-turn lane. |
| | Provide signalization with Traffic Adaptive Signal Equipment to improve progression, delays, and queueing along the Sproul Road corridor. Signal timings at the intersection should include a 120-second base cycle-length, a protected SB left-turn phase with a WB right-turn overlap phase, and a protected WB left-turn phase. |
| Sproul Road & HS Driveway | Widen Sproul Road to connect the existing center left-turn lane to the existing HS Driveway, resulting in an effective 630' left-turn lane on SB Sproul Road for the Cardinal O'Hara High School. |
| Sproul Road & Springfield Road | Widen Sproul Road to connect the proposed left-turn lane to the Cardinal O'Hara High School to provide a separate a 450' SB left-turn lane on Sproul Road, providing a total effective length of 1080'. |
| | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Sproul Road corridor. In addition, design the signal timings at approximately a 120-second base cycle length. |
| Sproul Road & Old Marple Road | Provide a 225-foot left-turn lane on NB Sproul Road |
| | Provide a 75-foot left-turn lane on SB Sproul Road |
| | Provide a 75-foot right-turn lane on EB Old Marple Road |
| | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Sproul Road corridor. In addition, design the signal timings at approximately a 60-second base half-cycle length to further to reduce queuing while maintaining coordination along Sproul Road. |
| Sproul Road & State Road | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Sproul Road corridor. In addition, design the signal timings at approximately a 120-second base cycle length. |
| Springfield Road & State Road | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Springfield Road corridor. |
| Springfield Road & Old Marple Road | Provide signalization with Traffic Adaptive Signal Equipment. Signal timings at the intersection should include a 60-second half-cycle to reduce queuing while maintaining coordination along Springfield Road. |
| Springfield Road & Eagle Road | Provide Traffic Adaptive Signal Equipment at this intersection to improve progression, delays, and queueing along the Springfield Road corridor. |
| | Widen along NB Springfield Road to provide a 175-foot right-turn lane |
| | Re-stripe the two (2) NB departure lanes to provide a 75-foot SB left-turn lane. |
| | Modify signal timings at the intersection to include a 60-second half-cycle to reduce queuing and a protected SB left-turn phase with a WB right-turn overlap phase. |
| Lawrence Road & Parkway Avenue | Re-stripe along Parkway Avenue to lengthen the NB left-turn lane from 130' to 305' to accommodate anticipated queues. |
| | Modify signal timings at the intersection to include coordination along Lawrence Road and Parkway Avenue, a 60-second half-cycle to reduce queuing while maintaining coordination, and maintain the WB advance phase on Lawrence Road. |

## TABLE V (CONTINUED)
## RECOMMENDATIONS

| Intersection | Recommended Improvements |
|---|---|
| Parkway Avenue & Shopping Center Driveway/ Westbourne Drive | Provide signalization. Signal timings at the intersection should include coordination and a 60-second half-cycle to reduce queuing while maintaining coordination along Parkway Avenue. |
| Reed Road/ Redhill Drive & Parkway Avenue | Widen Reed Road to provide a 270-foot right-turn lane on EB Reed Road |
| | Modify signal timings at the intersection to include coordination along Parkway Avenue and Reed Road, a 60-second half-cycle to reduce queuing while maintaining coordination, and maintain a NB left-turn phase with an EB right-turn overlap phase. |
| Reed Road & Parkway Avenue | Provide a separate 125' WB right-turn lane on Parkway Avenue |
| Eagle Road & Reed Road/ Existing Driveway | Re-stripe the SB Reed Road approach to provide a separate left-turn lane and a separate thru/right-turn lane (currently left/thru and right). |
| | Provide signal optimization including a separate SB Reed Road left-turn phase and WB Eagle Road overlap phase |
| Reed Road & Shopping Center Driveway/ Proposed Driveway | Design the NB Driveway approach to be RI/RO |
| | Provide a 200-foot left-turn lane on EB Reed Road |
| | Provide STOP-signage on the NB and SB approaches |
| Reed Road & Lawrence Business Park Driveway/ Proposed Driveway | Provide a separate 150' EB right-turn lane on Reed Road |
| | Provide a separate 150' WB left-turn lane on Reed Road |
| | Provide a separate 125' NB left-turn lane on the Proposed Driveway |
| | Provide Signalization. Signal timings at the intersection should include coordination along Reed Road, a WB Reed Road left-turn phase, and a 60-second half-cycle to reduce queuing while maintaining coordination along Reed Road. |
| Reed Road & Eastern Driveway | NB driveway approach should be STOP-controlled |
| Reed Road & CM Driveway | SB driveway approach should be STOP-controlled |
| | Provide "Do Not Block Intersection" Signage |
| Shopping Center Driveway & CM Driveway | EB driveway approach should be STOP-controlled |
| | Provide "Do Not Block Intersection" Signage |
| Sproul Road & RI/RO CM Driveway | Provide a 225-foot right-turn lane on NB Sproul Road |
| | WB driveway approach should be STOP-controlled |

## TABLE V (CONTINUED)
## RECOMMENDATIONS

| Intersection | Recommended Improvements |
|---|---|
| Reed Road & Marpit Drive/ Proposed Driveway | Align the proposed site driveway at the existing signal, opposite Marpit Drive |
| | Design the EB Driveway and WB Marpit Drive approaches to have a separate left-turn lane and separate thru/right lane |
| | Provide a separate 100' NB left-turn lane on Reed Road for ingress vehicles |
| | Provide a separate 75' SB right-turn lane on Reed Road for ingress vehicles |
| | Work with PennDOT and the Township to provide adequate ADA facilities where deemed feasible. |
| Eagle Road & West Rolling Road | Provide signalization. |
| | Signal cycle length should match the signal to the east at Reed Road. |
| | Phasing should include a WB left-turn advance phase on Eagle Road. |
| | Work with PennDOT and the Township to provide adequate ADA facilities where deemed feasible. |
| Proposed Driveway Locations | Provide adequate turning radii. |
| | Work with PennDOT and the Township to provide adequate ADA facilities where deemed feasible. |

As part of PennDOT's HOP process, the applicant will coordinate and fund the implementation of the recommended roadway improvements. Preliminary construction costs have not been determined at this time.

## INTRODUCTION

Traffic Planning and Design, Inc. (TPD) has completed a Transportation Impact Study (TIS) for the proposed Cardinal Crossings development in Marple Township, Delaware County, Pennsylvania. The project site is bounded by Sproul Road (S.R. 0320) to the west, Route 476 (S.R. 0476) to the south and Reed Road to the north and to the east, as shown in **Figure 1**. The land use context of the site and surrounding area is defined as Town/Village Center in the *Smart Transportation Guidebook*, dated March 2008. As shown in **Figure 2**, the proposed site will consist of:

- 318 Townhomes (Includes Carriage Homes)
- A 130-room Hotel
- A 55,000 s.f. Multiplex
- A 80,000 s.f. Recreational Community Center
- 100,000 s.f. of General Office space
- 690,000 s.f. of General Retail space
- Convenience Market with sixteen (16) fueling positions (5,000+ ksf).

In addition, it is TPD's understanding that, as part of this development, the existing Don Guanella facility will be relocated from its current location on Sproul Road, to a location adjacent to the existing Cardinal O'Hara High School, along Sproul Road (S.R. 0320) to the south.

Based on the anticipated occupancy of the residential portion of the site, TPD assumed a full-build future year of 2020 and a design year of 2025.

*Site Access Locations*

The site will be served by the following proposed site driveways:

- Four (4) Driveways to Sproul Road (S.R. 0320)
- Five (5) Driveways to Reed Road (including one (1) opposite Marpit Drive).
- One (1) Driveway to the extended Shopping Center Driveway off of Reed Road.

With the development of the site, the proposed site will share its southern access on Sproul Road (S.R. 0320) with the existing Cardinal O'Hara High School to the south.

This report has been prepared in accordance with PennDOT's *Policies and Procedures for Transportation Impact Studies*, dated January 28, 2009. The project scope and the extent of the study area were confirmed with representatives of PennDOT and Township staff at a meeting held on August 14, 2014. This TIS was revised based on the following:

- Review letters from PennDOT (December 29, 2014 and June 16, 2015)
- Review letters from Marple Township (February 3, 2015 and July 31, 2015)

- An additional meeting with representatives of PennDOT and Township staff, held on March 17, 2015
- An additional meeting with Marple Township staff/consultants, held on September 4, 2015

All relevant correspondence pertaining to this project has been included in **Appendix A**.

## EXISTING ROADWAY NETWORK

A field review of the existing roadway system in the study area was conducted. The existing roadway characteristics within the study area are summarized in **Table 1**. Photographs of the study area intersections are included in **Appendix B**.

**TABLE 1**
**ROADWAY CHARACTERISTICS WITHIN STUDY AREA**

| Roadway | State Route | Functional Classification/ Roadway Type | Predominant Directional Orientation | Average Daily Traffic | Posted Speed Limit |
|---|---|---|---|---|---|
| Sproul Road | S.R. 0320 | Urban Principal Arterial | North-South | 33,995[1] | 40 mph |
| State Road | S.R. 0001/ S.R. 2026 | Urban Expressway/ Urban Principal Arterial | East-West | 39,313[1] | 45 mph |
| Lawrence Road | S.R. 1020 | Urban Principal Arterial | East-West | 13,001[1] | 45 mph |
| Springfield Road | S.R. 2009 | Urban Principal Arterial | North-South | 12,124[1] | 25 mph |
| Parkway Avenue | N/A | Local Road | East-West | 10,310[2] | 25 mph |
| Reed Road | N/A | Minor Arterial | Varies | 9,079[1] | 35 mph |
| Eagle Road | S.R. 1006 | Urban Minor Collector | East-West | 8,657[1] | 35 mph |
| Old Marple Road | S.R. 1008 | Urban Collector | East-West | 6,571[1] | 35 mph |
| West Rolling Road | N/A | Collector Road | North-South | 6,158[1] | 25 mph |
| Marpit Drive | N/A | Local Road | East-West | 4,430[2] | 25 mph |
| Redhill Drive | N/A | Local Road | East-West | 2,820[2] | 25 mph |
| Crum Creek Road | N/A | Collector Road | East-West | 1,485[1] | 25 mph |
| Williamsburg Drive | N/A | Local Road | East-West | 1,195[2] | 25 mph |
| Westbourne Drive | N/A | Local Road | East-West | 1,310[2] | 25 mph |

1 = PennDOT iTMS Website (September 2014)
2 = Estimated Based on Peak Hour Counts (Peak Hours = 20% of ADT)

### *Land Use Context*

In Chapter 4 of the *Smart Transportation Guidebook*, dated March 2008, there is guidance pertaining to defining the land use context(s) for a given area. Based upon review of this information, the land uses surrounding the proposed site best fits the Town/Village Center designation, as described below:

***Town/Village Center**, "a mixed-use, high density area with building adjacent to the*

*sidewalk, typically two to four stories tall with commercial operations on the ground floor and offices or residences above. Parallel parking usually occupies both sides of the street with parking lots behind the buildings. Important public buildings, such as the town hall or library, are provided special prominence."*

Roadway Type

In Chapter 5 of the Smart Transportation Guidebook, there is guidance pertaining to defining the transportation context(s) for a given area. Comparing the existing condition roadway characteristics to the various options presented in Table 5.1 of the *Smart Transportation Guidebook*, the study area roadways best fit the following categories, as described below:

***Regional Arterial***, traffic volumes of 10,000 to 40,000 vehicles per day, intersection spacing of 660 to 1,320 feet, a desired operating speed of 30-55 mph, and a description as follows: "*Roadways in this category would be considered "Principal Arterial" in traditional functional classification."*

- State Road (S.R. 0001)
- Sproul Road (S.R. 0320)

***Community Arterial***, traffic volumes of 5,000 to 25,000 vehicles per day, intersection spacing of 300 to 1,320 feet, a desired operating speed of 25-55 mph, and a description as follows: "*often classified as Minor Arterial in traditional classification but may include road segments classified as Principal Arterial."*

- Lawrence Road (S.R. 1020)
- Springfield Road (S.R. 1009)

***Community Collector***, traffic volumes of 5,000 to 15,000 vehicles per day, intersection spacing of 300 to 660 feet, a desired operating speed of 25-55 mph, and a description as follows: "*often similar in appearance to a community arterial. Typically classified as Major Collector."*

- Eagle Road (S.R. 1006)
- Old Marple Road (S.R. 1008)

***Neighborhood Collector***, traffic volumes of <6,000 vehicles per day, intersection spacing of 300 to 660 feet, a desired operating speed of 25-35 mph, and a description as follows: "*similar in appearance to local roadways. Typically classified as Minor Collector."*

- Reed Road
- Parkway Avenue
- Crum Creek Road
- West Rolling Road

***Local Road***, traffic volumes of <3,000 vehicles per day, intersection spacing of 000 to 660 feet, a desired operating speed of 20-30 mph.

- Williamsburg Drive
- Redhill Drive
- Marpit Drive
- Westbourne Drive

Smart Transportation Criteria are included in **Appendix C**.

*Bicycle and Pedestrian Facilities*

Based on observations during field visits, there are currently no specific pedestrian/bicycle accommodations along the site frontages other than paved shoulders.

*Mass Transit Facilities*

Bus service is provided in the study area via SEPTA Routes 107, 110, and 107. There is no Train/Trolley service within 1.5 miles of the proposed site. The closest service is to the south at the Springfield Road, Saxer Ave and Woodland Ave Stations.

*Crash Data Investigation*

Crash data were obtained from PennDOT for the study area intersections. PennDOT defines a reportable crash as follows, "A reportable (crash) is one in which an injury or fatality occurs or if at least one of the vehicles involved requires towing from the scene." Reportable crashes were tabulated for the five-year time period beginning 1/1/2009 and ending 12/31/2013. For a given intersection, PennDOT considers a crash occurrence of 5 reportable, correctable crashes over a continuous twelve-month period during the past five years to be a threshold value, above which the intersection design should be reviewed to examine if corrective measures can be taken to enhance safety. The number of reportable crashes at the study area intersections is shown in **Table 2.**

**TABLE 2**
**PENNDOT REPORTABLE (CORRECTIBLE) CRASH DATA**

| Study Area Intersection | Number of Reportable (Correctible) Crashes | | | | |
|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 |
| Sproul Road & Lawrence Road | 2(1) | 3(0) | 3(1) | 3(2) | 3(2) |
| Sproul Road & Williamsburg Drive/Shopping Center Driveway | 3(1) | 4(3) | 3(2) | 5(3) | 3(2) |
| Sproul Road & Reed Road | 0(0) | 1(0) | 1(1) | 0(0) | 0(0) |
| Sproul Road & Crum Creek Road | 4(4) | 1(0) | 3(3) | 0(0) | 1(0) |
| Sproul Road & Don Guanella Driveway/Cemetery Driveway | 0(0) | 2(0) | 4(3) | 0(0) | 2(0) |
| Sproul Road & High School Driveway | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) |
| Sproul Road & Springfield Road | 1(0) | 1(1) | 1(0) | 0(0) | 3(2) |
| Sproul Road & Old Marple Road | 1(1) | 5(1) | 2(1) | 3(2) | 2(1) |
| Sproul Road & EB State Road | 3(0) | 7(3) | 3(0) | 2(1) | 5(2) |
| Sproul Road & WB State Road | 2(1) | 2(1) | 3(0) | 5(3) | 4(1) |
| Springfield Road & State Road | 12(5) | 5(3) | 4(2) | 4(2) | 7(5) |
| Springfield Road & Old Marple Road | 0(0) | 1(0) | 0(0) | 0(0) | 0(0) |
| Springfield Road & Eagle Road | 1(1) | 3(2) | 2(1) | 2(0) | 1(0) |
| Lawrence Road & Parkway Avenue | 4(2) | 1(0) | 3(2) | 2(0) | 9(4) |
| Reed Road/Redhill Drive & Parkway Avenue | 0(0) | 1(1) | 0(0) | 2(0) | 0(0) |
| Reed Road & Parkway Avenue | 2(0) | 2(1) | 2(1) | 0(0) | 0(0) |
| Reed Road & Marpit Drive | 2(1) | 4(4) | 3(2) | 1(0) | 0(0) |
| Reed Road & Eagle Road | 0(0) | 1(0) | 2(0) | 0(0) | 2(1) |
| Eagle Road & High School Driveway | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) |

Based on a review of the crash data, there were no continuous twelve-month periods during the past five years of available data where 5 or more crashes occurred that were deemed correctable, with the exception of the intersection of State Road (S.R. 0001) and Springfield Road in 2009 and 2013. Based on a review of these crashes, there was no discernible crash pattern. ***As requested, TPD prepared crash diagrams at the intersection of Lawrence Road and Parkway Avenue. These will be provided to PennDOT only under separate cover.***

## EXISTING TRAFFIC CONDITIONS

*Manual Turning Movement Counts*

Manual traffic counts were conducted on 15-minute intervals during the weekday morning (7:00 to 9:00 A.M.), weekday evening ( 4:00 to 6:00 P.M.) and Saturday midday (11:00 A.M. to 1:00 P.M.) peak periods. Data pertaining to heavy vehicles, pedestrians and transit vehicles were observed during the manual counts. Peak hours and count dates for the study area intersections are identified in **Table 3**.

## TABLE 3
## MANUAL TRAFFIC COUNT INFORMATION

| Intersection | Date of Traffic Counts[1] | Time Period | Intersection Peak Hour[2] |
|---|---|---|---|
| *Sproul Road & Lawrence Road* | Wednesday, April 9, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Wednesday, April 9, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |
| *Sproul Road & Williamsburg Drive/ Shopping Center Driveway* | Wednesday, April 9, 2014 | Weekday A.M. | 8:00 to 9:00 A.M. |
| | Wednesday, April 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |
| *Sproul Road & Reed Road* | Tuesday, April 8, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, April 8, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:45 to 1:45 P.M. |
| *Sproul Road & Crum Creek Road* | Tuesday, September 9, 2014 | Weekday A.M. | 7:45 to 8:45 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |
| *Sproul Road & Don Guanella Driveway/ Cemetery Driveway* | Wednesday, September 10, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Wednesday, September 10, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Sproul Road & High School Driveway* | Wednesday, September 10, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Wednesday, September 10, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Sproul Road & Springfield Road* | Thursday, April 10, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Thursday, April 10, 2014 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, September 20, 2014 | Saturday Midday | 12:15 to 1:15 P.M. |
| *Sproul Road & Old Marple Road* | Tuesday, April 8, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, April 8, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 12:30 to 1:30 P.M. |
| *Sproul Road & State Road* | Thursday, April 10, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Thursday, April 10, 2014 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 12:30 to 1:30 P.M. |

1. Counts were confirmed to be conducted when local schools were in session.
2. Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur.

## TABLE 3 (CONTINUED)
## MANUAL TRAFFIC COUNT INFORMATION

| Intersection | Date of Traffic Counts[1] | Time Period | Intersection Peak Hour[2] |
|---|---|---|---|
| *Springfield Road & State Road* | Thursday, April 10, 2014 | Weekday A.M. | 7:00 to 8:00 A.M. |
| | Thursday, April 10, 2014 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 12:45 to 1:45 P.M. |
| *Springfield Road & Old Marple Road* | Tuesday, September 9, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 11:15 A.M. to 12:15 P.M. |
| *Springfield Road & Eagle Road* | Tuesday, September 9, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 11:15 A.M. to 12:15 P.M. |
| *Lawrence Road & Parkway Avenue* | Tuesday, September 9, 2014 | Weekday A.M. | 7:45 to 8:45 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |
| *Parkway Avenue & Reed Road/Redhill Drive* | Tuesday, September 9, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 6, 2014 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |
| *Reed Road & Parkway Avenue* | Tuesday, September 9, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Reed Road & Marpit Drive* | Tuesday, September 9, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Eagle Road & Reed Road/Driveway* | Tuesday, September 9, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Tuesday, September 9, 2014 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Eagle Road & High School Driveway* | Thursday, April 10, 2014 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Thursday, April 10, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, September 13, 2014 | Saturday Midday | 11:15 A.M. to 12:15 P.M. |

1. Counts were confirmed to be conducted when local schools were in session.
2. Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur.

**TABLE 3 (CONTINUED)**
**MANUAL TRAFFIC COUNT INFORMATION**

| Intersection | Date of Traffic Counts[1] | Time Period | Intersection Peak Hour[2] |
|---|---|---|---|
| *Sproul Road & Southern Cemetery Driveway* | Wednesday, October 1, 2014 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, September 30, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, October 4, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Reed Road & Shopping Center Driveway* | Wednesday, October 1, 2014 | Weekday A.M. | 8:00 to 9:00 A.M. |
| | Tuesday, September 30, 2014 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, October 4, 2014 | Saturday Midday | 11:30 A.M. to 12:30 P.M. |
| *Reed Road & Lawrence Business Park Driveway* | Wednesday, October 1, 2014 | Weekday A.M. | 8:00 to 9:00 A.M. |
| | Tuesday, September 30, 2014 | Weekday P.M. | 4:30 to 5:30 P.M. |
| | Saturday, October 4, 2014 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Parkway Avenue & Westbourne Drive/ Shopping Center Driveway* | Tuesday, March 24, 2015 | Weekday A.M. | 7:30 to 8:30 A.M. |
| | Tuesday, March 24, 2015 | Weekday P.M. | 5:00 to 6:00 P.M. |
| | Saturday, March 21, 2105 | Saturday Midday | 12:00 to 1:00 P.M. |
| *Eagle Road & West Rolling Road* | Tuesday, March 24, 2015 | Weekday A.M. | 7:15 to 8:15 A.M. |
| | Tuesday, March 24, 2015 | Weekday P.M. | 4:45 to 5:45 P.M. |
| | Saturday, March 21, 2105 | Saturday Midday | 11:45 A.M. to 12:45 P.M. |

1. Counts were confirmed to be conducted when local schools were in session.
2. Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur.

Existing condition traffic volumes for the weekday A.M., weekday P.M. and Saturday peak hours are illustrated in **Figures 3-5**, respectively. Manual traffic count data sheets are provided in **Appendix D**.

*Automatic Traffic Recorder Counts*

Automatic Traffic Recorder (ATR) counts were conducted along the following roadways, in the vicinity of the proposed site, in order to determine the existing traffic volumes/patterns on a 24-hour weekday basis:

- Sproul Road (S.R. 0320) along the site frontage;
- Reed Road along the northern site frontage.

ATR count sheets are provided in **Appendix E**.

*Speed Study*

In addition to traffic volumes, the ATR counters also collected the speeds of vehicles traveling along Sproul Road (SR 0320) and Reed Road at the above noted locations. Based upon the data collected, the 85th percentile speed, which is defined to be the speed which 85% of drivers travel at or below as they pass the sampling location (or the speed which 15% of drivers exceed), was determined for each location. **Table 4** summarizes the recorded 85th percentile speeds.

**TABLE 4**
**85TH PERCENTILE TRAVEL SPEED SUMMARY**

| Location | Direction of Travel | 85th Percentile Speed |
|---|---|---|
| Sproul Road (S.R. 0320) – Along Site Frontage | Northbound | 51 mph |
| | Southbound | 53 mph |
| Reed Road – Northern Site Frontage | Eastbound | 43 mph |
| | Westbound | 36 mph |

## BASE (NO-BUILD) CONDITIONS

*Annual Background Growth*

A background growth factor for the roadways in the study area was developed based on growth factors for September 2012 to July 2013 obtained from the PennDOT Bureau of Planning and Research (BPR). The PennDOT BPR suggests using a background growth trend factor of 0.51% per year in Delaware County for urban non-interstate roadways. As such, the background growth factor was applied annually to yield overall growth percentages of 3.10% (0.51% per year, compounded over 6 years) for the 2020 buildout year and 5.76% (0.51% per year, compounded over 11 years) for the 2025 design year. ***It should be noted, since the first submission of this TIS, more current PennDOT BPR data has become available. However, new BPR growth rates are less conservative (0.44% per year in Delaware County) when compared to the growth rate noted above. Therefore, TPD continued to utilize the older growth rate.***

*Nearby Proposed Developments*

Base (no-build) traffic conditions were calculated to include traffic volumes from proposed developments, which though not operating under existing conditions, may be operating by the opening year (2020) and design year (2025) of the proposed development. Based on discussions with Marple Township staff, the following nearby planned developments were specifically included in this study:

**Marple Associates** is a proposed commercial development consisting of 260k retail, a drive-in bank, a fitness center, daycare, 40k office, and 150 townhomes. The site will be located on the southwest quadrant of the I-476/Route 3 interchange. Access will be taken from Route 3 and Langford Road. Trip generations and distributions were taken from a TIS prepared by Orth Rodgers, dated January 2014. Land Development for this site has not yet begun. Therefore, the 2015 opening year assumed in the TIS is most likely not reasonable. However, it is reasonable to

assume this nearby development could be complete by the 2020 opening year in this TIS. The Study Area in the Orth Rodgers TIS does not overlap with the proposed Study Area. Therefore, trips associated with Marple Associates was split up based on existing travel patterns in the proposed Study Area.

**Crozer Cancer Center** is a proposed 58+ ksf medical office development set to replace a 56+ ksf grocery store. The site will be located along Lawrence Road, near West Chester Pike. This project is approved. Based on a trip generation letter prepared by Horner Canter Associates, dated December 2013, this redevelopment will result in significantly less trips. Therefore, a TIS was not required for this site. Although the proposed site will generate less traffic than the previous use, it is TPD's understanding that neither use was operational when the counts for this site were completed. Therefore, TPD accounted for the proposed medical office. The TIS for Marple Associates assumed 13-15% of site traffic oriented towards the proposed Study Area. Since there is not a TIS for this site, TPD assumed a similar proportion of site traffic reaching the proposed Study Area. TPD split these trips utilizing similar methodologies as those utilized for Marple Associates above.

The additional traffic volumes due to background growth and background developments were added to the existing traffic data to produce 2020 and 2025 Base (no-build) Condition traffic volumes, as shown in **Figures 6-11**. Nearby Development figures are included in **Appendix F**.

## SCHEDULED ROADWAY IMPROVEMENTS

Based on a review of the PennDOT 12-Year Program and the DVRPC Transportation Improvement Program (TIP) there are no programmed roadway improvements in the vicinity of the proposed site.

Based on correspondence with Township Staff and PennDOT, signal timings along Sproul Road (S.R. 0320) have been recently optimized. These timings included cycle length and split changes. It is TPD's understanding that these timings were not in place at the time the traffic counts were conducted. Therefore, TPD included these timings under all opening year base (future no build) conditions. The information provided to TPD regarding these new signal timings is included with the signal diagrams in **Appendix K.**

As part of this project, the Applicant has agreed to re-align westbound Reed Road in order to align with Crum Creek Road. Currently, the operation of the existing signal at Sproul Road and Reed Road, negatively effects the operations at Crum Creek Road. This condition is caused by the close proximity of these intersections and the resultant queues from the signal. It is TPD's understanding that this condition causes vehicles on Crum Creek Road to cut-thru adjacent neighborhoods to access Williamsburg Drive and points north. Therefore, this re-alignment will allow eastbound Crum Creek Road to become part of a signal on Sproul Road and thereby reduce cut-thru conditions to the north.

## PROPOSED SITE ACCESS

*Site Access Locations*

The proposed site will be served by the following proposed site driveways:

- Four (4) Driveways to Sproul Road (S.R. 0320)
- Five (5) Driveways to Reed Road (including one (1) opposite Marpit Drive).
- One (1) Driveway to the extended Shopping Center Driveway off of Reed Road.

With the development of the proposed site, the proposed site will share its southern access on Sproul Road (S.R. 0320) with the existing Cardinal O'Hara High School to the south.

*Sight Distance Analysis*

A sight distance analysis was prepared for the proposed site driveways. In general, recommended safe sight distances depend upon the posted speed limit and roadway grades. The existing sight distances at the proposed driveways were measured in accordance with PennDOT Publication 282 Highway Occupancy Permit Guidelines and compared to PennDOT's desirable sight distance standard, which is identified in 67 PA Code Chapter 441.8(h), "Access to and Occupancy of Highways by Driveways and Local Roads." In addition, measured sight distances at the proposed driveways were compared to PennDOT's safe stopping sight distance standard, which is calculated by the following equation:

$$\mathbf{SSSD = 1.47VT + V^2/[30(f \pm g)]}$$

SSSD = safe stopping sight distance (acceptable sight distance)
V = Vehicle Speed
T = Perception Reaction Time of Driver (2.5 seconds)
f = Coefficient of Friction for Wet Pavements
g = Percent of Roadway Grade Divided by 100

**Table 5** shows the measured, desirable, acceptable (SSSD), and required sight distances at the site driveways for vehicles entering and exiting the site.

## TABLE 5
## SIGHT DISTANCE ANALYSIS

| | *Direction* | Posted Speed (mph) | 85th %ile Speed (mph) | *Sight Distances (feet)* | | | |
|---|---|---|---|---|---|---|---|
| | | | | Grade[1] (%) | DES[2] | SSSD[3] | **EXIST** |
| **Proposed Sproul Road RI/RO/LI Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 40 | 51 | -2 | 400 | 497 | **550+** |
| | *To the right* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| **Entering Left Turns** | *Approaching same direction* | 40 | 53 | +2 | --- | 487 | **550+** |
| | *Approaching opposite direction* | 40 | 51 | -2 | 398 | 497 | **550+** |
| **Proposed Sproul Road Northern Full-Access Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 40 | 51 | +2 | 400 | 458 | **1000+** |
| | *To the right* | 40 | 53 | +2 | 460 | 487 | **550** |
| **Entering Left Turns** | *Approaching same direction* | 40 | 53 | +2 | --- | 487 | **525** |
| | *Approaching opposite direction* | 40 | 51 | +2 | 398 | 458 | **1000+** |
| **Proposed Sproul Road Southern Full-Access Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 40 | 51 | -2 | 400 | 497 | **1000+** |
| | *To the right* | 40 | 53 | +2 | 460 | 487 | **1000+** |
| **Entering Left Turns** | *Approaching same direction* | 40 | 53 | +2 | --- | 487 | **1000+** |
| | *Approaching opposite direction* | 40 | 51 | -2 | 398 | 497 | **1000+** |
| **Proposed Sproul Road RI/RO Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 40 | 51 | -2 | 400 | 497 | **1000+** |
| | *To the right* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| **Entering Left Turns** | *Approaching same direction* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| | *Approaching opposite direction* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| **Proposed Reed Road Western Full-Access Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 43 | +4 | 300 | 334 | **334+[4]** |
| | *To the right* | 35 | 36 | -4 | 350 | 276 | **350+[4]** |
| **Entering Left Turns** | *Approaching same direction* | 35 | 36 | -4 | --- | 276 | **276+[4]** |
| | *Approaching opposite direction* | 35 | 43 | +4 | 320 | 334 | **334+[4]** |
| **Proposed Reed Road Extended Shopping Center Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 36 | -4 | 300 | 276 | **300+[4]** |
| | *To the right* | 35 | 43 | +4 | 350 | 334 | **350+[4]** |
| **Entering Left Turns** | *Approaching same direction* | 35 | 43 | +4 | --- | 334 | **334+[4]** |
| | *Approaching opposite direction* | 35 | 36 | -4 | 320 | 276 | **320+[4]** |
| **Proposed Reed Road Driveway (Opposite Lawrence Business Park)** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 43 | 0 | 300 | 357 | **500+** |
| | *To the right* | 35 | 36 | +4 | 350 | 246 | **425** |
| **Entering Left Turns** | *Approaching same direction* | 35 | 36 | +4 | --- | 246 | **400** |
| | *Approaching opposite direction* | 35 | 43 | 0 | 320 | 357 | **500+** |

DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance

1 = Roadway Grade Approaching Driveway
2 = At Posted Speed Limit
3 = At 85th Percentile Speed

**TABLE 5 (CONTINUED)**
**SIGHT DISTANCE ANALYSIS**

| | *Direction* | Posted Speed (mph) | 85th %ile Speed (mph) | *Sight Distances (feet)* | | | |
|---|---|---|---|---|---|---|---|
| | | | | Grade[1] (%) | DES[2] | SSSD[3] | **EXIST** |
| **Proposed Reed Road Eastern Full-Access Driveway** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 43 | -4 | 300 | 386 | **450+** |
| | *To the right* | 35 | 36 | +4 | 350 | 246 | **400** |
| **Entering Left Turns** | *Approaching same direction* | 35 | 36 | +4 | --- | 246 | **355** |
| | *Approaching opposite direction* | 35 | 43 | -4 | 320 | 386 | **450+** |
| **Proposed Reed Road Convenience Market Driveway (RI/RO)** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 36 | -4 | 400 | 276 | **400+[4]** |
| | *To the right* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| **Entering Left Turns** | *Approaching same direction* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| | *Approaching opposite direction* | N/A | N/A | N/A | N/A | N/A | **N/A** |
| **Proposed Convenience Market Driveway (On Shopping Center Driveway)** | | | | | | | |
| **Exiting Movements** | *To the left* | 25 | N/A | 0 | 250 | 147 | **250+[4]** |
| | *To the right* | 25 | N/A | 0 | 195 | 147 | **195+[4]** |
| **Entering Left Turns** | *Approaching same direction* | 25 | N/A | 0 | --- | 147 | **147+[4]** |
| | *Approaching opposite direction* | 25 | N/A | 0 | 190 | 147 | **190+[4]** |
| **Proposed Reed Road Driveway (Opposite Marpit Drive)** | | | | | | | |
| **Exiting Movements** | *To the left* | 35 | 43 | -2 | 440 | 371 | **475** |
| | *To the right* | 35 | 36 | +2 | 350 | 252 | **550+** |
| **Entering Left Turns** | *Approaching same direction* | 35 | 36 | +2 | --- | 252 | **460** |
| | *Approaching opposite direction* | 35 | 43 | -2 | 300 | 371 | **550+** |

DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance

1 = Roadway Grade Approaching Driveway
2 = At Posted Speed Limit
3 = At 85th Percentile Speed
4 = Realigned Reed Road does not yet exist. Sight Distance must be a minimum of this distance.

As shown in **Table 5**, the measured sight distances at the proposed site driveways exceed PennDOT's desirable sight distance requirements.

## TRIP GENERATION

The trip generation rates for the proposed site were obtained from the manual *Trip Generation*, Ninth Edition, 2012, an Institute of Transportation Engineers (ITE) Informational Report. The statistics in *Trip Generation* are empirical data based on more than 4,800 trip generation studies. The data are categorized by Land Use Codes, with total vehicular trips for a given land use estimated using an independent variable and statistically generated rates or equations. **Table 6** shows the rates/equations and directional percentages for the analyzed time periods.

**TABLE 6**
**PROPOSED SITE**
**TRIP GENERATION DATA**

| Time Period | Rates | Entering | Pass-By |
|---|---|---|---|
| **ITE #230 – Townhomes** | | | |
| Average Weekday | Ln(T) = 0.87*Ln(X) + 2.46 | 50% | N/A |
| Weekday A.M. | Ln(T) = 0.80*Ln(X) 0.26 | 17% | 0% |
| Weekday P.M. | Ln(T) = 0.82*Ln(X) + 0.32 | 67% | 0% |
| Saturday Midday | T = 0.29*(X) + 42.63 | 54% | 0% |
| **ITE #310 – Hotel** | | | |
| Average Weekday | T = 8.95*(X) + 373.16 | 50% | N/A |
| Weekday A.M. | T = 0.53*(X) | 59% | 0% |
| Weekday P.M. | T = 0.60*(X) | 51% | 0% |
| Saturday Midday | T = 0.69*(X) + 4.32 | 56% | 0% |
| **ITE #445 – Multiplex** | | | |
| Average Weekday | T = 63.10*(X)[1] | 50% | N/A |
| Weekday A.M. | N/A | N/A | N/A |
| Weekday P.M. | T = 4.91*(X) | 62% | 0% |
| Saturday Midday | T = 4.70*(X) | 75% | 0% |
| **ITE #495 – Recreational Community Center** | | | |
| Average Weekday | T = 32.82*(X) | 50% | N/A |
| Weekday A.M. | T = 2.05*(X) | 66% | 0% |
| Weekday P.M. | T = 2.74*(X) | 49% | 0% |
| Saturday Midday | T = 1.07*(X) | 54% | 0% |
| **ITE #710 – General Office** | | | |
| Average Weekday | Ln(T) = 0.76*Ln(X) + 3.68 | 50% | N/A |
| Weekday A.M. | Ln(T) = 0.80*Ln(X) + 1.57 | 88% | 0% |
| Weekday P.M. | T = 1.12*(X) + 78.45 | 17% | 0% |
| Saturday Midday | T = 0.43*(X) | 54% | 0% |
| **ITE #820 – General Retail** | | | |
| Average Weekday | Ln(T) = 0.65*Ln(X) + 5.83 | 50% | N/A |
| Weekday A.M. | Ln(T) = 0.61*Ln(X) + 2.24 | 62% | 24%[2] |
| Weekday P.M. | Ln(T) = 0.67*Ln(X) + 3.31 | 48% | 34% |
| Saturday Midday | Ln(T) = 0.65*Ln(X) + 3.78 | 52% | 26% |
| **ITE #853 – Convenience Store With Gasoline** | | | |
| Average Weekday | T = 845.60*($X^3$) | 50% | N/A |
| Weekday A.M. | T = 16.57*(X) | 50% | 63% |
| Weekday P.M. | T = 19.07*(X) | 50% | 66% |
| Saturday Midday | T = 10.00*(X) | 51% | 56%[2] |

T = Total Trips, X = independent variable (dwelling units, ksf, rooms, fueling positions)
1 = No ITE Data for the Independent Variable, Rate based on a ratio of Movie Screen Data
2 = No ITE Data, Utilized PM Minus 10%
3 = Based on ksf

It should be noted that in **Table 6**, if trip generation equations were available and resulted in a trip generation outside the standard deviation, trip generation rates were utilized.

*Interaction*

It is TPD's opinion that Multi-Use Interaction Reduction will occur between the proposed uses on site. For this purpose, TPD utilized methodologies outlined by ITE and Florida DOT, where

applicable for each land use and time period. The performed interaction between the proposed uses determined the following resultant interaction percentages:

- Average Weekday = 7% (ITE) = 5% Overall Effective Interaction
- Weekday A.M. = 13% (FDOT) = 10% Overall Effective Interaction
- Weekday P.M. = 10% (ITE and FDOT) = 9% Overall Effective Interaction
- Saturday Midday = 4% (ITE) = 3% Overall Effective Interaction

Florida DOT and ITE Data are included with the Interaction Worksheets in **Appendix G**.

Since the proposed Convenience Market is isolated, no interaction was assumed for this use. Finally, it is TPD's opinion that the location of the proposed recreational community center will lend itself towards usage by the residents of the proposed site. However, there is no approved data pertaining to interaction between these land uses. Therefore, TPD assumed a blanket 10% reduction of trip generation for the proposed recreational community (only) to account for interaction with the residential portion of the proposed site.

The trip generation of the proposed site is shown in **Table 7**.

## TABLE 7
## TRIP GENERATION – PROPOSED SITE

| Land Use | Size (X) | Total Trips | Int. Trips | Ext. Trips | Pass-By Trips | | | New Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Total | Enter | Exit | Total | Enter | Exit |
| ***Average Weekday*** | | | | | | | | | | |
| Townhomes | 318 du | 1760 | -637 | 1123 | N/A | N/A | N/A | 1123 | 577 | 546 |
| Hotel | 130 rooms | 1536 | 0 | 1536 | N/A | N/A | N/A | 1536 | 768 | 768 |
| Multiplex | 55 ksf | 3470 | 0 | 3470 | N/A | N/A | N/A | 3470 | 1735 | 1735 |
| Rec. Community Center | 80 ksf | 2706 | -270 | 2436 | N/A | N/A | N/A | 2436 | 1218 | 1218 |
| General Office | 100 ksf | 1312 | -255 | 1057 | N/A | N/A | N/A | 1057 | 558 | 499 |
| General Retail | 690 ksf | 23834 | -866 | 22968 | N/A | N/A | N/A | 22968 | 11439 | 11529 |
| Convenience Market | 5 ksf | 4228 | 0 | 4228 | N/A | N/A | N/A | 4228 | 2114 | 2114 |
| ***TOTAL*** | | ***38846*** | ***-2028*** | ***36818*** | ***N/A*** | ***N/A*** | ***N/A*** | ***36818*** | ***18409*** | ***18409*** |
| ***Weekday AM*** | | | | | | | | | | |
| Townhomes | 318 du | 130 | -38 | 92 | 0 | 0 | 0 | 92 | 3 | 89 |
| Hotel | 130 rooms | 69 | -11 | 58 | 0 | 0 | 0 | 58 | 41 | 17 |
| Multiplex | 55 ksf | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rec. Community Center | 80 ksf | 164 | -16 | 148 | 0 | 0 | 0 | 148 | 97 | 51 |
| General Office | 100 ksf | 191 | -27 | 164 | 0 | 0 | 0 | 164 | 154 | 10 |
| General Retail | 690 ksf | 506 | -44 | 462 | 110 | 55 | 55 | 352 | 232 | 120 |
| Convenience Market | 5 ksf | 265 | 0 | 265 | 166 | 83 | 83 | 99 | 50 | 49 |
| ***TOTAL*** | | ***1325*** | ***-136*** | ***1189*** | ***276*** | ***138*** | ***138*** | ***913*** | ***577*** | ***336*** |
| ***Weekday PM*** | | | | | | | | | | |
| Townhomes | 318 du | 155 | -64 | 91 | 0 | 0 | 0 | 91 | 69 | 22 |
| Hotel | 130 rooms | 78 | -14 | 64 | 0 | 0 | 0 | 64 | 38 | 26 |
| Multiplex | 55 ksf | 270 | -45 | 225 | 0 | 0 | 0 | 225 | 132 | 93 |
| Rec. Community Center | 80 ksf | 219 | -22 | 197 | 0 | 0 | 0 | 197 | 97 | 100 |
| General Office | 100 ksf | 190 | -32 | 158 | 0 | 0 | 0 | 158 | 20 | 138 |
| General Retail | 690 ksf | 2185 | -145 | 2040 | 694 | 347 | 347 | 1346 | 633 | 713 |
| Convenience Market | 5 ksf | 305 | 0 | 305 | 202 | 101 | 101 | 103 | 52 | 51 |
| ***TOTAL*** | | ***3402*** | ***-322*** | ***3080*** | ***896*** | ***448*** | ***448*** | ***2184*** | ***1041*** | ***1143*** |
| ***SAT Midday*** | | | | | | | | | | |
| Townhomes | 318 du | 135 | -48 | 87 | 0 | 0 | 0 | 87 | 46 | 41 |
| Hotel | 130 rooms | 94 | 0 | 94 | 0 | 0 | 0 | 94 | 53 | 41 |
| Multiplex | 55 ksf | 259 | 0 | 259 | 0 | 0 | 0 | 259 | 194 | 65 |
| Rec. Community Center | 80 ksf | 86 | -9 | 77 | 0 | 0 | 0 | 77 | 41 | 36 |
| General Office | 100 ksf | 43 | -13 | 30 | 0 | 0 | 0 | 30 | 14 | 16 |
| General Retail | 690 ksf | 3068 | -61 | 3007 | 782 | 391 | 391 | 2225 | 1179 | 1046 |
| Convenience Market | 5 ksf | 160 | 0 | 160 | 90 | 45 | 45 | 70 | 37 | 33 |
| ***TOTAL*** | | ***3845*** | ***-131*** | ***3714*** | ***872*** | ***436*** | ***436*** | ***2842*** | ***1564*** | ***1278*** |

X = Independent Variable (dwelling units, ksf, fields, rooms), Int. = Internal Capture Trips, Ext. = External Trips

As shown in **Table 7**, the proposed site will generate **913 new vehicle-trips** during the weekday A.M. peak hour, **2184 new vehicle-trips** during the weekday P.M. peak hour, and **2842 new vehicle-trips** during the Saturday Midday peak hour.

## TRIP DISTRIBUTION

*New Trips*

The distribution of trips generated by the proposed development was based on the following:

- An evaluation of the existing travel patterns in the study area was utilized for the residential portion of the proposed site.
- A population-based gravity model with a 10-mile radius was utilized for the non-residential portion of the proposed site. This gravity model utilized 2000 or 2010 U.S. Census data (whichever was most current and available) for adjacent municipalities. Travel routes for each municipality were developed using Google Earth.

The new trips for the proposed development were distributed to the local roadway network based on the resultant percentages shown in **Table 8**.

**TABLE 8**
**TRIP DISTRIBUTION PERCENTAGES – NEW TRIPS**

| Direction (To/From) | Assignment (To/From) | Distribution Percentage | |
|---|---|---|---|
| | | Residential | Non-Residential |
| East | via Lawrence Road | 11% | 13% |
| | via State Road[1] | 8% | 8% |
| | via Parkway Avenue | -- | 2% |
| | via Redhill Drive | -- | 2% |
| | via Marpit Drive | -- | 2% |
| | via Eagle Road[2] | 10% | 8% |
| West | via State Road | 11% | 12% |
| | via Old Marple Road | 4% | 5% |
| | via Williamsburg Drive | -- | 2% |
| | via Crum Creek Road | -- | 2% |
| North | via Sproul Road | 18% | 22% |
| | via Parkway Avenue | -- | 2% |
| South | via Sproul Road | 19% | 7% |
| | via Springfield Road | 11% | 8% |
| | via West Rolling Road[3] | 8% | 5% |

1 = This route's percentage, was partially diverted to utilize West Rolling Road as a cut-thru route to access the Study Area
2 = A large portion of this route's percentage is assumed to be cut-thru in nature for accessing the Study Area
3 = This route's percentage, was diverted from State Road. This route was assumed as a cut-thru route to access the Study Area

The gravity model information is included in **Appendix H**.

*Pass-By Trips*

Pass-by trips were established based on the existing traffic patterns in the vicinity of the site and the location and configuration of the proposed site driveways. The percentages used for the distribution of pass-by trips to the project site are shown below in **Table 9**.

**TABLE 9**
**TRIP DISTRIBUTION PERCENTAGES – PASS-BY TRIPS**

| Direction | Pass-by Trip Distribution Percentages | | |
|---|---|---|---|
| | Weekday A.M. | Weekday P.M. | Saturday Midday |
| Northbound via Sproul Road | 54% | 31% | 36% |
| Southbound via Sproul Road | 29% | 52% | 37% |
| Eastbound via Reed Road | 9% | 9% | 16% |
| Westbound via Reed Road | 8% | 8% | 11% |

*Base Re-Distribution*

TPD has accounted for the following re-distributions of base condition traffic due to the development of the proposed site:

- *Reed Road Realignment* – To account for the re-alignment of Reed Road to align with Crum Creek Road at a four-leg intersection.
- *Don Guanella Relocation* – To account for the relocation of the existing Don Guanella facility to a location adjacent to the Cardinal O'Hara High School, south on Sproul Road.
- *Cardinal O'Hara Shared Access* – To account for Cardinal O'Hara High School sharing the proposed southern access on Sproul Road.

The distributions of site-generated trips for the proposed developments are shown in **Figures 12-14**. The base-redistributions outlined above are shown in **Figures 15-17**. The trip distribution and assignment percentage information is included in the volume development spreadsheets included in **Appendix I**.

## PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES

The site-generated trips and the base-redistributions for the proposed development were added to the 2020 and 2025 base (no-build) condition traffic volumes to develop 2020 and 2025 projected (build) condition traffic volumes as shown in **Figures 18-23**.

## DRIVEWAY CLASSIFICATION

Driveways intersecting state roads are classified in the Pennsylvania Code, Title 67, Chapter 441. Low volume driveways are used by 25 to 750 vehicles per day. A medium volume driveway is used by 750 to 1500 vehicles per day. High volume driveways are used by more than 1500

vehicles per day. Based on the anticipated site trip generation and the assignment of site traffic, the classifications of the site driveways are listed in **Table 10.**

**TABLE 10**
**DRIVEWAY CLASSIFICATIONS**

| State Road | Driveway | Weekday Trips | Weekday Vehicles | Driveway Type |
|---|---|---|---|---|
| Sproul Road | Northern Driveway | 7120 | 3560 | High Volume |
| Sproul Road | Southern Driveway | 6324 | 3162 | High Volume |
| Sproul Road | RI/RO/LI Driveway | 2764 | 1382 | Medium Volume |
| Sproul Road | RI Driveway | 936 | 468 | Low Volume |
| Sproul Road | RI/RO Driveway (Convenience Market) | 2436 | 1218 | Medium Volume |
| Reed Road | Western Driveway | 142 | 71 | Low Volume |
| Reed Road | Proposed Driveway (Opposite Lawrence Business Park) | 5856 | 2928 | High Volume |
| Reed Road | Eastern Driveway | 1124 | 562 | Low Volume |
| Reed Road | Convenience Market Driveway | 2482 | 1241 | Medium Volume |
| Shopping Center Driveway | Convenience Market Driveway | 4262 | 2131 | High Volume |
| Reed Road | Proposed Driveway (Opposite Marpit Drive) | 3372 | 1686 | High Volume |

Note: A "trip" equals an entering or a exiting vehicle. Therefore, weekday vehicles = weekday trips/2.

## LEVELS OF SERVICE FOR AN INTERSECTION

For analysis of intersections, level of service is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS criteria is stated in terms of control delay per vehicle for a one-hour analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The criteria are shown in **Table 11**. Delay, as it relates to level of service, is a complex measure and is dependent upon a number of variables. For signalized intersections, these variables include the quality of vehicle progression, the cycle length, the green time ratio, and the volume/capacity ratio for the lane group in question. For unsignalized intersections, delay is related to the availability of gaps in the flow of traffic on the major street and the driver's discretion in selecting an appropriate gap for a particular movement from the minor street (straight across, left or right turn).

**TABLE 11**
**LEVEL OF SERVICE CRITERIA**
**UNSIGNALIZED AND SIGNALIZED INTERSECTIONS [1]**

| Level of Service | Control Delay Per Vehicle (Seconds) | |
|---|---|---|
| | Signalized | Unsignalized |
| A | ≤ 10 | ≤ 10 |
| B | > 10 and ≤ 20 | > 10 and ≤ 15 |
| C | > 20 and ≤ 35 | > 15 and ≤ 25 |
| D | > 35 and ≤ 55 | > 25 and ≤ 35 |
| E | > 55 and ≤ 80 | > 35 and ≤ 50 |
| F | > 80 or v/c > 1.0 | > 50 or v/c > 1.0 |

[1] Obtained from Exhibits 18-4 and 19-1 of the Transportation Research Board's *Highway Capacity Manual 2010*

## CAPACITY ANALYSIS METHODOLOGY

Capacity analyses were conducted for the weekday A.M., P.M. and Saturday midday peak hours at the study area intersections. These analyses were conducted according to the methodologies contained in the 2010 *Highway Capacity Manual* (HCM) using *Synchro 8* software, a Trafficware product.

The following conditions were analyzed, as applicable:

- 2014 Existing conditions;
- 2020 Base conditions (Build-out year without development);
- 2020 Projected conditions (Build-out year with development);
- 2025 Base conditions (Design year without development);
- 2025 Projected conditions (Design year with development).

It should be noted that based on methodologies contained in Chapter 10 of PennDOT's Publication 46, TPD adjusted the following 2010 HCM default values in the *Synchro 8* capacity analysis. These adjustments were made at the signalized intersections within the study area for all time periods based on the study area location being classified as Suburban:

- Base saturation flow rates for signalized intersections. The saturation flow rate was changed from the default value of 1900 to 1800 based on Exhibit 10-9.
- Start-up lost time and extension of effective green time for signalized intersections. The startup lost time was changed from the default value of 2.0 seconds to 2.5 seconds. Based on the total clearance time (yellow plus all-red time) being greater than 5 seconds, the extension of green time was changed from the default value of 2 seconds to 3.5 seconds. These adjusted values were based on Exhibit 10-10.
- Critical and Follow-Up Gap times were adjusted relative to the difference between default and PA Default values contained in Exhibits 10-11 and 10-12.

In addition, capacity analyses were conducted at the proposed site driveway intersections under the 2020 and 2020 projected conditions. The capacity analysis worksheets are included in **Appendix J**. The PennDOT-approved signal plans are included in **Appendix K**.

PennDOT's Transportation Impact Study Guidelines outlined in Strike-Off Letter 470-09-4, dated February 12, 2009 contain the following criteria regarding levels of service:

- Page 29 of the Guidelines state that if evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase in overall intersection delay is greater than 10-seconds. If the overall intersection delay increase is less than or equal to 10-seconds, mitigation of the intersection will not be required.
- Page 29 of the Guidelines state that for mitigation scenarios, applicants are expected to mitigate the overall intersection LOS to the original Without Development LOS; the 10-second delay variance is not applied to mitigation scenarios. Applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall LOS requirements are met.
- Page 31 of the Guidelines state that if signalization is the preferred alternative for mitigation, overall intersection LOS C in rural areas and LOS D in urban areas is acceptable.
- Page 31 of the Guidelines states new signalized or unsignalized intersection established to serve as access to the development shall be designed to operate at minimum LOS C for rural areas, and minimum LOS D for urban areas.

***TPD updated the signal timings under 2020 Base Conditions per the timings provided by the Township and PennDOT. TPD optimized all signal timings under 2025 Base Conditions. All projected conditions (Future Build) utilized the same timings as were utilized under the respective base conditions.***

## LEVELS OF SERVICE IN THE STUDY AREA

Levels of service (LOS) at the study area intersections for the weekday A.M., P.M., and Saturday midday peak hours are summarized in **Tables I-III** contained in the Executive Summary of this study. As shown in **Tables I-III**, under projected conditions with the development of the proposed site and with the site-related recommendations, all study area intersections will satisfy PennDOT ILOS Standards, with the following exceptions:

- *Sproul Road & Springfield Road* – ILOS increases by at least one letter grade and over 10-seconds during the weekday P.M. and Saturday Midday time periods. It should be noted that the Applicant is providing a separate left-turn lane on southbound Sproul Road and signal optimization at this intersection. It is TPD's opinion that additional improvements would require widening of adjacent bridges to the south, which is not feasible. ILOS at this intersection will operate at ILOS D or better, which is acceptable in urban settings. Furthermore, it should be noted that the Applicant has agreed to provide a Traffic Adaptive

Signal System along Sproul Road extending from State Road to Lawrence Road. Because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30%. Applying the low end of the improvement (10%) to this intersection, as well as the other intersections within the system, you can expect an improvement from what is shown in the analysis in the overall operation of this intersection. This improvement, based on the adaptive technology, would allow this intersection to satisfy PennDOT ILOS standards.

- *Springfield Road & State Road* – ILOS increases by over 10-seconds during the weekday P.M. and Saturday Midday peak hours. It should be noted that the Applicant has agreed to provide a Traffic Adaptive Signal System along Sproul Road extending from State Road to Lawrence Road and along Springfield Road between Sproul Road and State Road. As mentioned previously, because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30%, which should satisfy PennDOT ILOS standards.

## 95TH PERCENTILE QUEUE ANALYSIS

Queue analyses were conducted at the study area intersections using *Synchro 8* software. For this analysis, the 95$^{th}$ percentile queue is defined as the queue length that is exceeded in 5% of the signal cycles. As an example, for a signal with a 90-second cycle, this means that the 95$^{th}$ percentile queue length will be exceeded during 2 of the 40 signal cycles that occur during the peak hour. The queue analysis results are summarized in **Table IV** which is contained in the executive summary of this study. Queue analysis is included with the capacity analysis worksheets provided in **Appendix J**.

## AUXILIARY TURN LANE ANALYSIS

### *Methodology*

TPD evaluated auxiliary turn lane warrants at several study area intersections and at the proposed site driveways. The warrant analysis was conducted according to the methodologies contained in Chapter 11 of PennDOT's *Publication 46* and Strike-Off Letter 470-08-07.

### *Findings*

**Table 12** summarizes the results of the auxiliary turn lane analysis at the site access intersections.

**TABLE 12**
**AUXILIARY TURN LANE ANALYSIS SUMMARY**

| Intersection | Auxiliary Lane | Warrant Satisfied? | Required Lane Length | Proposed Lane Length |
|---|---|---|---|---|
| Sproul Road & Crum Creek Road/ Realigned Reed Road | NB Left-Turn Lane | Yes | 175’ | 175’ |
| | NB Right-Turn Lane | Yes | 450’ | 680’[1] |
| | SB Left-Turn Lane | Yes | 600’ | 350’[2,3] |
| | SB Right-Turn Lane | Yes | 225’ | 225’ |
| Sproul Road & RI/RO/LI Driveway | NB Right-Turn Lane | Yes | 225’ | 620’[1] |
| | SB Left-Turn Lane | Yes | 75’ | 75’ |
| Sproul Road & Northern Driveway | NB Right-Turn Lane | Yes | 525’ | 1325’[1] |
| | SB Left-Turn Lane | Yes | 425’ | 425’ |
| Sproul Road & Southern Driveway | NB Right-Turn Lane | Yes | 250’ | 650’[1] |
| | SB Left-Turn Lane | Yes | 250’ | 250’ |
| Sproul Road & HS Driveway | SB Left-Turn Lane | Yes | 75’ | 625’+[1] |
| Sproul Road & Springfield Road | SB Left-Turn Lane | Yes | 1050’ | 450’+[1] |
| Sproul Road & Old Marple Road | NB Left-Turn Lane | Yes | 225’ | 225’ |
| | SB Left-Turn Lane | No | -- | 75’ |
| | EB Right-Turn Lane | No | -- | 75’ |
| Reed Road & Convenience Market Driveway | WB Right-Turn | No | -- | -- |
| Reed Road & Shopping Center Driveway | EB Left-Turn Lane | Yes | 200’ | 200’ |
| | WB Right-Turn | No | -- | -- |
| | EB Right-Turn | No | -- | -- |
| Reed Road & Lawrence Park/ Proposed Driveway | WB Left-Turn Lane | Yes | 150’ | 150’ |
| | EB Right-Turn | Yes | 150’ | 150’ |

1 = Continuous Lane, Distance to Adjacent Intersection, 2 = Dual Lanes, 3 = Increased Due to 95th Percentile Queue

**TABLE 12 (CONTINUED)**
**AUXILIARY TURN LANE ANALYSIS SUMMARY**

| Intersection | Auxiliary Lane | Warrant Satisfied? | Required Lane Length | Proposed Lane Length |
|---|---|---|---|---|
| Reed Road & Eastern Driveway | WB Left-Turn Lane | No | -- | -- |
| | EB Right-Turn | No | -- | -- |
| Shopping Center Driveway & Convenience Market Driveway | NB Left-Turn Lane | No | -- | -- |
| | SB Right-Turn | No | -- | -- |
| Sproul Road & RI Driveway | NB Right-Turn | Yes | 225' | 665'[1] |
| Sproul Road & RI/RO Driveway (Convenience Market) | NB Right-Turn | Yes | 225' | 225' |
| Reed Road & Marpit Drive/ Proposed Driveway | NB Left-Turn | Yes | 100' | 100' |
| | SB Right-Turn | Yes | 75' | 75' |

1 = Continuous Lane, Distance to Adjacent Intersection, 2 = Dual Lanes, 3 = Increased Due to 95th Percentile Queue

The calculations for the auxiliary turn lane warrants are included in **Appendix L**.

## SIGNAL WARRANT ANALYSIS

A preliminary traffic signal warrant analysis was conducted at the following intersections in accordance with PennDOT Publication 212, *Official Traffic Control Devices*, Subchapter D, "Highway Traffic Signals," to determine if 4-Hour Warrants (Warrant 2) are satisfied:

- Sproul Road & Cemetery Driveway/Main Driveway;
- Sproul Road & Southern Cemetery Driveway/Southern Driveway;
- Reed Road & Lawrence Park Driveway/Proposed Driveway;
- Springfield Road & Old Marple Road;
- Parkway Avenue & SC Driveway/Westbourne Drive;
- Eagle Road & West Rolling Road.

In order to evaluate Warrant 2, Four-Hour Volume Warrant, TPD utilized the weekday manual traffic count data and a variation factor was calculated based on the existing hourly volume as compared to the existing peak hour volume. These factors were applied to the 2020 Projected Condition traffic volumes to generate six (6) hours of data. Warrants were evaluated for these

six (6) hours of data as included in **Appendix M**. A summary of these analyses is included below:

- Sproul Road & Cemetery Driveway/Main Driveway
    - Satisfies 6 of 6 hours, therefore the warrant is satisfied;
- Sproul Road & Southern Cemetery Driveway/Southern Driveway
    - Satisfies 6 of 6 hours, therefore the warrant is satisfied;
- Reed Road & Lawrence Park Driveway/Proposed Driveway
    - Satisfies 4 of 6 hours, therefore the warrant is satisfied;
- Springfield Road & Old Marple Road
    - Satisfies 6 of 6 hours, therefore the warrant is satisfied;
- Parkway Avenue & SC Driveway/Westbourne Drive
    - Satisfies 4 of 6 hours, therefore the warrant is satisfied.
- Eagle Road & West Rolling Road
    - Satisfies 6 of 6 hours, therefore the warrant is satisfied.

Conflict Factor Analyses for intersections in the study area are included in **Appendix N**.

## RECOMMENDATIONS

TPD has made recommendations in relation to the proposed Cardinal Crossings development in Marple Township, as outlined below in **Table V** in the Executive Summary. As part of PennDOT's HOP process, the applicant will coordinate and fund the implementation of the recommended roadway improvements. Preliminary construction costs have not been determined at this time.

## CONCLUSIONS

Based on the results of the transportation impact study, TPD offers the following conclusions:

- The project site is bounded by Sproul Road (S.R. 0320) to the west, Route 476 (S.R. 0476) to the south and Reed Road to the north and to the east. The proposed site will consist of:
    - 318 Townhomes (Includes Carriage Homes)
    - A 130-room Hotel
    - A 55,000 s.f. Multiplex
    - A 80,000 s.f. Recreational Community Center
    - 100,000 s.f. of General Office space
    - 690,000 s.f. of General Retail space
    - Convenience Market with sixteen (16) fueling positions (5,000+ ksf).

    In addition, it is TPD's understanding that as part of this development, the existing Don Guanella facility will be relocated from its current location on Sproul Road, to a location adjacent to the existing Cardinal O'Hara High School, along Sproul Road (S.R. 0320) to the south.

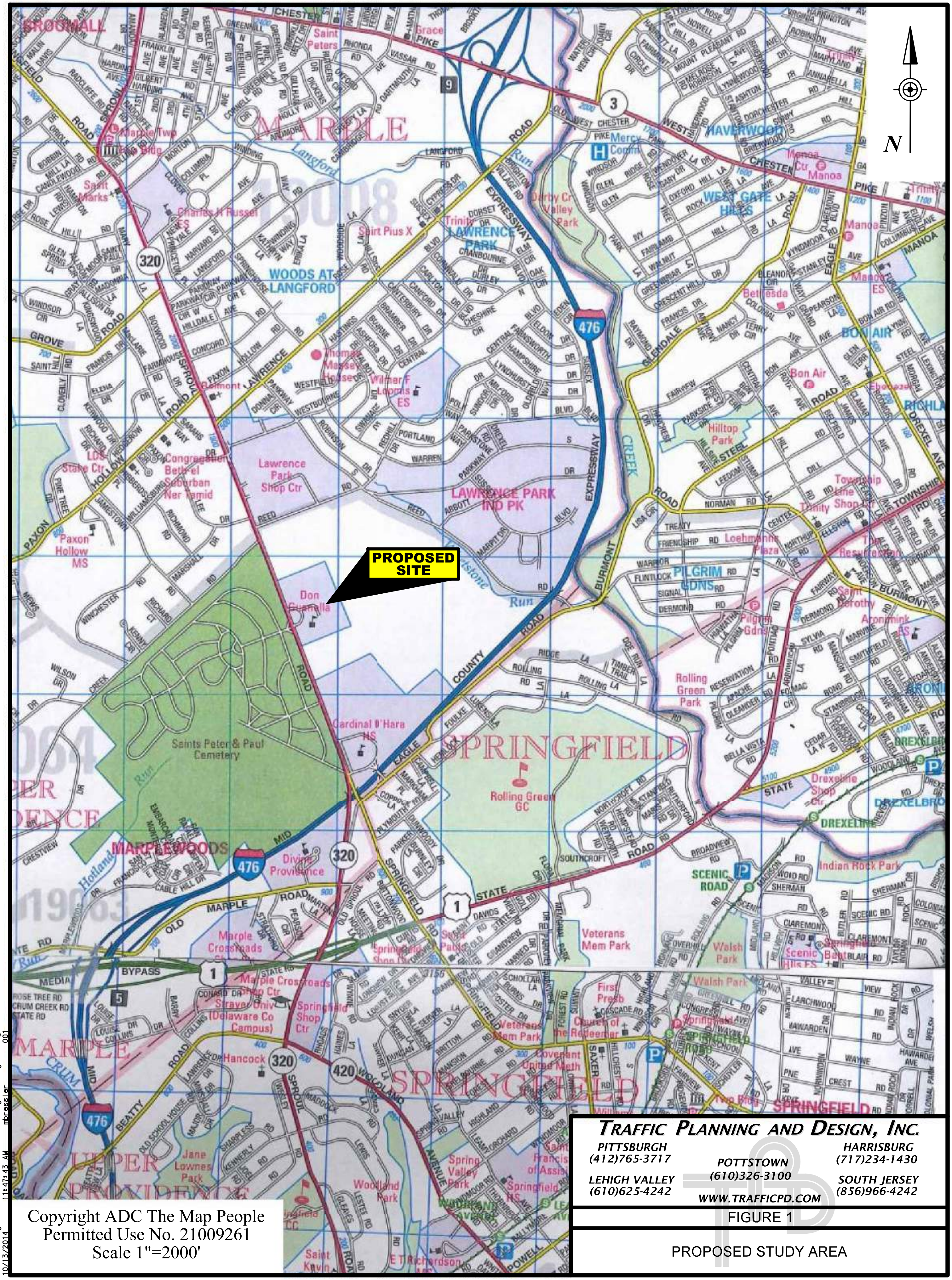
- The site will be served by the following proposed site driveways:

- Four (4) Driveways to Sproul Road (S.R. 0320)
- Five (5) Driveways to Reed Road (Including one (1) opposite Marpit Drive)
- One (1) Driveway to the extended Shopping Center Driveway off of Reed Road.

With the development of the site, the proposed site will share its southern access on Sproul Road (S.R. 0320) with the existing Cardinal O'Hara High School to the south.

- All proposed driveway location sight distances will exceed PennDOT's Desirable and Safe Stopping Sight Distance (SSSD) criteria.
- Upon full build-out, the proposed site will generate **913 new vehicle-trips** during the weekday A.M. peak hour, **2184 new vehicle-trips** during the weekday P.M. peak hour, and **2842 new vehicle-trips** during the Saturday Midday peak hour.
- Under projected conditions with the development of the proposed site and with the site-related recommendations, all study area intersections will satisfy PennDOT ILOS Standards, with the following exceptions:
  - *Sproul Road & Springfield Road* – ILOS increases by over 10-seconds during the weekday P.M. peak period. It should be noted that the increase analyzed is 0.9 seconds beyond the 10-second threshold (10.9 second increase). It should also be noted that the Applicant is providing a separate left-turn lane on southbound Sproul Road and signal optimization at this intersection. It is TPD's opinion that additional improvements would require widening of adjacent bridges to the south, which is not feasible. ILOS at this intersection will operate at ILOS D or better, which is acceptable in urban settings. Furthermore, it should be noted that the Applicant has agreed to provide a Traffic Adaptive Signal System along Sproul Road extending from State Road to Lawrence Road. Because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30%. Applying the low end of the improvement (10%) to this intersection, as well as the other intersections within the system, you can expect an improvement from what is shown in the analysis in the overall operation of this intersection. This improvement, based on the adaptive technology, would allow this intersection to satisfy PennDOT ILOS Standards.

  - *Springfield Road & State Road* – ILOS increases by over 10-seconds during the weekday P.M. and Saturday Midday peak hours. It should be noted that the Applicant has agreed to provide a Traffic Adaptive Signal System along Sproul Road extending from State Road to Lawrence Road and along Springfield Road between Sproul Road and State Road. As mentioned previously, because the timing scheme for these Systems change on an as-needed basis, it is extremely difficult to model their operation. However, based on recent research completed with respect to these Traffic Signal Systems, it has been shown that the operation of traffic signals within the Adaptive System improves by 10-30%, which should satisfy PennDOT ILOS standards.




Copyright ADC The Map People
Permitted Use No. 21009261
Scale 1"=2000'

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717 | POTTSTOWN (610)326-3100 | HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242 | WWW.TRAFFICPD.COM | SOUTH JERSEY (856)966-4242

FIGURE 1

PROPOSED STUDY AREA

R:\Planning\0_Job Folders\GMP\00030\Figures\Figures.dgn 001
10/13/2014 11:47:43 AM mgressler

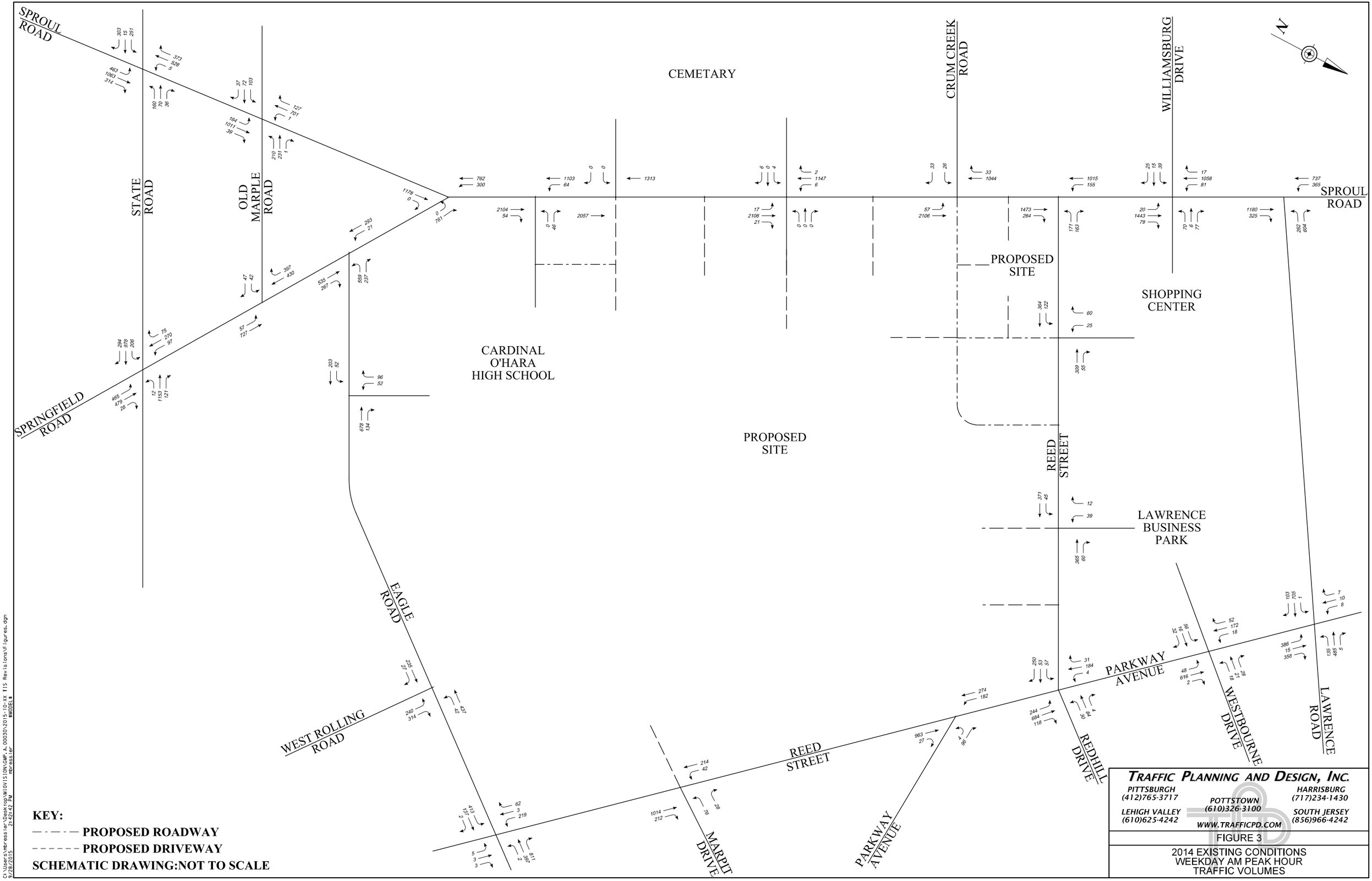
**TRAFFIC PLANNING AND DESIGN, INC.**

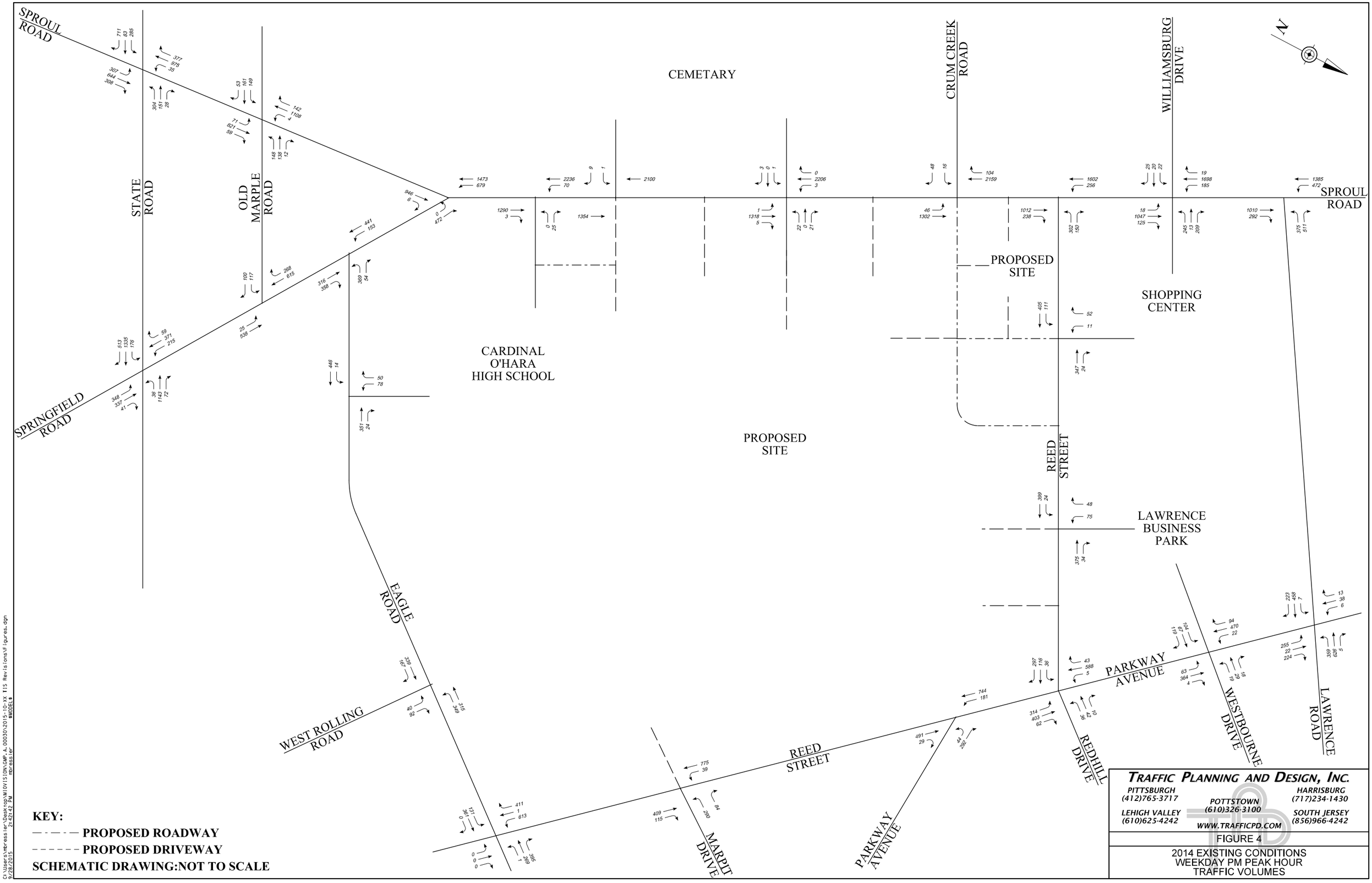
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

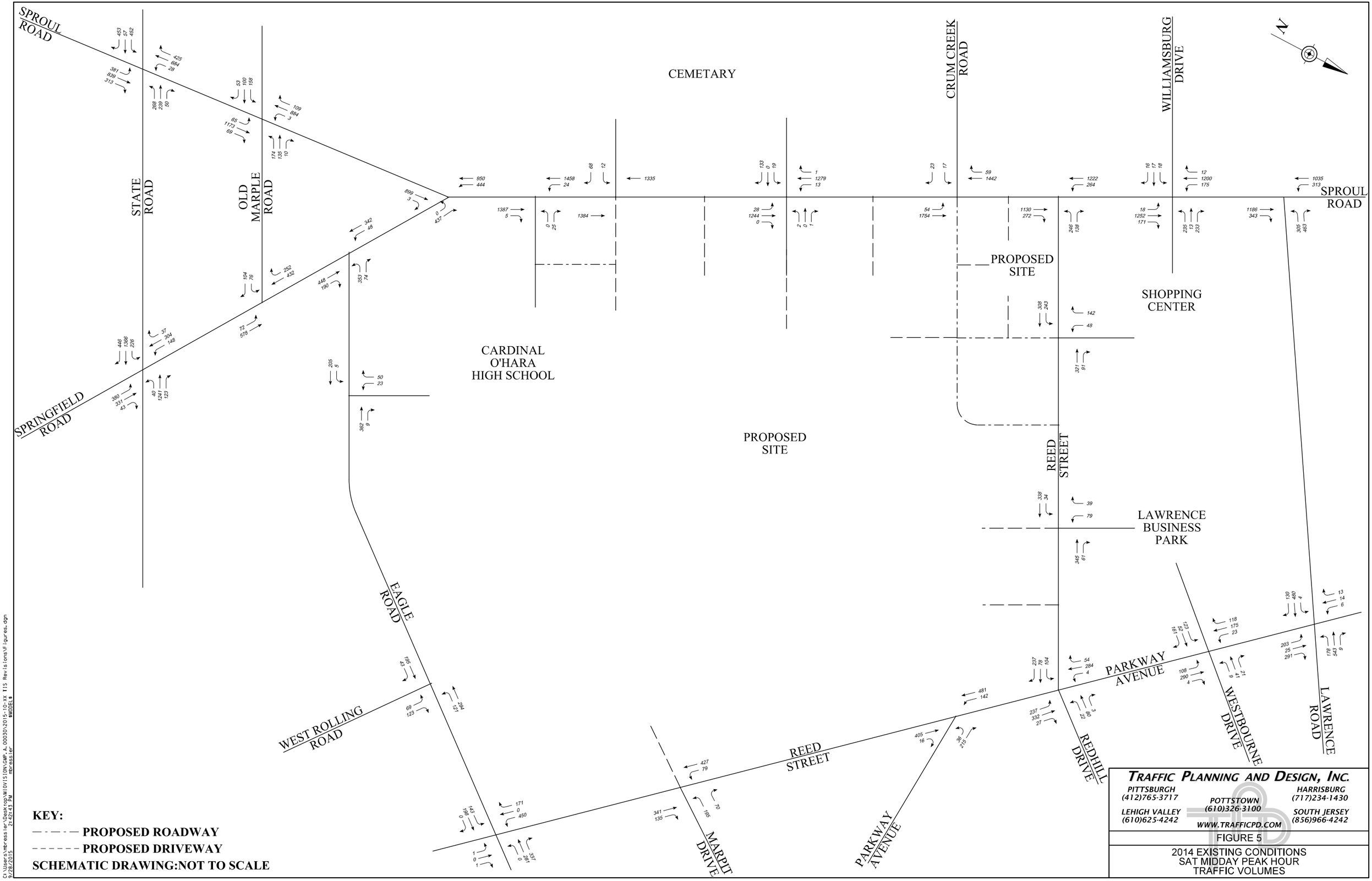
FIGURE 2

PROPOSED SITE

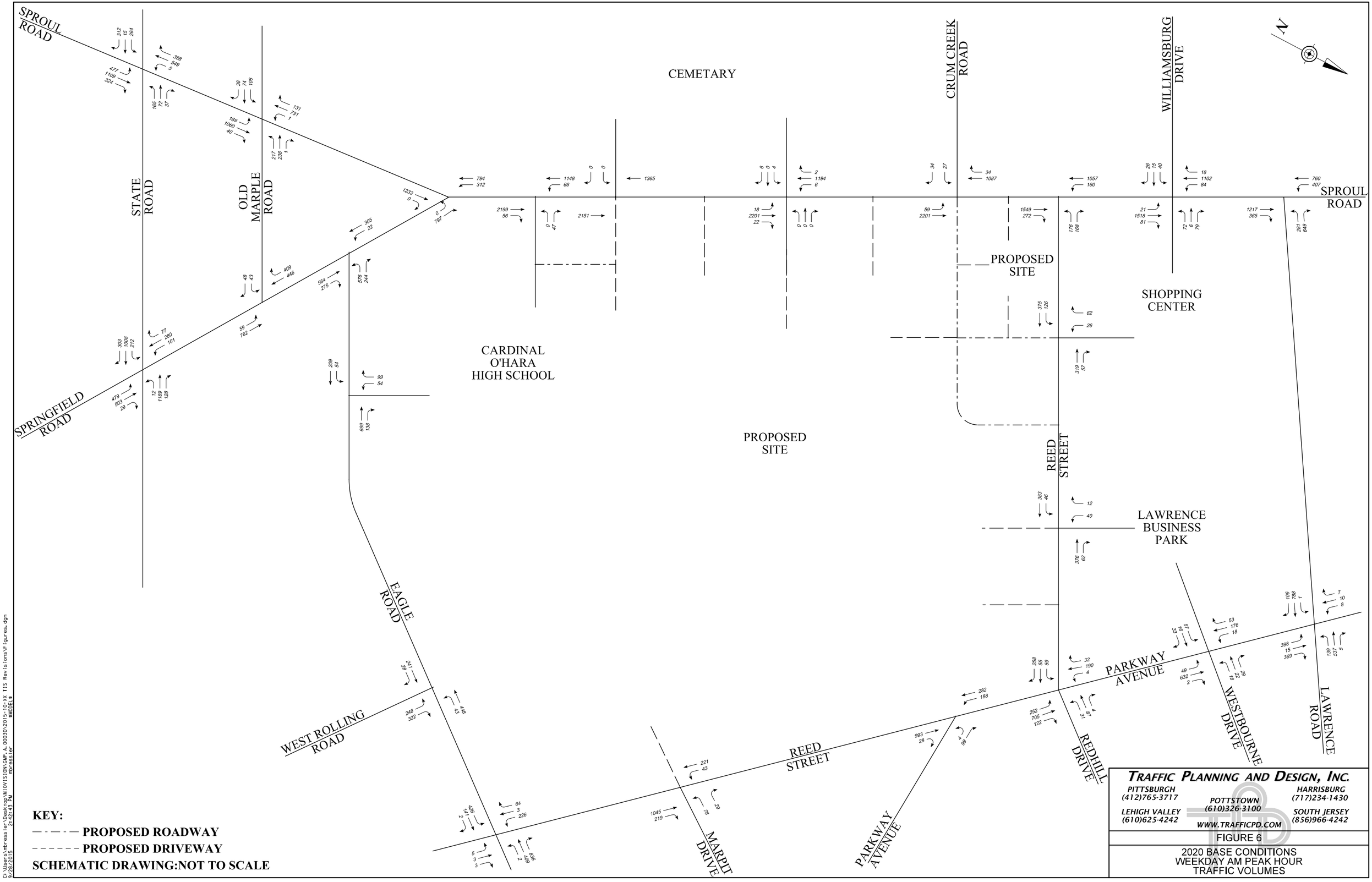
R:\Planning\0_Job Folders\GMP\00030\Figures\Figures.dgn
10/13/2014 11:47:46 AM mbressler 002

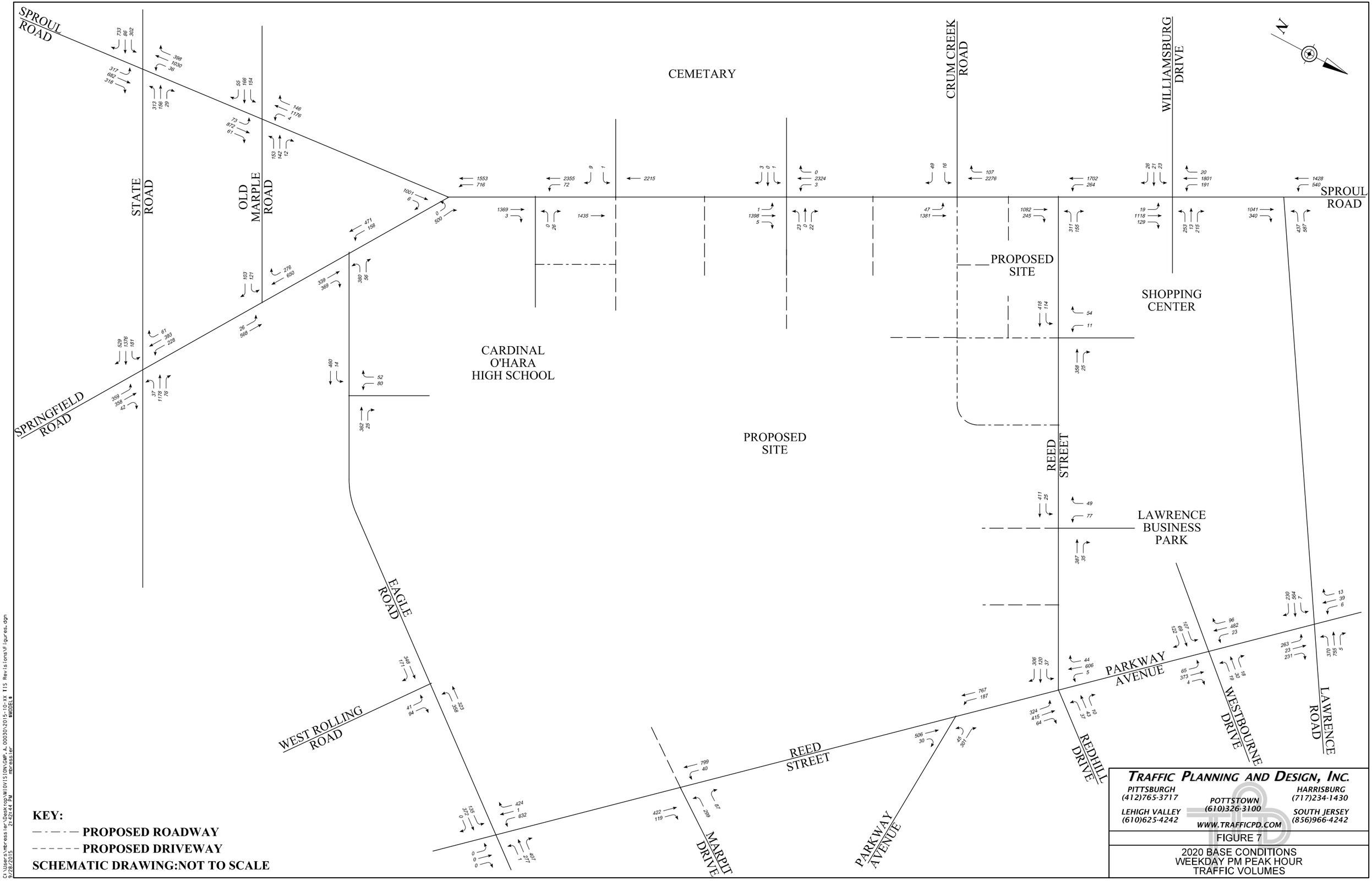

SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
WESTBOURNE DRIVE
LAWRENCE ROAD
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 3
2014 EXISTING CONDITIONS
WEEKDAY AM PEAK HOUR
TRAFFIC VOLUMES


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
SPRINGFIELD ROAD
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
WESTBOURNE DRIVE
LAWRENCE ROAD
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 4
2014 EXISTING CONDITIONS
WEEKDAY PM PEAK HOUR
TRAFFIC VOLUMES

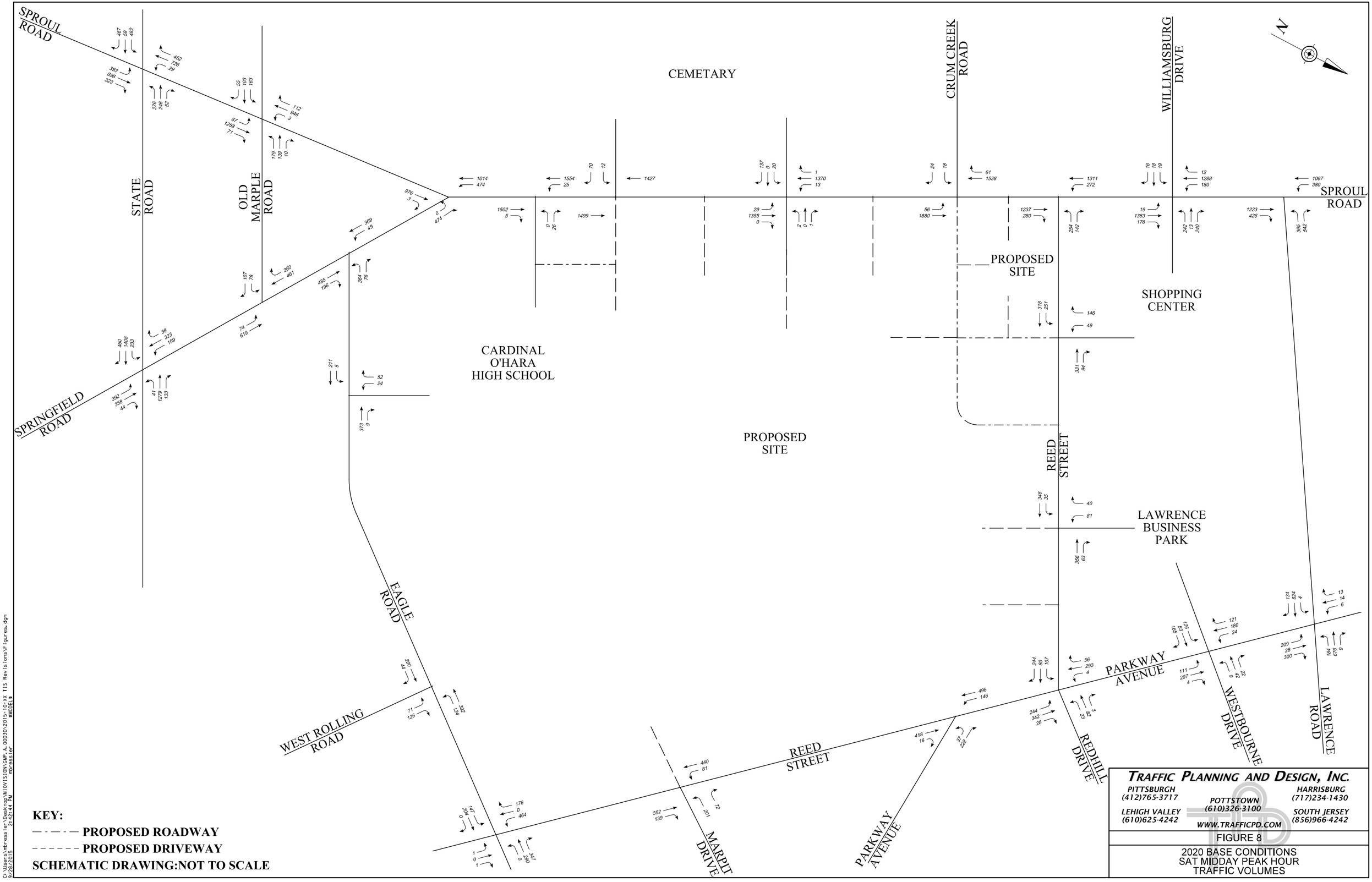


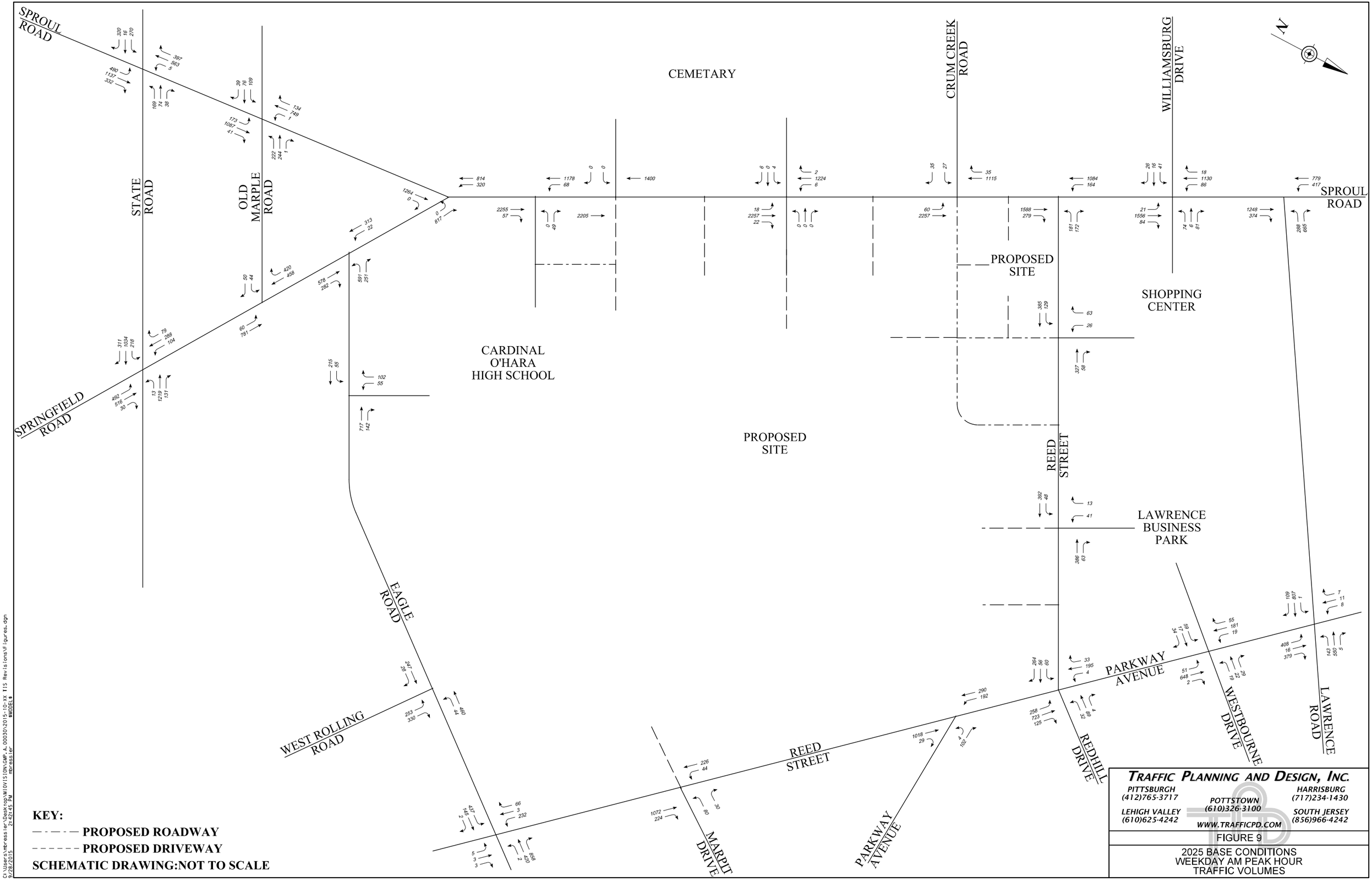

C:\Users\mpressler\Desktop\MIVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:43 PM mpressler $MODEL$


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
N
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
SPRINGFIELD ROAD
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 6
2020 BASE CONDITIONS
WEEKDAY AM PEAK HOUR
TRAFFIC VOLUMES

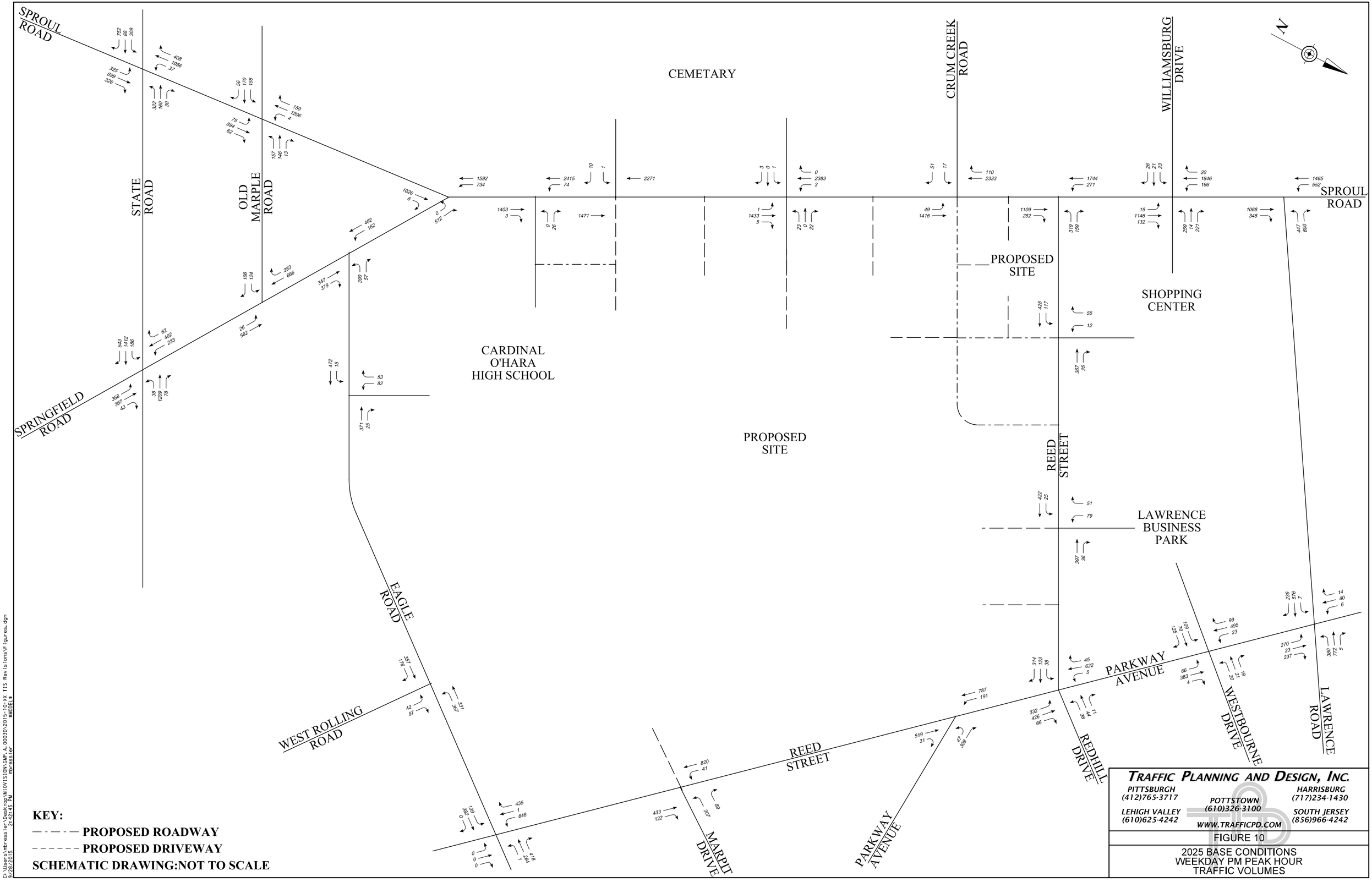



C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:44 PM mpressler $MODEL$


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
N
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
SPRINGFIELD ROAD
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 8
2020 BASE CONDITIONS
SAT MIDDAY PEAK HOUR
TRAFFIC VOLUMES




C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:45 PM mpressler
$MODEL$




**KEY:**

**PROPOSED ROADWAY**

**PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

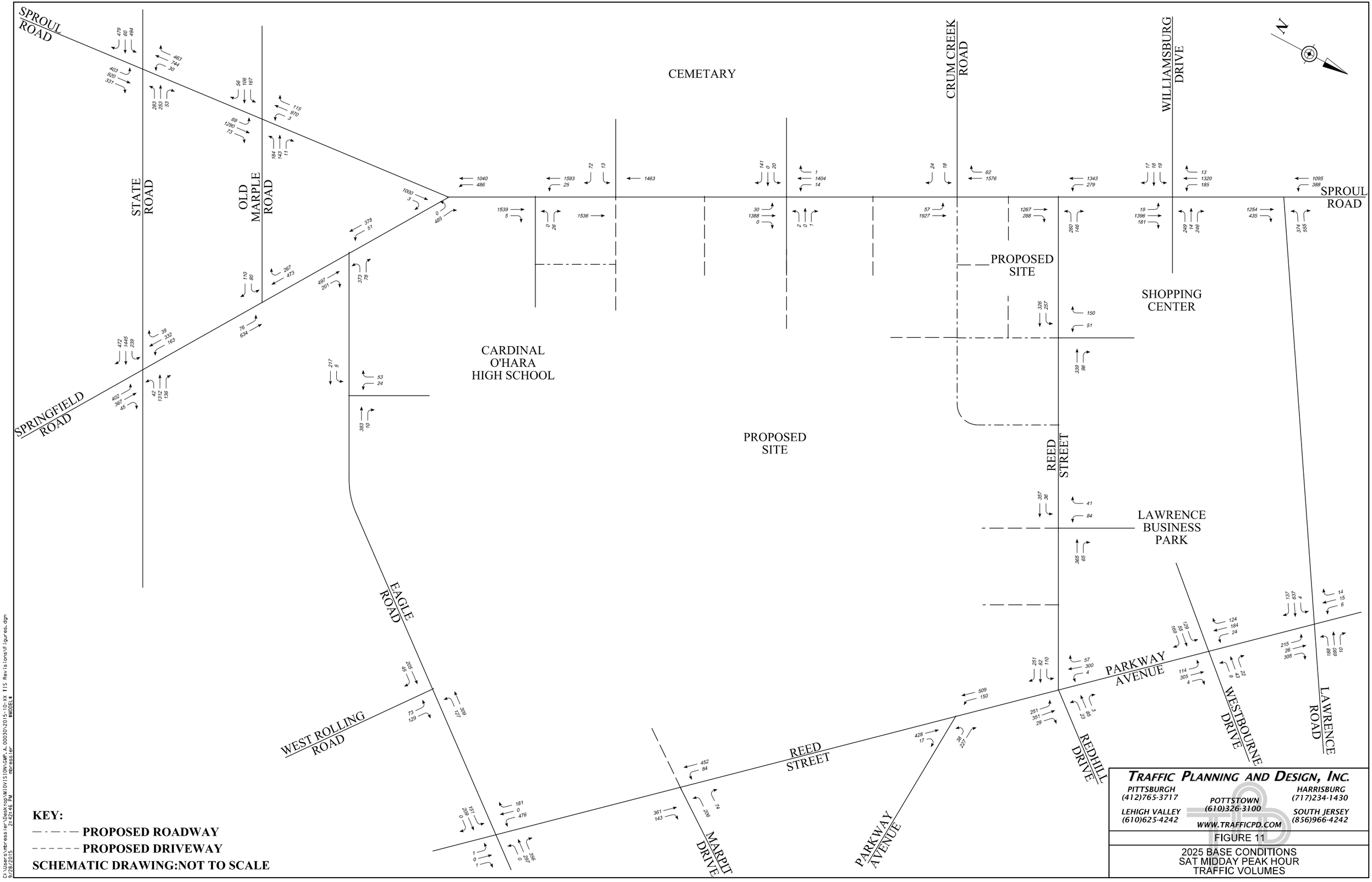
C:\Users\mpressler\Desktop\MIDVISION\GMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:45 PM mpressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

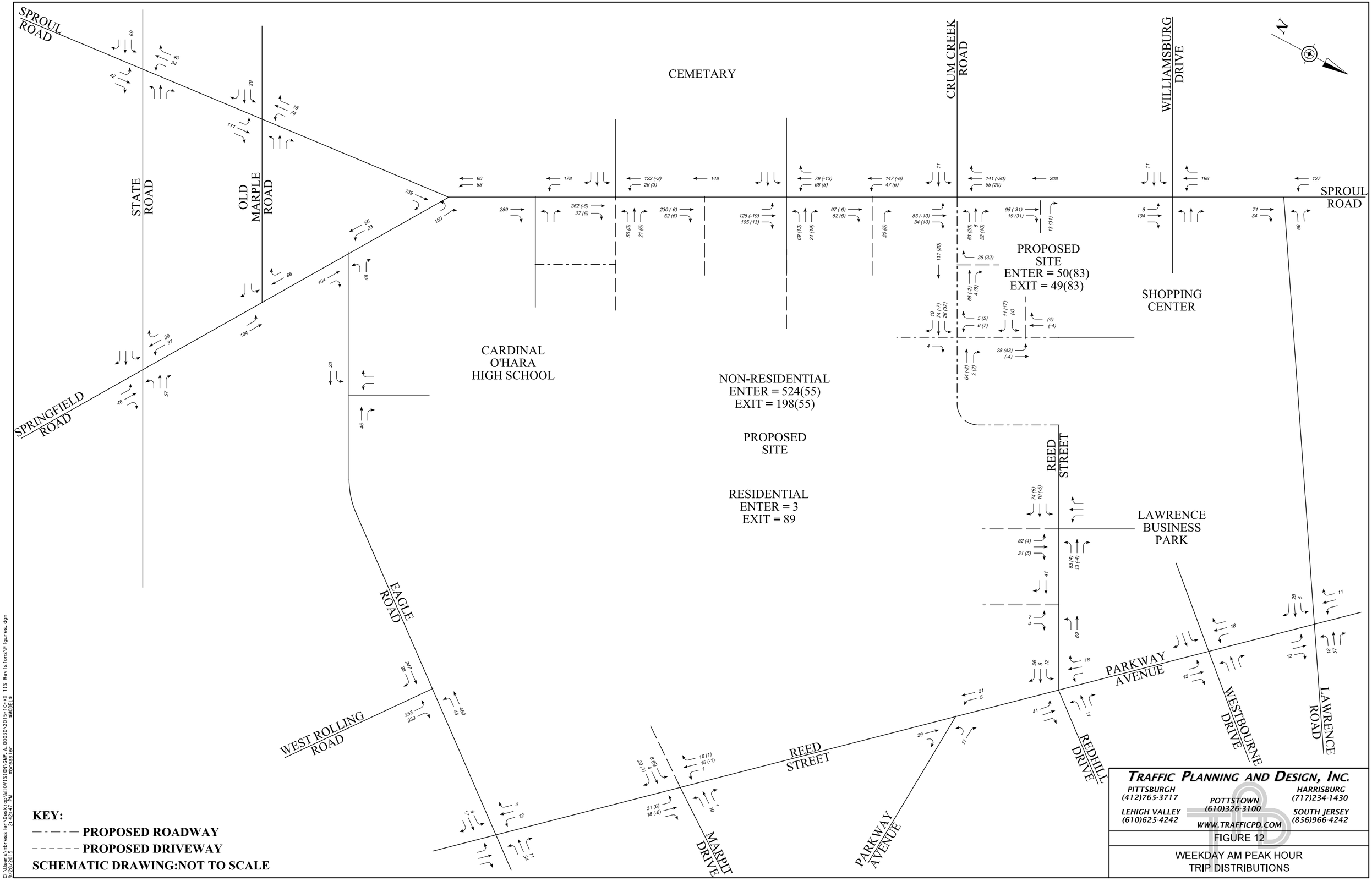
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

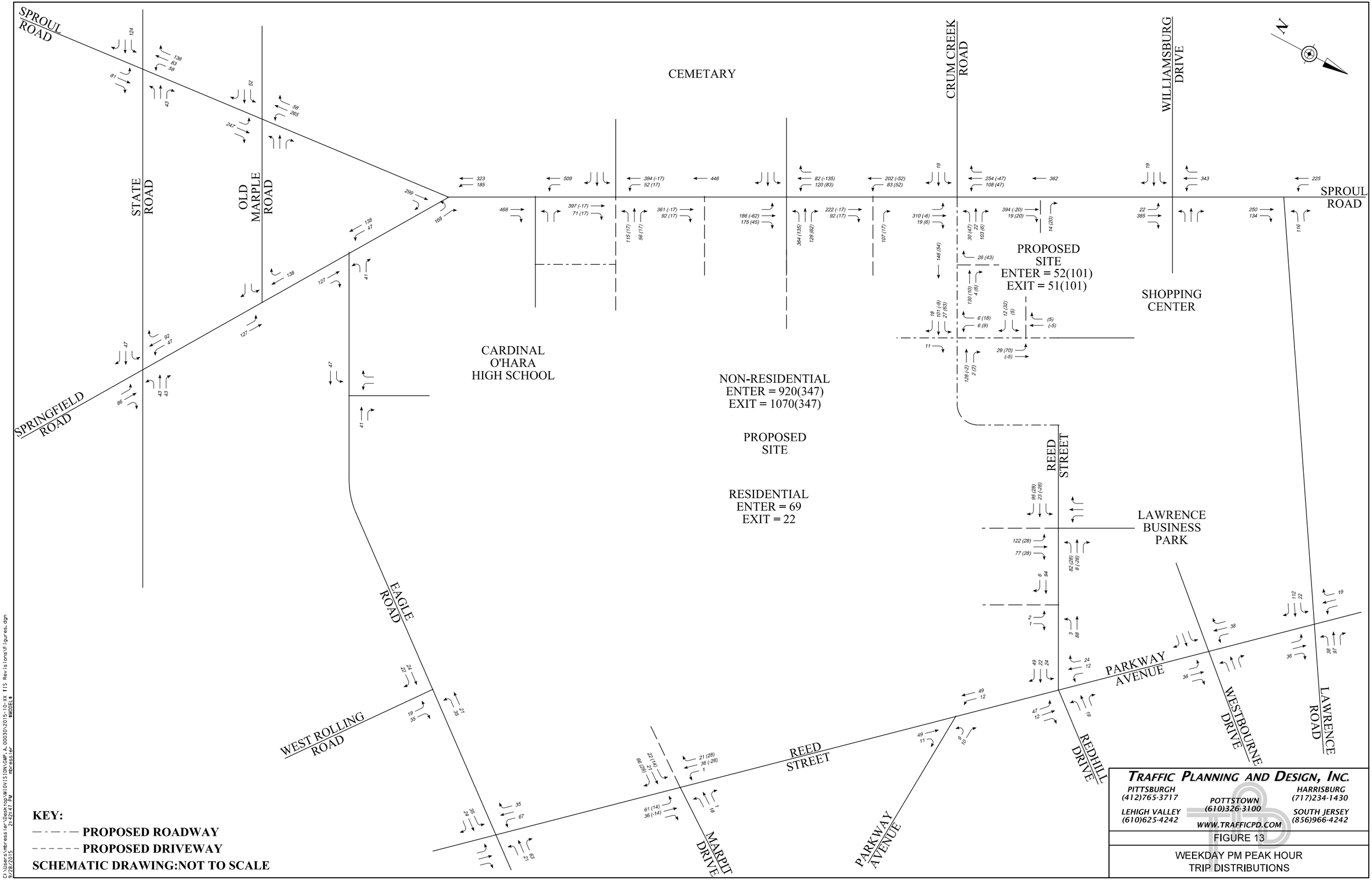
FIGURE 10

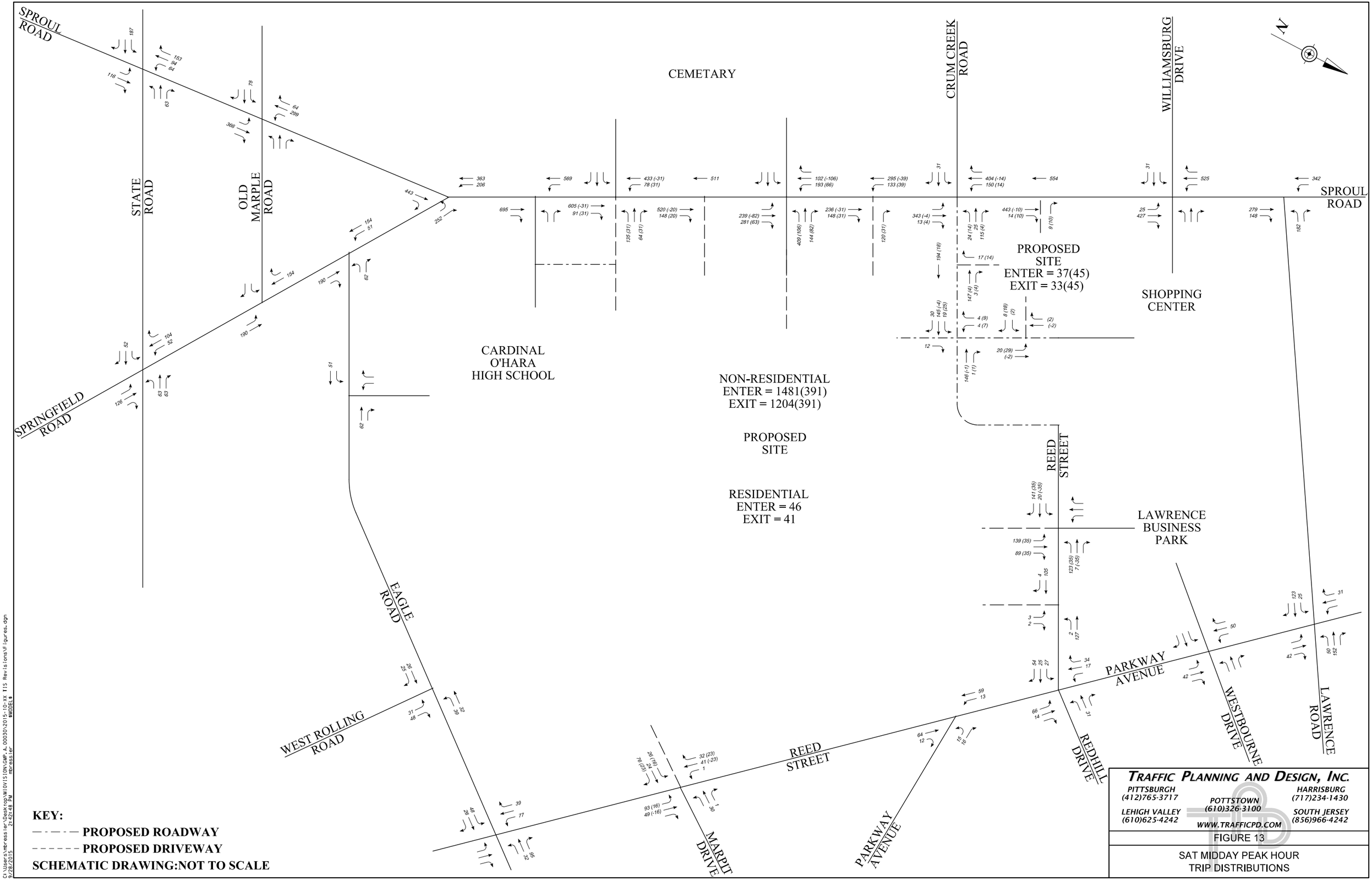
2025 BASE CONDITIONS
WEEKDAY PM PEAK HOUR
TRAFFIC VOLUMES




C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:46 PM mpressler $MODEL$


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
CARDINAL O'HARA HIGH SCHOOL
NON-RESIDENTIAL
ENTER = 524(55)
EXIT = 198(55)
PROPOSED SITE
RESIDENTIAL
ENTER = 3
EXIT = 89
PROPOSED SITE
ENTER = 50(83)
EXIT = 49(83)
SHOPPING CENTER
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
WEST ROLLING ROAD
REED STREET
MARPIT DRIVE
PARKWAY AVENUE
REDHILL DRIVE
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 12
WEEKDAY AM PEAK HOUR
TRIP DISTRIBUTIONS


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
ENTER = 52(101)
EXIT = 51(101)
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
NON-RESIDENTIAL
ENTER = 920(347)
EXIT = 1070(347)
PROPOSED SITE
RESIDENTIAL
ENTER = 69
EXIT = 22
SPRINGFIELD ROAD
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
WESTBOURNE DRIVE
LAWRENCE ROAD
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 13
WEEKDAY PM PEAK HOUR
TRIP DISTRIBUTIONS




**KEY:**

**PROPOSED ROADWAY**

**PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

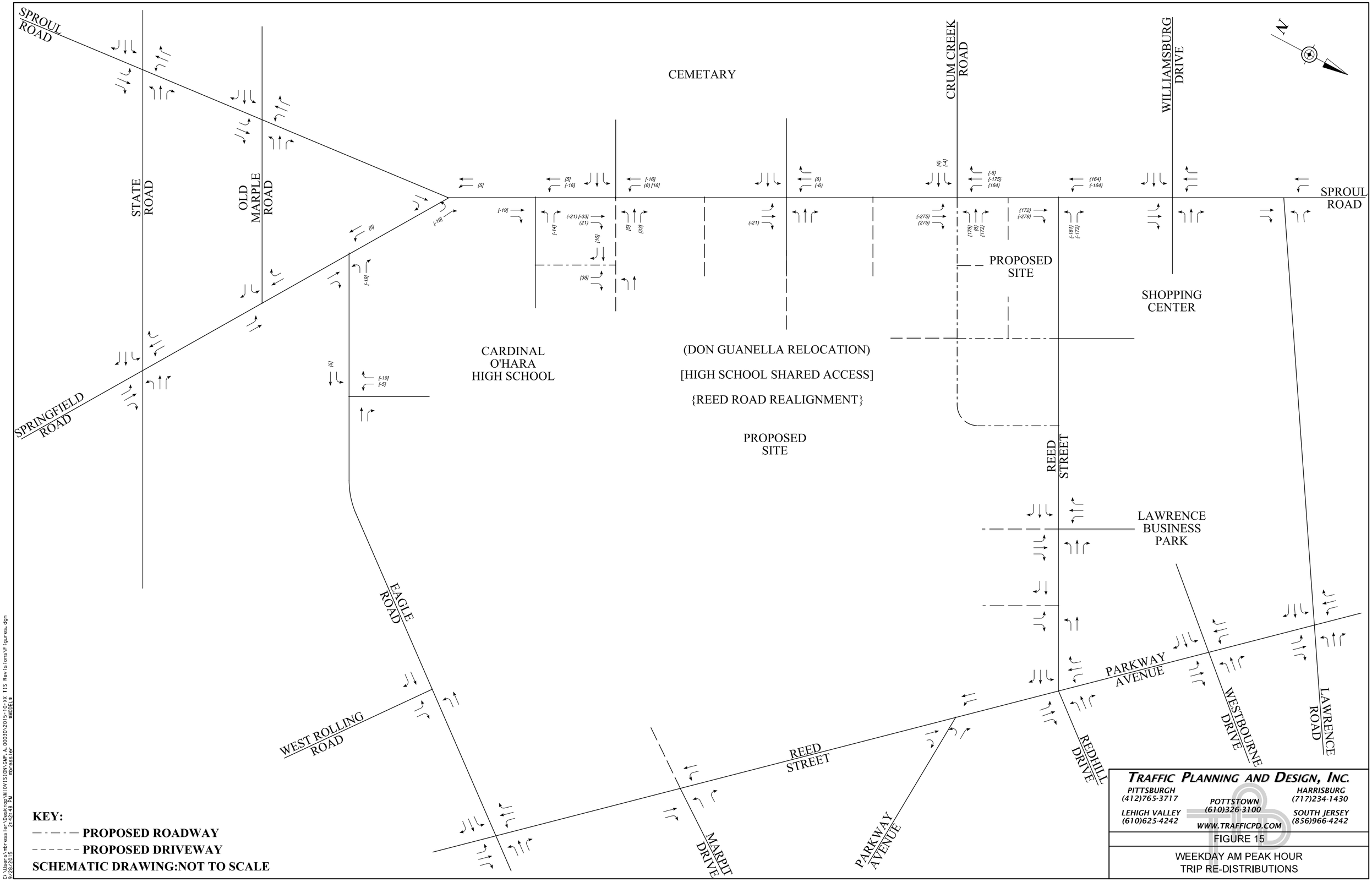
C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:48 PM mpressler $MODEL$

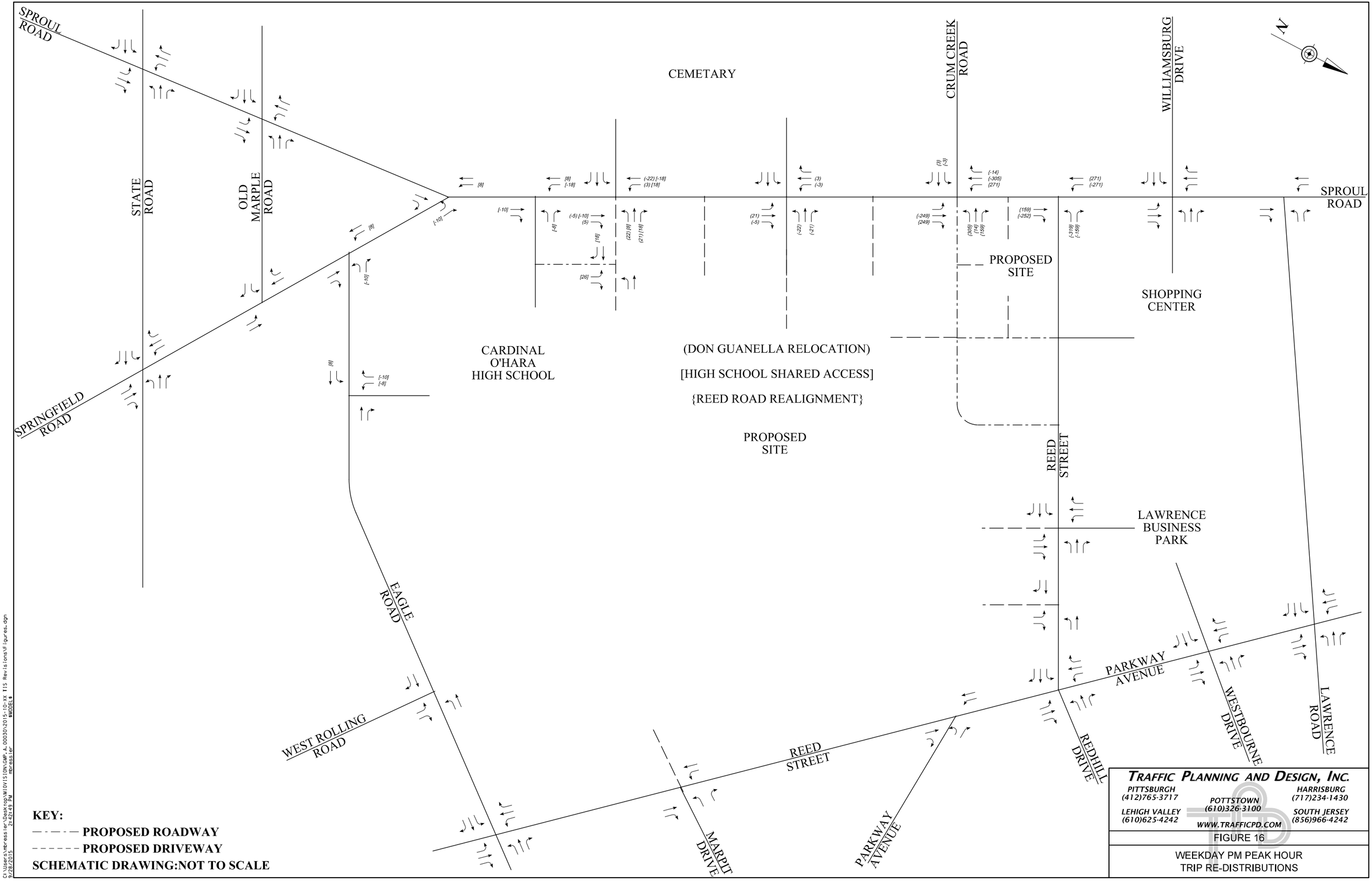
**TRAFFIC PLANNING AND DESIGN, INC.**

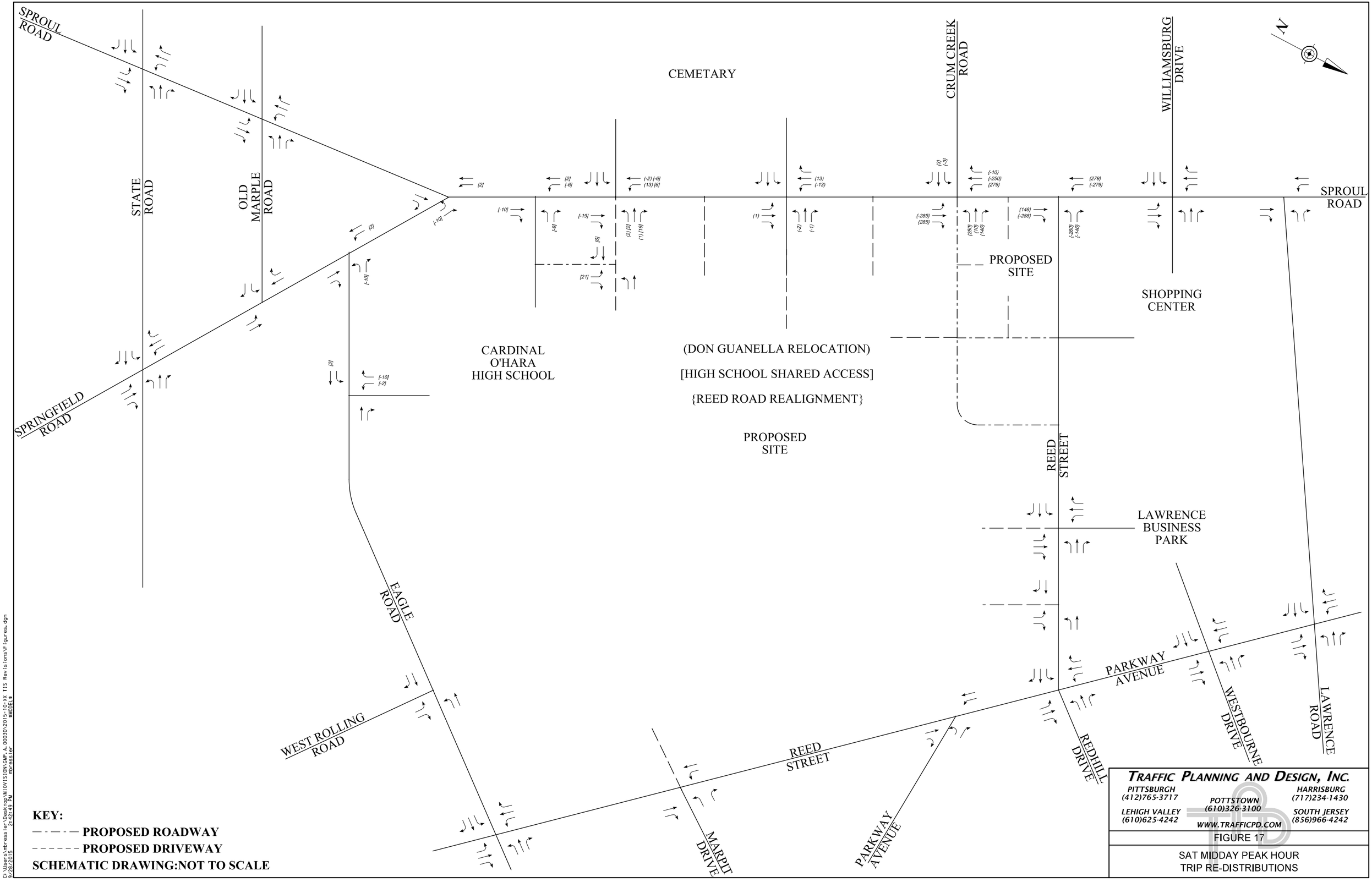
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE 13

SAT MIDDAY PEAK HOUR
TRIP DISTRIBUTIONS


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
(DON GUANELLA RELOCATION)
[HIGH SCHOOL SHARED ACCESS]
{REED ROAD REALIGNMENT}
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
WESTBOURNE DRIVE
LAWRENCE ROAD
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 15
WEEKDAY AM PEAK HOUR
TRIP RE-DISTRIBUTIONS


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
(DON GUANELLA RELOCATION)
[HIGH SCHOOL SHARED ACCESS]
{REED ROAD REALIGNMENT}
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
WESTBOURNE DRIVE
LAWRENCE ROAD
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 16
WEEKDAY PM PEAK HOUR
TRIP RE-DISTRIBUTIONS


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
(DON GUANELLA RELOCATION)
[HIGH SCHOOL SHARED ACCESS]
{REED ROAD REALIGNMENT}
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
WEST ROLLING ROAD
REED STREET
REDHILL DRIVE
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 17
SAT MIDDAY PEAK HOUR
TRIP RE-DISTRIBUTIONS

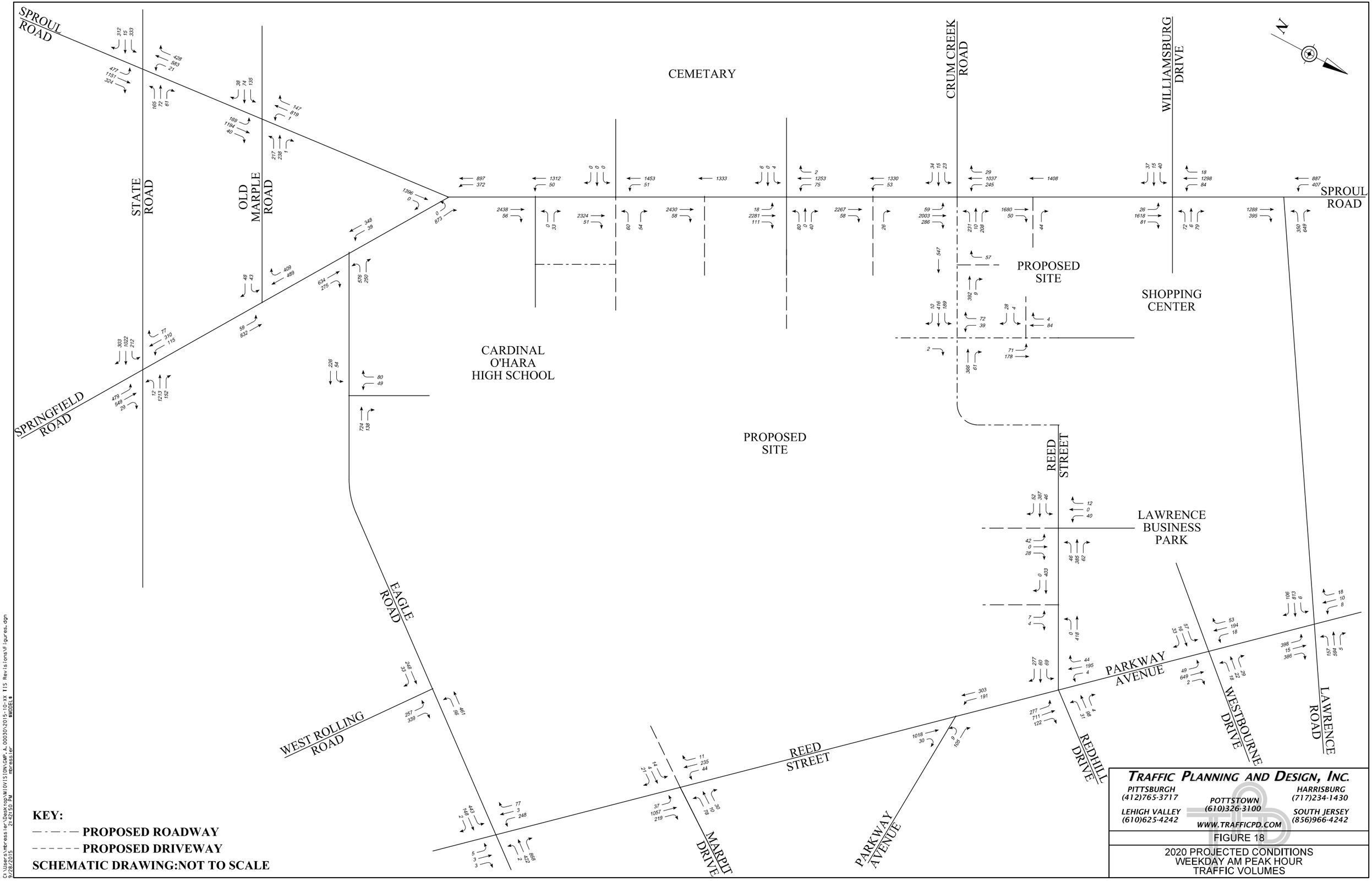
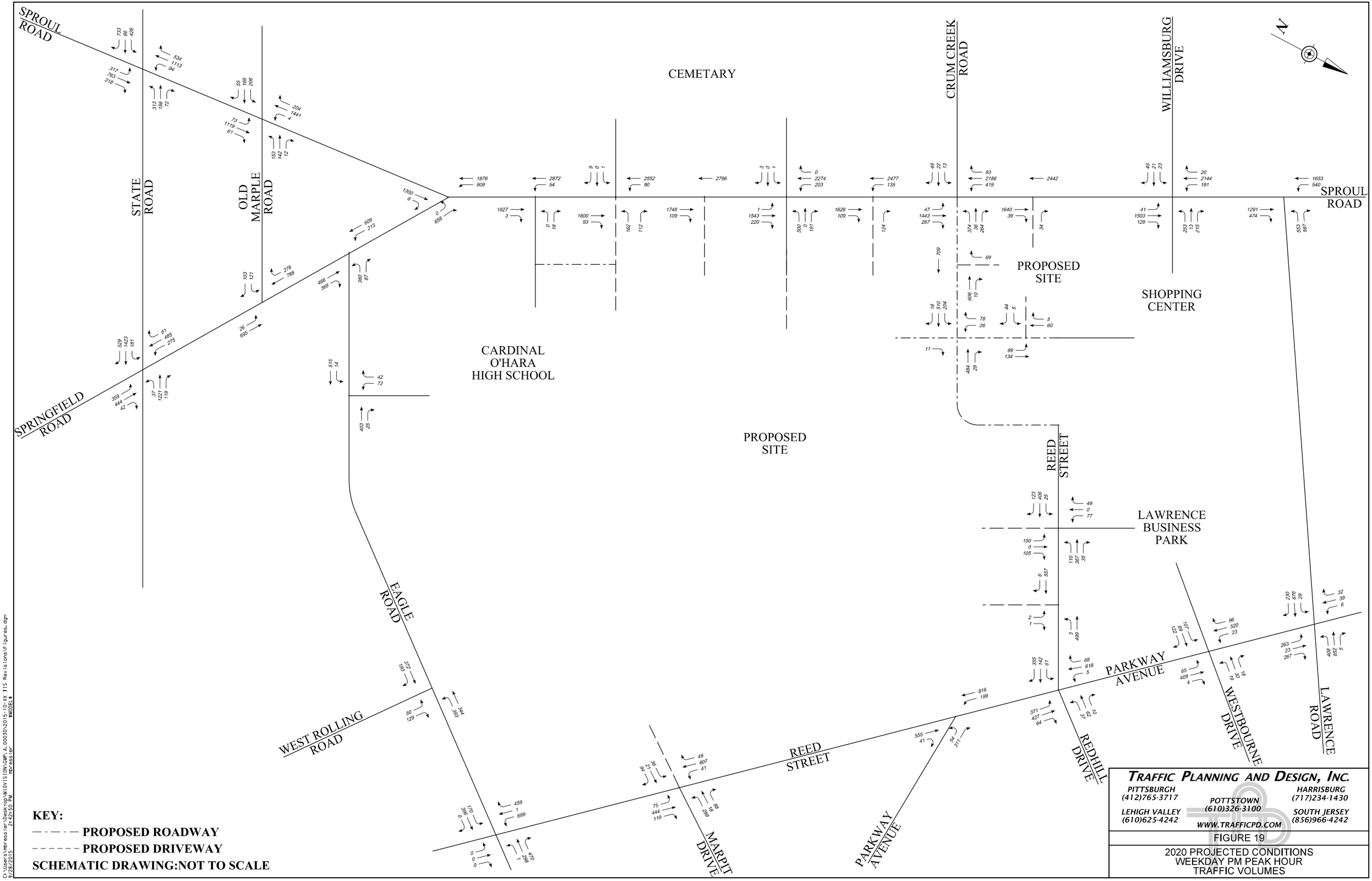
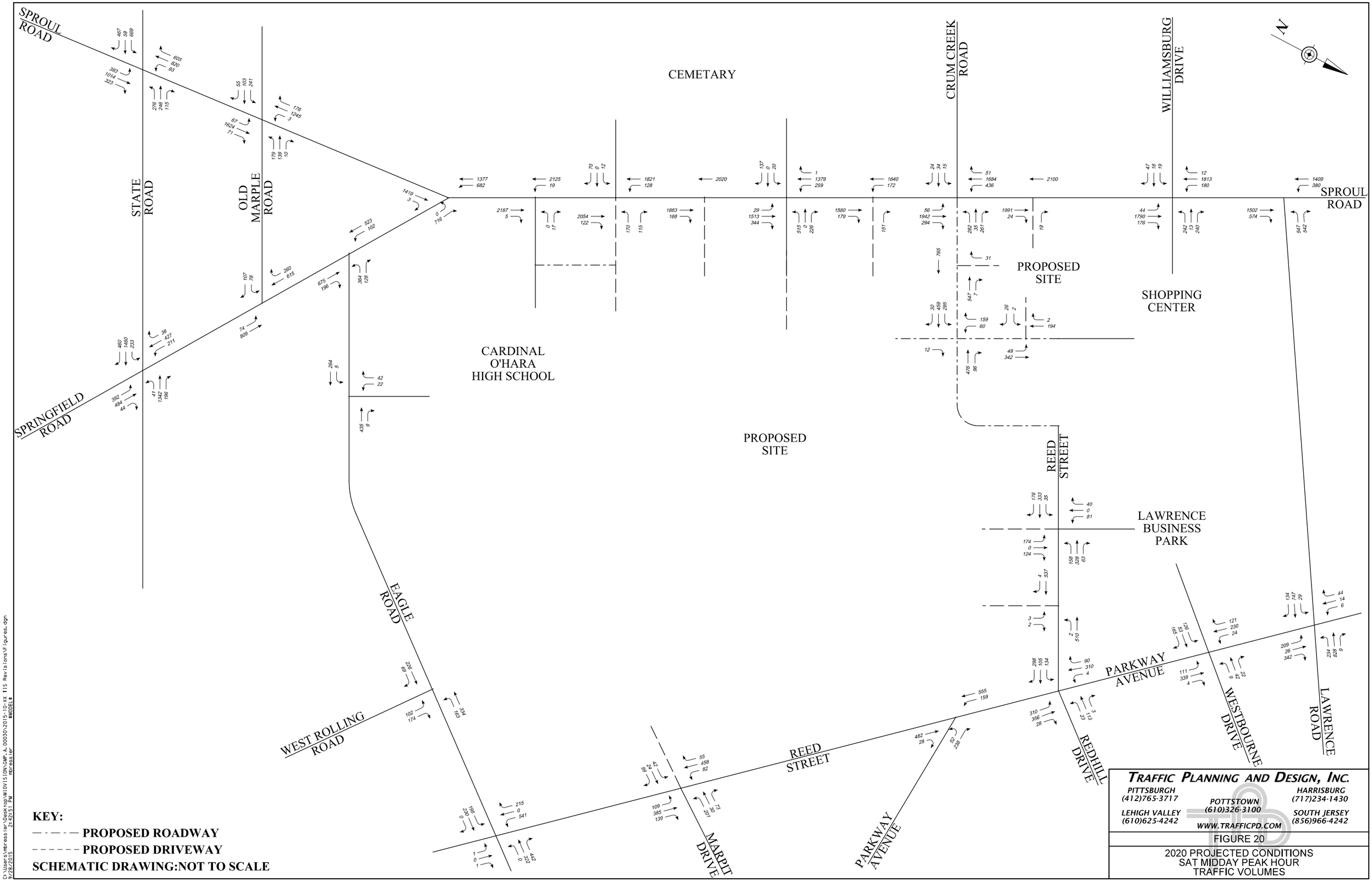



FIGURE 18

2020 PROJECTED CONDITIONS
WEEKDAY AM PEAK HOUR
TRAFFIC VOLUMES

C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:50 PM mpressler $MODEL$


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
N
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
SPRINGFIELD ROAD
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WEST ROLLING ROAD
REED STREET
WESTBOURNE DRIVE
LAWRENCE ROAD
REDHILL DRIVE
MARPIT DRIVE
PARKWAY AVENUE
KEY:
PROPOSED ROADWAY
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE 19
2020 PROJECTED CONDITIONS
WEEKDAY PM PEAK HOUR
TRAFFIC VOLUMES




**KEY:**

**PROPOSED ROADWAY**

**PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

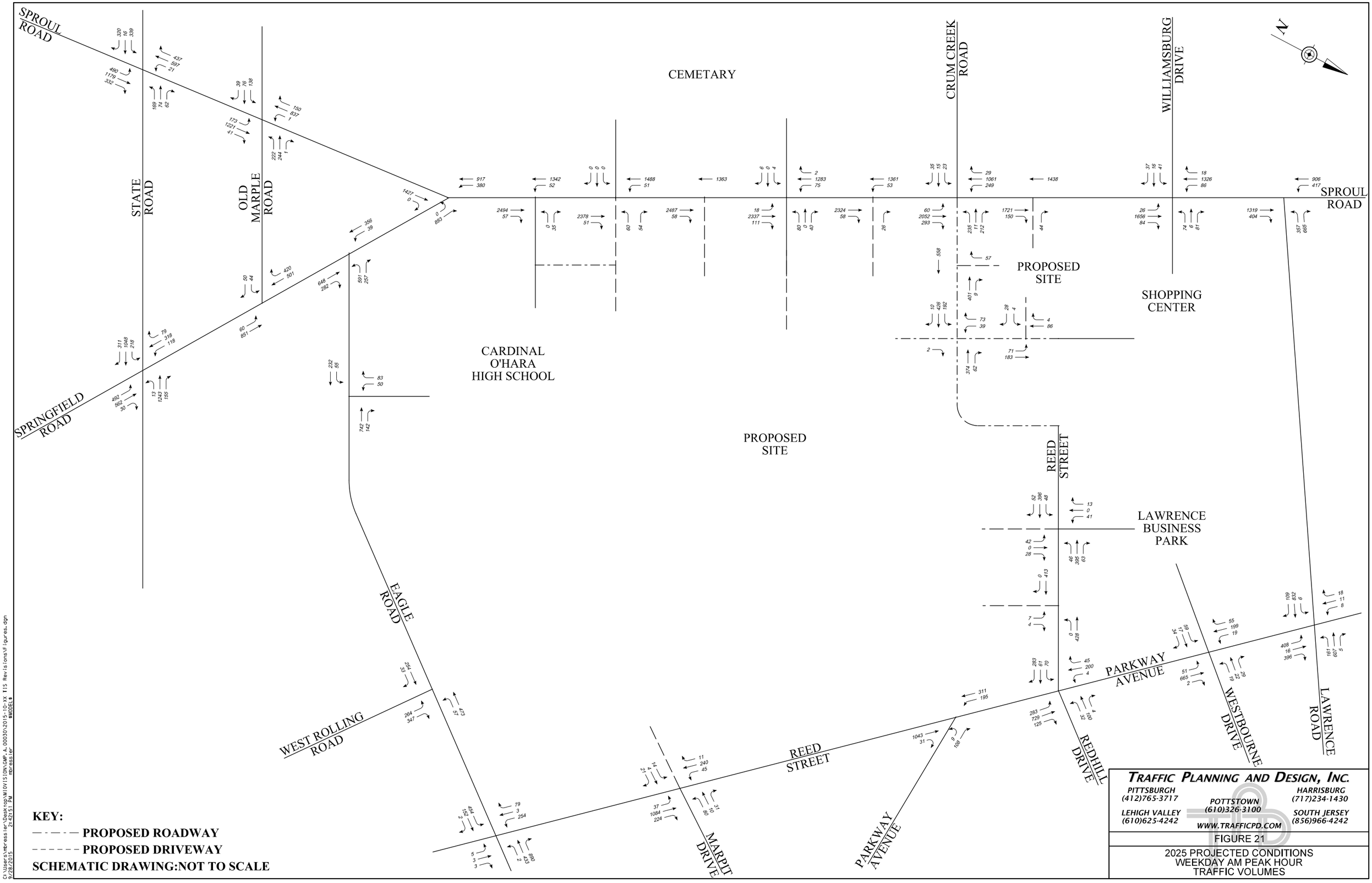
C:\Users\mpressler\Desktop\MIDVISION\GMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:51 PM mpressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

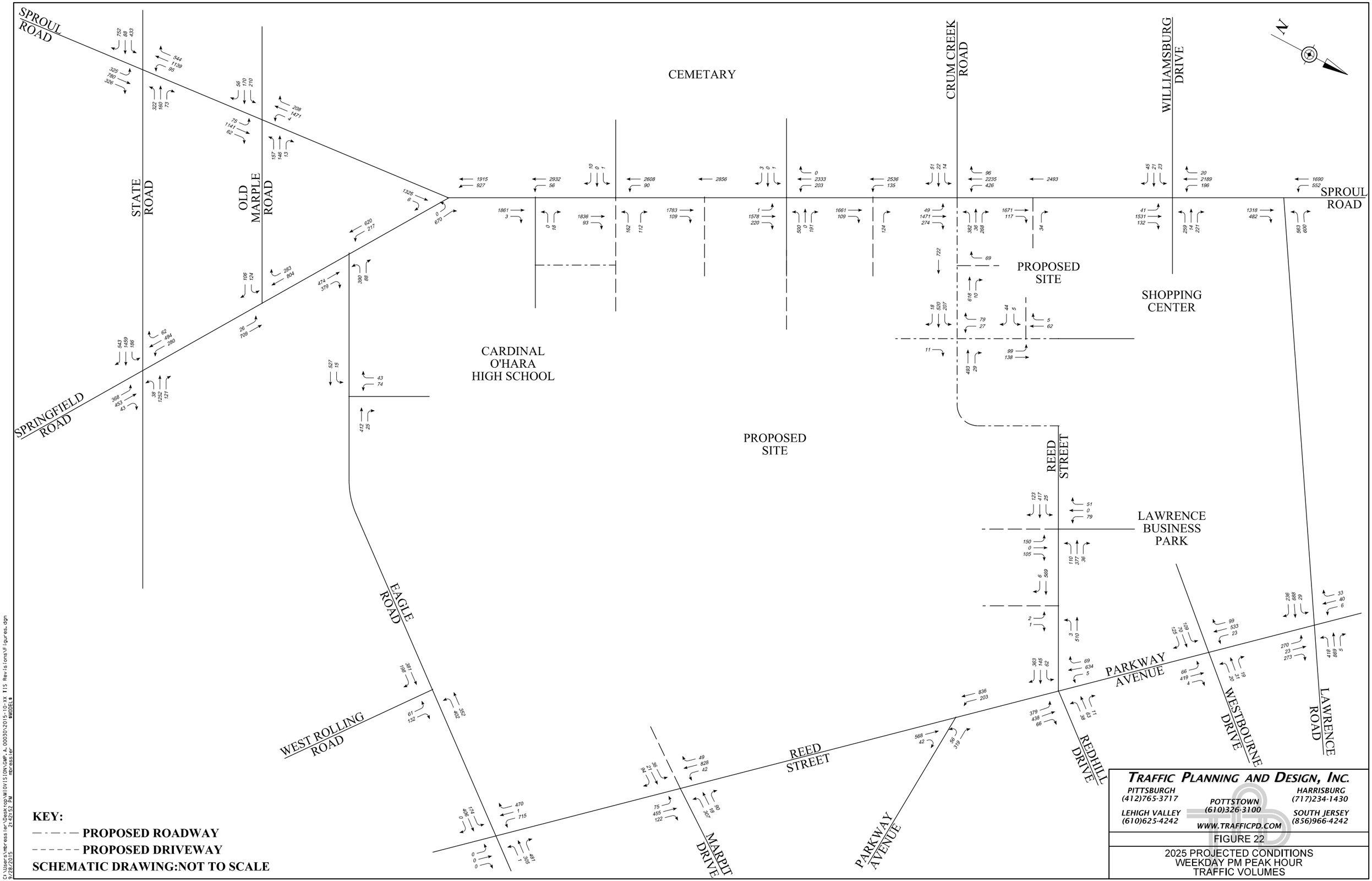
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE 20

2020 PROJECTED CONDITIONS
SAT MIDDAY PEAK HOUR
TRAFFIC VOLUMES




C:\Users\mpressler\Desktop\MIDVISION\CMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:51 PM mpressler $MODEL$




**KEY:**

**PROPOSED ROADWAY**

**PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

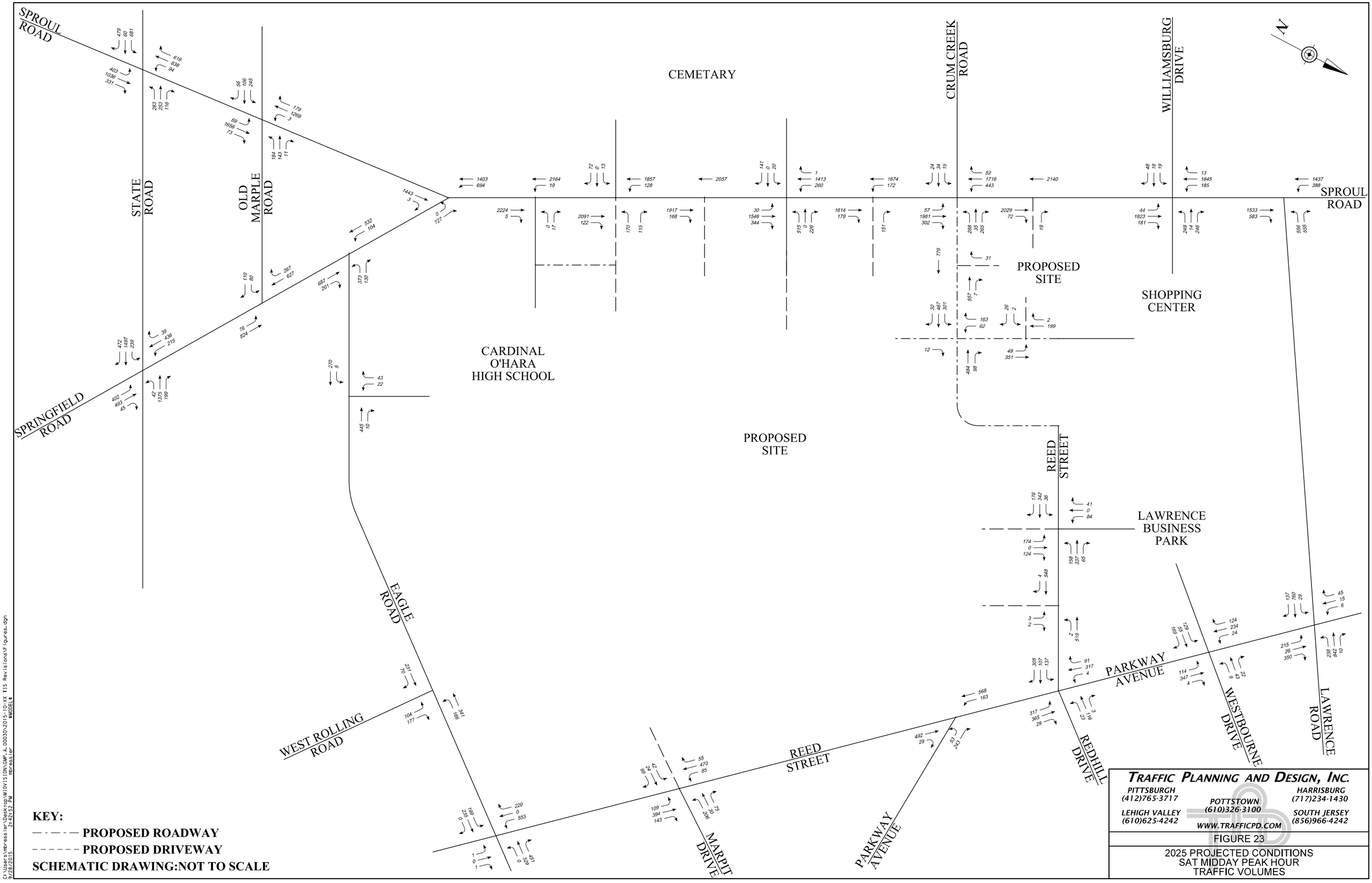
C:\Users\mpressler\Desktop\MIDVISION\GMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:52 PM mpressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE 22

2025 PROJECTED CONDITIONS
WEEKDAY PM PEAK HOUR
TRAFFIC VOLUMES




**KEY:**

**PROPOSED ROADWAY**

**PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

***TRAFFIC PLANNING AND DESIGN, INC.***

*PITTSBURGH (412)765-3717*
*POTTSTOWN (610)326-3100*
*HARRISBURG (717)234-1430*
*LEHIGH VALLEY (610)625-4242*
*WWW.TRAFFICPD.COM*
*SOUTH JERSEY (856)966-4242*

FIGURE 23

2025 PROJECTED CONDITIONS
SAT MIDDAY PEAK HOUR
TRAFFIC VOLUMES

C:\Users\mpressler\Desktop\MIDVISION\GMP A 00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:42:52 PM mpressler
$MODEL$

# APPENDIX A

***PROJECT CORRESPONDENCE***

TRAFFIC PLANNING AND DESIGN, INC.
Est. 1989
2500 E. High Street | Suite 650 | Pottstown, PA | 19464
610.326.3100 | TPD@TrafficPD.com

# Meeting Minutes (FINAL)

RE: Cardinal Crossing (Don Guanella Property)
Sproul Road (S.R. 0320) & Reed Road
Marple Township, Delaware County, PA

Meeting Date: September 4, 2015

Minutes Prepared: September 11, 2015

Location: Pennoni Associates, King of Prussia

Attendees:
Brian Keaveney, Pennoni (BK)
Joe Mastronardo, Pennoni (DS)
Anthony Hamaday, Marple Township (AH)
Anthony Riker, Bohler Engineering (AR)
Bill Rearden, Bohler Engineering (BR)
Bruce Goodman, Goodman Properties (BG)
Chris Anderson, Goodman Properties (SA)
Matt Hammond, Traffic Planning and Design (MH)
Matt Bressler, Traffic Planning and Design (MB)

Notes Prepared by: Matt Hammond, TPD

---

A meeting was held between the Project Team and Marple Township Staff and Consultants to discuss outstanding traffic issues pertaining to the proposed Cardinal Crossing (Don Guanella Property) development. The following is a summary of the discussion(s):

- MH gave an introduction to the current status of the project. This introduction summarized the following three (3) main outstanding traffic issues:
  - Potential additional access to the rear of the site, on Reed Street opposite Marpit Drive.
  - The unmitigated intersection of State Street and Springfield Road.
  - The unmitigated intersection of Sproul Road and Springfield Road.
- BR stated that the first site plans contemplated the "rear access" opposite Marpit Drive. However, due to grading impacts, potential environmental impacts, and impacts to the site layout, this access was subsequently removed from the plan. BR continued that, if the roadway was converted into a collector roadway with the residential taking access to it directly, the driveway could be feasibly provided per Township Standards. However, there would be impacts to the overall site:
  - Residential lots will be lost, thus reducing revenue.
  - Steep slopes and resultant retaining walls would need to increase, thus increasing cost.

- There will be impacts to the riparian buffer on the site.

- MH confirmed that the rear access can work from a traffic standpoint. In fact, the access would provide a positive impact to several intersections along Sproul Road and State Street, since the rear access would provide an alternate route to/from the site. However, this benefit would still not mitigate the outstanding impacts at Sproul/Springfield and State/Springfield. In addition, the access would require a stream crossing in the floodplain.
- BG asked Bohler about the impacts to the cut/fill, grading, and DEP permitting associated with this access and asked if the access could work.
- BR stated that from an earthwork perspective it could work. BR pointed out that the grading would result in the entire residential area being lower, but pointed to their red-lined markup in which they calculated that the elevations will eventually tie into the proposed commercial grading just beyond the traffic circle. Regarding DEP permitting, BR stated that the type of DEP permitting would not change and that a structure would be necessary for the channel crossing. BR also pointed out that they have to study the floodplain associated with this channel whether or not the crossing is made.
- BG asked Pennoni/AH if they would require significant signal/ADA changes at Reed/Marpit with this access.
- BK stated no. However, a 4th leg may create other necessary signal improvements. This issue will also be reviewed by PennDOT.
- AH confirmed that the signal equipment at Reed/Marpit was upgraded within the last 2 years.
- Bohler asked if this new collector road would be considered a cut-thru.
- It was generally decided by all in attendance that "no," this collector would not be considered a significant cut-thru, especially with the proposed roundabout planned at the center of the site being considered a traffic calming measure.
- MH moved the conversation on to the unmitigated intersections of Sproul/Springfield and State/Springfield. Specifically whether the Township would be receptive to accepting "traffic adaptive" signal upgrades along Sproul Road corridor as a mitigation measure. There is no way to model this improvement, but it would be a "qualitative" improvement rather than a "quantitative" improvement. TPD would have to enhance the write-up in the TIS regarding provision of "traffic adaptive" equipment.
- BK stated that he was aware of the Department accepting this improvement as an ATP in the past. BK believes it was simply considered to be a blanket 10%-20% improvement in delay in the past. The scope of this improvements would be several intersections from Lawrence Road to State Street.
- JM confirmed that the Township has tried unsuccessfully to acquire funding for traffic adaptive from PennDOT in the past. This improvement would be something the Township would be receptive to.
- BG asked what the cost of this type of improvement was.
- MH stated $40k-$50k per intersection.
- BG stated that he felt that, due to significant improvements being provided at Sproul/Old Marple, more site traffic may utilize Sproul Road versus Springfield Road. This could help the unmitigated conditions being discussed.

- BG also asked whether dual left-turn lanes on SB or NB Sproul Road onto EB State Street could be considered a feasible improvement moving forward.
- Pennoni stated that, if these improvements are feasible, the Township would be receptive.
- MH state that he would be concerned with the tight resultant turning radii caused by these dual lanes.
- AH asked what improvements were recommended at Springfield/Old Sproul.
- TPD stated that signalization was being proposed. No auxiliary lanes were feasible due to existing properties and a masonry cemetery wall.
- MH confirmed that TPD will have to complete revised capacity analysis accounting for the rear driveway. This analysis will be completed in the next couple of weeks.

Please provide any comments/corrections to these minutes within five (5) business days of the date of these minutes or TPD will assume they are considered final.

Twp. 610-356-4040

# TOWNSHIP OF MARPLE

Fax 610-356-8751

**Board of Commissioners**

Joseph A. Rufo, President
Daniel D. Leefson, Vice President
Jan G. Ceton
Robert Fortebuono
John J. Lucas
John R. Longacre, II
Michael K. Molinaro

Anthony T. Hamaday
**Township Manager**

Sharon L. Angelaccio
**Township Secretary**

J. Adam Matlawski, Esq.
**Township Solicitor**

227 South Sproul Road
Broomall, PA 19008-2397
www.marpletwp.com

John P. Capuzzi, Jr.
**Treasurer**

Kathleen M. Yanoshak
**Controller**

Edward E. O'Lone, CPA
**Director of Finance**

Joseph C. Romano
**Director of Code Enforcement**

William Creighton
**Director of Public Works**

Joseph A. Mastronardo, P.E.
**Township Engineer**

Thomas J. Murray
**Superintendent of Police**

July 31, 2015

MRPL 0132

Anthony Hamaday, Township Manager
Marple Township
227 S. Sproul Road
Broomall, PA 19008

**RE: Preliminary Land Development Plan**
**Cardinal Crossing Towne Center – S. Sproul Road**

Dear Mr. Hamaday:

As requested, we have reviewed the following documents prepared, unless otherwise noted, by Bohler Engineering in connection with the referenced project:

- *"Proposed 'Cardinal Crossing Towne Center' Commercial & Residential Development Preliminary Subdivision and Land Development Plans"* (47 sheets), dated May 15, 2015.
- *"General Project Description and Stormwater Management Calculations,"* dated May 15, 2015.
- *"Cardinal Crossing Goodman Properties Manual of Written and Graphic Design Guidelines,"* prepared by Glackin Thomas Panzak, dated May 15, 2015.
- *"Cardinal Crossings Transportation Impact Study,"* prepared by Traffic Planning and Design, Inc. (TPD), last revised May 15, 2015.

Additional items submitted but not reviewed:

- *"Site Context & Market Overview – Cardinal Crossing,"* prepared by Glackin Thomas Panzak, dated May 18, 2015.
- *"Fiscal Impact Analysis – Cardinal Crossing,"* prepared by Glackin Thomas Panzak, dated May 18, 2015.

The applicant, Cardinal Crossing Realty Associates, LP, proposes to develop a 213 acre site bounded by Sproul Road, Reed Road, Interstate Route I-476, and the Cardinal O'Hara property (folio no. 25-00-01275-00). The property is currently split by three zoning districts: INS – Institutional, RC – Residential, and RB - Residential. The applicant is proposing zoning amendments to replace the existing zoning for the tract and establish a Planned Community Center (PCC) District instituting requirements for commercial development and a Planned Community Residential (PCR) District providing residential development standards. The Preliminary Plan contemplates a mixed-use development consistent with the proposed zoning amendments; which, would permit construction of a 303 multi-family dwelling unit residential development; and, a commercial development campus consisting of 746,650 square feet of retail space (including a fuel island), a 100,000-square-foot medical office building, an 80,000-square-foot fitness center, a 65,000-square-foot hotel, and a 5,585-square-foot convenience store with a fuel island.

With the exception of the existing Don Guanella facility, the property is predominantly woodlands. Branches of Whetstone Run, a tributary to Darby Creek, traverse the property; a FEMA established floodplain is attributed to Whetstone Run along Reed Road. The existing Don Guanella buildings are served by public water and sewer and the applicant is anticipating public services for the proposed development.

We offer the following comments:

ZONING

*The following review was completed with the assumption that the proposed amendments to the Marple Township Zoning Ordinance for the Planned Community Center District (PCC) and Planned Community Residential District (PCR) are adopted as drafted. Further review and additional comments may be necessary, should the proposed amendments be modified.*

1. The development standards, consistent with the proposed Zoning Ordinance amendments should be listed on the plan:
    a. The minimum setback from the edge of the cartway of any road for all multi-family dwellings is 15 feet, however the plan states 10 feet. (§300-33A.G(2))
    b. The single-family detached development requirements shall be added to the Zoning Table. (§300-33A.G(3))
    c. The height of the proposed buildings shall be provided. (§300-33A.Q(2)(d)) The Manual of Written and Graphic Design Guidelines provides building renderings but does not provide dimensional information.
    d. Required off-street parking setbacks shall be added to the zoning table. (§300-76)

2. Driveway 'J' and other site improvements are proposed on the newly established Don Guanella Village (DGV) Mini Campus property. Zoning details for the DGV property are to be provided to confirm that the proposed improvements are consistent with the required development standards for the zoning district.

3. The applicant should indicate proposed private roads and rights-of-way for new or improved roadways offered for dedication to the Township. (§300-33A.Q(3)(d)) Should

internal roads that extend onto adjacent properties be held in private ownership, cross-easements will be required establishing ownership and maintenance responsibilities.

4. Covenants, grants of easement or other restrictions existing or to be imposed shall be provided in accordance with §300-33A.Q(2)(g).

5. Required parking calculations shall be provided for the PCR district. (§300-33A.Q(2)(h)).

6. In accordance with the requirement to preserve and incorporate natural features into the proposed landscaping for the development (§300-33A.F(3)), the following comments are to be addressed:
   a. The entirety of the open space proposed for dedication (green space) is located within the residential portion of the development. Green space is not preserved within the commercial district. The plan should provide for community parks or plazas that are readily accessible to the public within the residential district and preserve green space and riparian corridors within the commercial district equivalent to a minimum of 25% of each tract. (§300-37A.A(4)(e))
   b. The existing streams are separated from the development by high retaining walls and are limited in access; suitable access and a connection that limits the use of retaining walls should be established between the development and the open space areas.
   c. A wetland study is to be provided to confirm preservation of salient natural features.
   d. Open space shall be free of structures that are not complementary to public recreation and use. (§300-14) At least five (5) stormwater basins are proposed within or abutting the open space area.
   e. The ownership and manner of maintenance of the common open space shall be provided. (§300-33A.Q(2)(c))
   f. The proposed open space is to be identified on a plan with a scale not greater than 1 inch equals 100 feet. (§300-33A.Q(3)(c))

7. Although the proposed PCR ordinance requires a minimum 10-foot setback between parking lots containing 10 parking spaces and any dwelling structure (§300-33A.G(5)); the proposed plan contains multiple parking lots containing up to 9 spaces close to residential structures. The parking setback requirement should be revised.

8. If the applicant proposes to phase the development, a phasing plan shall be provided. (§300-33A.M)

9. The applicant must provide a plan for providing sanitary sewer and domestic water service to the development that is satisfactory to the Board of Commissioners, Pennsylvania Department of Environmental Protection (DEP), and appropriate municipal authorities or utility companies. At a minimum this submission shall include a plan illustrating connection to public utilities, accompanied by documentation as to the impact of the proposed development on the public utilities. (§300-33A.O; 33A.Q(2)(e); 33A.Q(3)(f); 37A.B)

The existing Don Guanella Village is served by public sewer via the Radnor-Haverford-Marple Sewer Authority (RHM) and Springfield Township. Connection to RHM and Springfield Township is limited in accordance with DEP's Corrective Action Plan for the Darby Creek Outfall sewer. The applicant should schedule a meeting with DEP, RHM and Springfield Township to develop reasonable alternatives to establish public sewer collection and treatment for the anticipated sewage flow from the development.

10. The proposed ordinance specifies that "pedestrian accommodations shall be included on the development tract in locations logical to provide pedestrian movement between buildings, between buildings and parking areas and between buildings and parking areas and green spaces." (§300-39A.A(3)) Proposed pedestrian accommodations on the site are limited due to the expansive parking areas separating buildings; the remote location of the hotel, fitness center and medical office campus; and, limited connection to the green space walking trail.

11. Signs shall not be installed in a sight triangle. (§300-37A.A(8)(a)(1)(c); 37A.A(8)(a)(4)(d)) Provide sight triangles for all intersections with proposed signs.

12. Loading and unloading areas that do not obstruct or interfere with public rights-of-way or any parking spaces and are screened from view shall be indicated on the plan. (§300-86)

## SUBDIVISION AND LAND DEVELOPMENT

13. The following items should be provided per the Preliminary Plan requirements:
    a. Datum to which contour elevations refer (§265-9.B(8))
    b. All existing buildings, sanitary and storm sewers, water mains, culverts, petroleum or petroleum products' lines, fire hydrants, gas mains, telephone conduits and other significant man-made features on and adjacent to the tract. (§265-9.B(10))
    c. The existing right-of-way and cartway width of all roads on and adjacent to the property. (§265-9.B(11))
    d. Location and width of all proposed streets, alleys, rights-of-way and easements; proposed lot lines with approximate dimensions; proposed minimum building setback lines for each street; playgrounds, public buildings, public areas and parcels of land proposed to be dedicated or reserved for public use (§265-9(13))
    e. Name of all abutting property owners within 500-feet. (§265-9(14), §265-5.B)
    f. All existing and proposed zoning boundaries that traverse or are within 300 feet of the area covered by the plan. (§265-9(17))
    g. The proposed size and location of sanitary sewers, storm sewers, water mains, stormwater management structures and erosion and sedimentation control, along with sufficient engineering design and calculations to satisfactorily demonstrate to the Township Engineer the feasibility of the proposed construction. (§265-9.B(19))

14. The Subdivision Plan is to be consistent with the property boundaries recently established for the Don Guanella Village Mini Campus per the approved Final Subdivision Plan,

prepared by Catania Engineering Associates, Inc, dated February 16, 2015 and last revised May 7, 2015. (§265-9(12))

15. The minimum allowable cartway width for a minor road is 27-feet within a 50-foot right-of-way and the cartway width for a collector road is 36-feet within a 60-foot right-of-way. (§265-25(A)) Additional right-of-way and cartway widths may be required by the Board of Commissioners to promote public safety and convenience or provide parking space in commercial districts and in areas of high-density residential development. (§265-25(C)) Additional information is necessary to define the area of Reed Road right-of-way to be vacated; new right-of-way to be dedicated; and, the established property due to the re-allocation of right-of-way areas.

16. Regarding open space:
    a. Recreational areas and open space are to be located in a manner to best serve the public utilizing existing topographical features. (§265-19(A)) Access to open spaces is restricted due to the proposed site topography and retaining walls.
    b. The applicant shall indicate ownership and maintenance responsibilities for the open space and recreational areas. (§265-19(B))
    c. The proposed property is two parcels divided for the residential and commercial develompents; however, open space is only provided within the residential parcel. Open space should be reserved and/or dedicated for both parcels.
    d. Stormwater management facilities should not be included in the calculation for open space, since usage of those areas for active or passive recreational purposes are limited.

17. Pedestrian interior walks may be required where necessary to assist circulation or provide access to community facilities. Such crosswalks shall have a width of not less than 10 feet and a paved walk of not less than 4 feet. (§265-30(D))

18. Driveways shall be located not less than 40 feet from intersections. (§265-30(D))

19. A lighting intensity plan is required for the street lights, parking areas, pedestrian/public walkways and trails. (§300-11; §170-29.B).

## TRANSPORTATION IMPACT

20. Regarding the previously proposed site access to Reed Road in the area of Marpit Drive, the study should provide information regarding the impact of this connection if it were to be constructed, and whether conditions at other study area intersections would improve. In addition, documentation to support the applicant's statement that the access is infeasible should be provided to the Township.

21. The revised Traffic Impact Study shows unmitigated impacts associated with the development traffic at the Sproul Road and State Road intersections with Springfield Road. Additional analysis should be conducted to investigate feasible mitigation measures. If

adequate improvements cannot be identified, the applicant can consider: reducing the size and/or intensity of the development, investigating other connections to the limited access highway system (I-476), and/or establishing an alternate transportation plan, acceptable to PennDOT and the Township. The proposed improvements at the intersection of Sproul Road and Old Marple Road are required to mitigate the impact of the development traffic and do not appear to contribute to the mitigation required at the intersection of State and Springfield Roads, as indicated in the May 15, 2015 letter from TPD.

22. The configuration of the intersection of Sproul Road and Springfield Road should be revised within the Synchro models to more closely reflect the proposed geometry. Please revise all Synchro files with the correct lane configuration at this intersection and update the LOS/delay results for all scenarios.

23. As previously noted, due to deficiencies indicated at major intersections along the State Road and Sproul Road corridors, the study scope should be expanded to include the evaluation of impacts to potential alternative routes to access the project site, specifically Reed Road via Burmont-Eagle Road in Haverford Township and Reed Road via West Rolling-Eagle Road in Springfield Township. The recent study has revised the trip distribution to these routes, but has not evaluated the impacts to the key intersections such as Burmont Road & Glendale Road and Eagle Road & West Rolling Road.

24. Based on the 95$^{th}$ percentile queue analysis results, the queue length exceeds the existing/proposed storage and/or extends into adjacent intersections with the proposed development's site traffic. The report should be revised to investigate feasible mitigation measures of the proposed site development for the following locations:
    a. Sproul Road & Lawrence Road
    b. Sproul Road & Crum Creek Road/Realigned Reed Road
    c. Sproul Road & Springfield Road
    d. Sproul Road & State Road
    e. Springfield Road & S. Cemetery Driveway

25. The traffic signal phasing is not consistent between the peak hours at the intersection of Sproul Road and State Road; for example, the southbound left-turn phase is a "lead" phase during the AM peak hour and a "lag" phase during the PM peak hour for the 2025 Build with proposed improvements. Please revise the Synchro files with consistent phasing between the peak hours and update the capacity analysis results.

26. The proposed project includes an extensive internal network of roadways, drive aisles and parking areas; as such, special attention should be given to internal traffic circulation patterns with proper signage and pavement markings. The applicant must address the following to ensure safe and efficient internal operation:
    a. Dead-end streets are prohibited. (§265-23(I)) The proposed Road 'A' terminates in a dead-end.
    b. Intersections involving the junction of more than two streets shall be designed with extreme care for both pedestrian and vehicular safety. (§265-28(A)) For example:

the junction of Proposed Driveways 'A,' 'C,' and 'D' creates a three-way intersection that may be confusing for drivers and pedestrians.

c. Streets shall be laid out to intersect as nearly as possible at right angles with no streets intersecting another at an angle of less than 60 degrees. (§265-28(A)) Multiple roads appear to intersect at less than 60 degrees.
d. Centerline radii shall be provided for all horizontal curves to ensure adequate sight distance. Safe sight distance is to be provided at internal intersections (§265-26(B))
e. Clear-sight triangles of 75 feet measured along street center lines from their point of junction shall be provided at all intersections, and no building shall be permitted within such sight triangles. (§265-28(C))
f. An evaluation of need for left-turn lanes along main access roadway is required.
g. The required traffic control and anticipated Levels of Service for intersections along main access roadway is to be provided.

STORMWATER MANAGEMENT

27. Whetstone Run and Tributary No. 1 to Whetstone Run are identified on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for Marple Township, Delaware County, Pennsylvania (Map Numbers 42045C0104F and 42045C0103F, last revised November 18, 2009. The 100-year floodplain associated with Whetstone Run shown on the plans does not appear to follow a consistent elevation. In addition, the plans do not show a 100-year floodplain associated with Tributary No. 1. A hydrologic and hydraulic study is necessary to delineate the floodplain to confirm that the proposed development does not encroach within the flood hazard area or designated riparian buffers. (§143-4.A(3))

28. Roadway crossings or structures located within designated floodplain areas must be able to convey runoff from a 100-year design storm consistent with FEMA floodplain management requirements. (§257-21.E). Culvert design calculations should be provided for proposed stream crossings to demonstrate that the 100-year storm is safely conveyed.

29. Culverts, bridges, storm sewers, or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105. (§257-13.E). Permits for the proposed bridges and culverts are to be provided. In particular, the proposed stream crossings at Main Blvd. approximate Station 23+50 and Driveway 'C' approximate Station 5+00 are proposing over 20 feet of fill across the stream bed.

30. A DEP approved wetland delineation report and jurisdictional determination (if required) is to be provided. (§257-13.C)

31. The existing top of bank of the water features (stream channel, lake or wetland) and dimension for the required 50-foot riparian buffer should be clearly identified. (§257-17.C)

32. An Existing Resource and Site Analysis Map (ERSAM) is required to show environmentally sensitive areas including, but not limited to: steep slopes, ponds, lakes, streams, wetlands, hydric soils, vernal pools, stream buffers, hydrologic soil groups, proposed development features, and any existing recharge areas. (§257-15.B.1)

33. Pre- and post-development peak stormwater runoff calculations are required to address the following:
    a. The limit of the redeveloped portion of the existing Don Guanella property is to be identified to verify the land cover conditions used for the pre-development runoff analysis. (§257-19.C.2)
    b. Provide a plan and summary table to show cover assumed in each drainage area in the pre- and post-development stormwater management calculations.
    c. Areas identified as undisturbed for the purposes of stormwater management calculations should not include areas of disturbance necessary for construction of the trail, pedestrian bridge, outfalls, rip-rap, associated tree clearing, etc.
    d. Undisturbed areas that drain to proposed stormwater management BMPs should be included in the stormwater management routings to demonstrate that stormwater runoff can be conveyed for the 100-year storm.
    e. The Post-Development Drainage Area Plan should be revised to include areas of disturbance in the southerly corner of the site at the proposed access driveway and adjacent to the existing track.
    f. Clarification should be provided regarding the post development drainage areas depicted on sheet 43. Specifically, the areas are unclear between DA-1P(B2), DA-1P(C2), and DA-1P(C3) and between DA-1P(A2), DA-2P(J), and DA-2P(J2).
    g. Inconsistencies between the Post-Development Drainage Area Plan and Inlet Drainage Area Plan drainage area boundaries are to be corrected.

34. Soil testing for the proposed stormwater infiltration BMPs to address the following minimum requirements:
    a. A minimum depth of twenty-four (24) inches between the bottom of the BMP and the top of the limiting zone should be provided for infiltration BMPs. (§257-16.A.1.a)
    b. Clarification should be provided to confirm how the design infiltration rate was calculated for each basin with multiple tests.
    c. Test pit locations should be clearly shown on the Post Construction Stormwater Management Plan or ERSAM.

35. Regarding the design requirements for proposed stormwater BMPs:
    a. Infiltration facilities shall be capable of completely draining the retention (infiltration) volume within 72 hours from the end of the design storm. (§257-16.A.1.c). Surface basin B2 and underground basins B3, B4, and B10 do not meet this requirement. Calculations are to be provided to confirm compliance with this requirement for all proposed stormwater management BMPs.
    b. The design for surface basin B2, and underground basins B3 and B4 do not satisfy the loading ratio requirements in accordance with the PA Stormwater BMP Manual. Calculations are required for all proposed stormwater management infiltration

BMPs to confirm that the design is consistent with a maximum impervious loading ratio of 5:1 and a maximum total loading ratio of 8:1.

c. Emergency spillway design calculations are required for the stormwater management facilities. The height of embankment must provide a minimum one (1) foot of freeboard above the maximum water surface elevation computed when the facility functions for the 100-year proposed conditions inflow (§275-25.C) In addition, adequate permanent lining and reinforcement is necessary to prevent erosion and settlement of the spillway crest.
d. Grading should be revised to limit the use of retaining walls for stormwater management basins. Basins constructed on the downstream side of retaining walls limit access for maintenance.
e. Sufficient detail or a design table is required to provide design information for each stormwater management BMP, including but not limited to: elevations of bottom of basin, top of basin, ground surface (if underground), design water surfaces, emergency spillway, and top of berm, test pits utilized for design of each BMP, groundwater or other limiting zone elevations and infiltration testing elevations.

36. Access easements are to be established for all significant stormwater controls, conveyances, and BMPs, including a 15-foot perimeter area surrounding these features that will provide the municipality sufficient ingress to and egress from a public right-of-way. (§257-33.B)

37. Regarding the storm sewer design:
    a. Conveyance facilities to or exiting from stormwater management facilities (i.e., detention basins) shall be designed to convey the design flow to or from the facility. (§257-21.D). Therefore, the storm sewer collection system upstream of stormwater management BMPs should be designed to convey stormwater runoff to the BMP without bypassing for the 100-year storm. Inlet capacity and spread calculations should be provided to confirm that stormwater runoff will not bypass to another stormwater management BMP. For example, if stormwater runoff were to bypass inlet INB121 and drain to INH14, the stormwater runoff would be contributing to drainage area DAP-1P(H3) outflowing into Basin #H3 instead of the intended design drainage area DA-1P(B6) discharging to Basin #B6.
    b. Inlets INB5, INB26, INB28, INB122, INB114, and INB107 are examples of inlets where the calculated rational flow to the inlet exceeds 10 cfs. Double inlets should be provided as necessary.
    c. Several manholes are in excess of 20-feet deep (i.e. INH16 and MHH5 are 42-feet deep). The storm sewer design should be revised to avoid excessively deep manholes and inlet boxes.
    d. Two (2) feet of cover (minimum) is required for the storm sewer pipes.
    e. Storm sewer profiles indicating utility crossings are required.

38. Stormwater discharge from storm sewer and open channels onto steep slopes is to be avoided, because adequate erosion protection cannot be provided. (§275-25.C).

39. Design for the Erosion and Sediment Pollution Control Plan shall be provided to address the following (§257-14):
    a. Calculations and details are required for the design and construction of the temporary sediment basins.
    b. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity; nor shall the BMPs receive runoff until the contributory drainage areas achieve adequate stabilization. (§257-14.F.1; §257-14.F.2.) Adequate protection should be provided; and, the locations of sediment trapping devices and basins should avoid areas reserved for permanent stormwater infiltration.
    c. Provide clarification where temporary trash racks are proposed.

40. The proposed pedestrian trail should be designed in accordance with Appendix E of the Stormwater Management Ordinance, Riparian Buffer Trail Guidelines. In particular, the trail should be revised to meet the following requirements:
    a. Paved trails, if appropriate to the site, are permitted and must be located at least twenty-five (25) feet from the top of stream bank.
    b. New trailheads and trail parking areas shall meet all the stormwater infiltration and rate control requirements.
    c. Any new parking areas and trailhead clearings should not encroach on the riparian buffer in any way. The 20 space parking lot adjacent to Proposed Driveway 'J' encroaches within the riparian buffer.
    d. The installation of interpretive and educational signage is strongly encouraged along the trail to point out local natural resources and educate the public on how riparian buffers protect the watershed.

41. An operations and maintenance plan is to be provided for all stormwater management BMPs on the Post Construction Stormwater Management Plan. (§257-33).

42. The stormwater management design appears preliminary and lacking full details and plan information necessary for a complete review. Additional construction details are to be included; storm sewer design calculations and details are required; and, plans need to be provided at a more appropriate scale. In addition to providing plan review notes and/or red-lined plans, a meeting with the design engineer may be appropriate prior to resubmission.

## LANDSCAPING

43. Provide a separate Planting Schedule for each of the two proposed zoning districts that, at a minimum, lists the type of planting (street tree, ornamental tree, evergreen tree, and shrub), the size of the proposed plant, and the quantities. This information is required in order to determine if tree replacement and buffer requirements are met.

44. Regarding site clearing and tree replacement within the PCR District (§300-33A):

a. In accordance with the proposed ordinance amendment, the clearing of healthy, non-diseased trees for any purpose shall not result in the removal of more than fifty (50%) of any existing trees, tree masses or hedgerows without the approval of the Board of Commissioners. The Compliance Chart on Sheet 27 states the allowed removal to be seventy-five (75%). Revise the Compliance Chart and Landscape Plans to be consistent with the ordinance requirements.
b. Delineate the areas for the method used to calculate the removal of tree masses by identifying the existing tree line, the limit of tree removals, and square-foot calculations of each.
c. The Replacement Planting Requirements for plant credits listed on the Compliance Chart are inconsistent with the proposed ordinance. Revise the Compliance Chart and Landscape Plan to match the ordinance requirements.
c. In accordance with §300-33A.F.(1)c, Trees used as part of a buffer planting (per Article X) can be included as part of the replacement calculation, but not lot trees (§280-16).
d. When clearing next to an established woodland, the mature trees on the new edge of woodland, as well as the woodland habitats, are exposed to unfavorable conditions. In order to preserve the mature trees, place a portion of the replacement trees, both shade trees and ornamental trees, along the limit of clearing to create a new woodland edge.

45. Regarding site clearing and tree replacement within the PCC District (§300-36A):
    a. Delineate on the plan the areas for how removal of tree masses were calculated. Show the existing tree line, the limit of tree removals, and square-foot calculations of each.
    b. Trees used as part of a buffer planting (per Article X) can be included as part of the replacement calculation (§300-39A.A(2)c.3), but not trees for perimeter landscaping or interior landscaping (§300-81).

46. Regarding Buffers (Article X):
    a. It is the intent of the buffer landscaping to provide a physical, visual, and acoustical separation between land uses. For all calculations, if the existing riparian buffer or existing vegetation is to be used in lieu of additional plantings, provide verification that the existing remaining vegetation in that area meets the criteria of §300-65.
    b. Along the length of the property line between the commercial and residential districts, all of the areas that do not have a sufficient existing riparian buffer must have a Type D1, B3 buffer. Where streets or detention basins are placed on the property line, the planting locations should be adjusted as required to buffer the entire length of the property line. Specifically, the area on the northwestern side of the intersection of Driveways 'G' & 'M'. (§300-67 & §300-68)
    c. Along the length of the property line between the commercial (retail) and the institutional districts, our calculations for the existing riparian buffer and existing vegetation is approximately 150 linear feet less than indicated on the Compliance chart. Clearly indicate, with a proposed tree line, where the limits of existing vegetation to remain is located. Recalculate and revise the Compliance Chart and

the Landscape Plans with the correct number of plants required for the Type A1 buffer. (§300-67 & §300-68)

d. The area on the east side of I-476 is zoned low-density residential. Along the length of the property line between the commercial area and the I-476 right-of-way, a buffer will be required. Revise the Compliance Chart and the Landscape Plans with the appropriate buffer plantings.
e. The hedgerow planting (Type D1) refers to a row of shrubs, 48" high minimum, spaced 3' on center. Revise the Compliance Chart and the Planting Schedule to include the number of shrubs proposed.

47. For all calculations, subtracting the length of property line that falls within streets to be dedicated rights-of-way is acceptable, but not driveways. For the buffer between the residential district and Reed Road, recalculate the buffer length, and revise the Compliance Chart. Recalculate the length of perimeter landscaping required and revise the Compliance Chart and Landscape Plans accordingly. (§300-80)

GENERAL

48. Due to the location of the development, SEPTA has requested to be involved in the planning process to review potential modifications to public transportation system and/or possible integration with the proposed residential community and commercial development.

49. The Preliminary Plan should be reviewed by the Township Shade Tree Commission, Environmental Advisory Committee, and Fire Marshall.

50. The applicant is reminded that the following are required prior to final approval:

a. Land Development/Improvement Securities Agreement, Deeds of Dedication of rights-of-way, and any proposed utility and drainage easements for approval by the Township solicitor. (§265-16.C; -32(C and E))
b. Letter of adequacy, NPDES Permit and applicable General Permits from the Delaware County Conservation District. (§257-23.A(4))
c. Sewage Facilities Planning Module (§300-18.F), or an exemption.
d. A contribution to the Township Recreational Fund in accordance with §265-18.
e. An Operations and Maintenance Agreement with the Township covering all stormwater controls and BMPs in accordance with §257-36.
f. A contribution to the Township Stormwater Control and BMP Operation and Maintenance Fund to defray the cost of inspection and maintenance for a 10-year period in accordance with §257-39.

If you have any questions or concerns, please feel free to contact the undersigned.

Sincerely,

Joseph A. Mastronardo, PE
Senior Engineer
**PENNONI ASSOCIATES INC.**
Township Engineer

JAM/epj
cc: Joseph Romano, Director of Code Enforcement
Adam Matlawski, Esq., Township Solicitor
Tom Comitta, AICP, CNU-A, RLA, Township Planner
Bruce Goodman, Cardinal Crossing Realty Associates, L.P.
Joseph A. Damico, Esq.
Bohler Engineering
Matthew Hammond, PE, Traffic Planning and Design, Inc.
Fran Hanney, PennDOT

pennsylvania
DEPARTMENT OF TRANSPORTATION
www.dot.state.pa.us

June 16, 2015 ← RECEIVED 6/29/15

MARPLE TOWNSHIP, DELAWARE COUNTY
S.R. 0320 (SPROUL ROAD)
HIGHWAY OCCUPANCY PERMIT APPLICATION NO. 1074
CARDINAL CROSSING
TRAFFIC LOG NO.: D14-021XR
**PRELIMINARY REVIEW**

Matthew I. Hammond PE
Traffic Planning and Design, Inc.
2500 East High Street, Suite 650
Pottstown, PA 19464

Dear Mr. Hammond:

The Department has reviewed the preliminary submission for compliance with applicable Department Regulations. This preliminary review has identified deficiencies that must be addressed in order for your submission to be processed as efficiently as possible.

The Department understands that the provided analysis is preliminary in nature. As such, the Department reserves the right to make future additional comments based on the formal submission of a complete Transportation Impact Study (TIS).

Our comments on your preliminary submission are as follows:

**PRELIMINARY COMMENTS**

w/c 1. The PennDOT project number, D14-021XR, for this preliminary review must be referenced when the formal Highway Occupancy Permit (HOP) application is submitted.

w/c 2. Please note that District 6-0 is accepting Transportation Impact Study (TIS) submissions via EPS. This will provide a more efficient and timely review of the submissions for the applicants while also assisting the Department with document management. Note that utilizing EPS will require a formal permit application be made for the accesses; therefore, future submissions must include:

   a. A transmittal letter including responses to Scoping comments or comments from previous reviews

   b. Scoping Meeting Request Form

   c. Minutes from the Scoping meeting or any previous minutes

   d. Forms M950-MPC and M950-AA (as appropriate)

   e. Previously completed municipal reviews (if any)

   f. Electronic copies of capacity analysis files (e.g. HCS or Synchro)

w/c 3. As previously noted, Department guidelines require that the overall intersection level of service with development be at least equivalent to the Level of Service (LOS) without development, or that the change in delay shall not exceed 10-seconds of additional delay, for the opening year and horizon year projected condition. As presented the Study identifies two intersections without necessary improvements to mitigate the development traffic impact:

- S.R. 0320 (Sproul Road) and S.R. 1009 (Springfield Road)
- S.R. 1009 (Springfield Road) and S.R. 0001 (State Road)

Provide an approved local or alternative transportation plan, or a level-of-service design waiver, in accordance with Pennsylvania Code, Title 67, Chapter 441.5(e), for consideration along with a detailed description of the remedy necessary to mitigate the impact of the development and clearly identifying the constraints making the implementation of the improvements infeasible. Potential improvements related to the alternative transportation plan could include:

- Adaptive signal control system along Sproul Road, limits to be identified in consultation with the District and the Township.
- Enhanced pedestrian connections between the subject development and the residential development on the northwest corner of the Reed Road and Parkway Avenue intersection.

w/c 4. As previously noted, schematic concept plans should be provided for all improvements, both proposed and those assumed to be infeasible.

w/c 5. Note that southbound left turns from the Shopping Center/Proposed Site Driveway at Reed Road may be restricted, depending on the new roadway alignment and the available sight distance. The concept plans should address whether this movement can be safely accommodated.

w/c 6. Clarify the limits of the continuous northbound through/right lane on Sproul Road. This lane should continuously extend from the southern site frontage to Lawrence Road.

w/c 7. The Springfield Road (S.R. 2009) & Eagle Road (S.R. 1006) southbound left meets the conflict factor threshold for a protected prohibited left turn phase. Provide an evaluation of the appropriate phasing for this movement.

8. Applicant will address the following in a future submission or during HOP application (For information purposes only):

w/c a. Provide additional information regarding the crashes at Lawrence Road and Parkway Avenue, including the types of crashes and potential patterns over the five year period. Please note that as part of the formal permit application intersection collision diagrams will be required to be in the Signal Design report.

w/c b. Consideration of the recommendation to install a traffic signal at S.R. 2009 (Springfield Road) and S.R. 2008 (Old Marple Road) requires additional coordination with the Township.

w/c c. As indicated in the August 14, 2014 meeting minutes, provide documentation of coordination with SEPTA regarding bus stop locations and pedestrian accommodations.

w/c d. With respect to the access design and formal permit application, please ensure that the following items are addressed:

i) The proposed scope of work must ensure pedestrian access into the site and compliant, accessible crossings at the signalized site driveways. Sidewalks should be provided along the site frontage.

ii) Consistent with current Department Policy, applicants for a HOP must apply for an EPS Business Partner ID (BPID). The BPID is to be used in the establishment of a billing account for the invoicing of inspection costs.

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the formal submission and application for a Highway Occupancy Permit. If you have any questions pertaining to the technical aspects of this review, please contact Albert Federico, P.E., PTOE of McCormick Taylor, Inc. at 215.592.4200 or apfederico@mtmail.biz.

Respectfully,

Francis J. Hamey
District Traffic Services Manager
Engineering District 6-0

cc: M. Miele
L.R. Belmonte
Traffic Services File
Marple Township
Delaware County Planning Commission

TRAFFIC PLANNING AND DESIGN, INC.
Est. 1989
2500 E. High Street | Suite 650 | Pottstown, PA | 19464
610.326.3100 | TPD@TrafficPD.com

# Meeting Minutes

RE: Cardinal Crossing (Don Guanella Property)
Sproul Road (S.R. 0320) & Reed Road
Marple Township, Delaware County, PA

Meeting Date: March 17, 2015

Minutes Prepared: March 20, 2015

Location: PennDOT District 6-0 Offices

Attendees:
Fran Hanney, PennDOT 6-0 (FH)
John Otten, PennDOT 6-0 (JO)
Paul Lutz, PennDOT 6-0 (PL)
Joe Rufo, Marple Township (JR)
Adam Matlawski, Marple Township (AM)
Brian Keaveney, Pennoni (BK)
Joe Mastronardo, Pennoni (DS)
Al Federico, McCormickTaylor (AF)
Bruce Goodman, Goodman Properties (BG)
Adam Goodman, Goodman Properties (AG)
Chris Anderson, Goodman Properties (SA)
Mike Puppio, R & P Law (MP)
Paul Harris, PH&C (PH)
Matt Hammond, Traffic Planning and Design (MH)
Matt Bressler, Traffic Planning and Design (MB)

Notes Prepared by: Matt Hammond, TPD

---

A scoping meeting was held between the stakeholders to discuss the issues pertaining to the proposed Cardinal Crossing (Don Guanella Property) development. Particularly, the discussion pertained to the PennDOT Review Letter dated December 29, 2014 and the Township (Pennoni) Review Letter dated February 3, 2015.

The following is a summary of the discussion(s):

- MH gave an introduction to the current status of the project. This introduction included a general statement that the Project Team would comply with a majority of the comments contained in both of the review letters received.
- FH believes that the "main" improvements proposed as part of the development along Sproul Road are good, but is it enough?

- MH said that the traffic study projects the volumes out to 2025 and based on his experience, he believes that the projected 2025 volumes are overestimated. He suggested that the volumes proposed be re-evaluated at certain points in time.
- BG stated that the development would be a full occupancy within 3 years and he proposed to complete all of the roadway improvements in one phase.
- FH mentioned that he would like to get the improvements straight and agrees with the thought that the traffic volumes under 2025 projected conditions are likely high due to the required methodologies. He stated that he also understands there are a finite amount of resources available.
- FH asked about the proposed signalized access points serving the development and if an additional through lane is needed on Sproul.
- MH said that providing a third through lane on Sproul will not solve any potential future issues, as the widening would only occur in the vicinity of the property's Sproul Road frontage due to a number of constraints.
- PL suggested that right turn overlaps be provided at the proposed signalized access points. He also suggested that split phasing could be provided for the signalized access located near O'Hara with dual left turn lanes being provided for egressing movements.
- FH discussed the potential of alternate routes for traffic to enter/exit the proposed development due to potential congestion existing on Sproul Road.
- JM explained that the Township's comment relating to alternative routes related to whether or not improvements are needed at "other" intersections and whether or not those improvements would encourage traffic to utilize residential roads.
- FH asked, "what if it is just a logical way to go?"
- JR said that the Township is concerned with people utilizing Warren Boulevard to get to/from the development to avoid any potential congestion.
- FH suggested looking at possible traffic calming measures if needed, i.e. portable speed tables.
- FH asked if re-striping could be done at the intersection of Lawrence Road and Parkway Avenue to provide for left turn lanes on Lawrence Road.
- JR stated that the left turn from Parkway to Lawrence is an issue today.
- FH suggested that the left turn lane proposed on Lawrence to Parkway not be provided if the Township feels this to be an issue with cut-thru traffic.
- JR would rather see traffic to Sproul Road encouraged.
- FH asked what could be done at the intersection of Sproul and Lawrence?
- AM stated that the left turn lane from SB Sproul Road is needed.
- MB mentioned that the traffic study proposes dual left turn lanes on Lawrence to SB Sproul.
- FH said only a single lane is needed travelling east on Lawrence from Sproul, as the second EB lane could be utilized to accommodate the second WB left turn lane.

- MH mentioned that the LOS mitigation is only "missed" during the PM peak hour.
- BK stated there are a number of left turns from Lawrence to SB Sproul and the improvements proposed (dual left turn lanes with a separate right turn lane) should remain.
- AF said that he does not believe there is traffic congestion behind the Lawrence Park Shopping Center, therefore the easier route to the proposed development would be down Parkway.
- MB asked if the traffic study should increase the assignment of traffic to/from the proposed development to Parkway.
- The consensus was no increase in the assignment to Parkway.
- BK suggested that the intersection of Sproul and Lawrence should be made to operate as efficient as possible and the trip assignment/distribution at Lawrence and Parkway should remain as previously proposed.
- BG asked if a traffic signal should be provided at Parkway Avenue and Westbourne Drive.
- PL & FH said that a signal at Westbourne could work and asked that TPD look at that as part of the revised traffic study.
- JR asked about the relocated portion of Reed Road at Sproul.
- MH said Reed Road at Sproul Road would be converted to a right-in/right-out for use by the Home Depot so that the relocated Reed Road did not take away direct access to Reed and Sproul, as currently exists.
- JR asked about the re-alignment of Crum Creek and Reed Road at Sproul.
- PL stated that the Township has previously requested a traffic signal at Crum Creek and Sproul because some of the residential streets/neighborhoods on the west side of Sproul, north of Crum Creek, experienced cut-thru traffic because they could not get out onto Sproul. PennDOT denied the request of a signal at Crum Creek and Sproul for various reasons.
- MH said that Crum Creek is only being improved near its intersection with Sproul Road as part of the alignment and therefore, would not expect significant additional traffic on Crum Creek due to the existing geometry of Crum Creek, west of Sproul.
- MH asked if Pennoni and PennDOT were ok with an additional right-in only driveway on Sproul Road between the proposed signalized access points which would serve the proposed development.
- FH & JM said they did not see a problem with the right-in only.
- BK asked if a median will be needed on Sproul at the right-in only to discourage illegal turns.
- MH said he would look at it but would also look at the possibility of angling the right-in to make it extremely difficult for illegal turns.
- FH said he would defer what may be needed at Burmont/Eagle/Reed to the Township. A traffic signal and left turn lanes exist and SB right turn lane looks to be maximized.
- PL suggested a right turn overlap be provided.

- FH said that TPD will have to explore any changes to the existing lane allocations, signal timings, the left turn on the Reed Road approach to Eagle/Burmont.
- JR asked about access to Reed opposite Marpit Drive.
- MH said the access on Reed opposite Marpit was initially looked at but it physically couldn't be provided.
- PH said the grades do not work.
- JM said he was familiar with the area and questioned why the access could not work.
- FH suggested that an access point on Reed opposite Marpit would add to the existing problems being discussed, as the right and left turns would increase at Reed/Eagle.
- AF stated that the vehicles would travel on Reed regardless of a "back" access.
- MH said the Project Team would provide him with the grading info in the area discussed.
- MH asked about the intersections of Route 1 and Springfield Road and Route 1 and Sproul Road.
- FH stated that these intersections can be dealt with on another project as he wants/needs the left turn lanes on Sproul Road at its intersection with Old Marple Road.
- JM said the Route 1 intersections can be dealt with as an alternative transportation plan (ATP).
- FH said he is pleased with the improvements being proposed as part of the development as well as the fact that they are being proposed in one phase.
- AF suggested that because of the comments relating to the gravity model and trip distribution that an interim submission be made for review and comment prior to completion of the revised traffic study.
- BK asked for the Township to be copied on the interim submission.
- FH said we will work together to establish benchmarks for future traffic studies and potential traffic signal retiming.

Please provide any comments/corrections to these minutes within five (5) business days of the date of these minutes or TPD will assume they are considered final.

## Bressler, Matt

**From:** Joseph Mastronardo <JMastronardo@Pennoni.com>
**Sent:** Wednesday, February 18, 2015 4:28 PM
**To:** Bressler, Matt; Brian Keaveney
**Cc:** Hammond, Matt
**Subject:** RE: Nearby Developments - Marple Township - Don Guanella
**Attachments:** Mid-County_TIS_1-6-2014.pdf; Trip Gen Assessment 2013-1211.pdf

Matt, the preliminary TIS for Marple Associates is attached. They have not proceeded with Land Development approvals with the Township yet; however, they have received a $2 million state grant to proceed with the transportation improvements to West Chester Pike, so I would expect a Preliminary Plan submission within the next few months.

The Crozer project is approved, a copy of the development plan is attached. A traffic study was not required for the project, however they did a submit trip generation assessment (attached).

The Ravenscliff Phase 4 project has been withdrawn.

Please let me know if you require additional information.

Thanks,
Joe

**Joseph Mastronardo, PE**
**Pennoni Associates Inc.**
**Main** 215-222-3000 x7758 | **Direct** 215-254-7758
**Fax** 215-222-0598 | **Mobile** 215-239-4977

---

**From:** Bressler, Matt [mailto:mbressler@trafficpd.com]
**Sent:** Wednesday, February 18, 2015 4:12 PM
**To:** Brian Keaveney; Joseph Mastronardo
**Cc:** Hammond, Matt
**Subject:** Nearby Developments - Marple Township - Don Guanella

Brian/Joe:

Please see the below review comment we received from PennDOT pertaining to the nearby developments you directed us to account for in the TIS.

8. Confirm that the approval status of the assumed background developments and include trip generation information for each background development in the appendix, as well as excerpts from the respective traffic impact studies if available.

It appears we just used ITE and assumed 100% build-out in our TIS. Two of the three developments are outside of our Study Area, so TPD also assumed a % of these sites hitting our Study Area intersections. Do you have any of this information for us to include in the revised TIS?

**Matthew Bressler**
*Project Manager*

Traffic Planning and Design, Inc. (TPD)
2500 E. High Street, Ste 650
Pottstown, PA 19464
P: 610.326.3100

www.TrafficPD.com

Connect with us!

*Celebrating our Silver Anniversary: 25 Years of Service*

Twp. 610-356-4040

# TOWNSHIP OF MARPLE

Fax 610-356-8751

**Board of Commissioners**

Michael K. Molinaro, President
John J. Lucas, Vice President
Joseph A. Rufo
Jan G. Ceton
Robert Fortebuono
John R. Longacre, II
Daniel D. Leefson

Anthony T. Hamaday
**Township Manager**

Sharon L. Angelaccio
**Township Secretary**

J. Adam Matlawski, Esq.
**Township Solicitor**

227 South Sproul Road
Broomall, PA 19008-2397
www.marpletwp.com

John P. Capuzzi, Jr.
**Treasurer**

Kathleen M. Yanoshak
**Controller**

Edward E. O'Lone, CPA
**Director of Finance**

Joseph C. Romano
**Director of Code Enforcement**

Edward T. Cross
**Director of Public Works**

Joseph A. Mastronardo, P.E.
**Township Engineer**

Jan G. Ceton
**Emergency Management Coordinator**

February 3, 2015

MRPL 0132

Anthony Hamaday, Township Manager
Marple Township
227 S. Sproul Road
Broomall, PA 19008

**RE: Transportation Impact Study**
**Cardinal Crossings – S. Sproul Road & Reed Road**

Dear Mr. Hamaday:

As requested, we have reviewed the *"Cardinal Crossings Transportation Impact Study,"* prepared by Traffic Planning and Design, Inc. (TPD), dated November 5, 2014 in connection with the referenced project.

The applicant, Goodman Properties, proposes to develop the property bordered by Sproul Road (S.R. 0320), Reed Road and the Blue Route (S.R. 0476) for the following purposes:

- 120 single-family homes
- 230 townhomes
- 150-room Hotel
- 55,000-square-foot multiplex movie theater
- 80,000-square-foot recreational community center
- 150,000 square-feet of general office space
- 690,000 square-feet of general retail space
- Convenience store including a sixteen (16) pump fueling station

Access to the site is proposed to be provided by two (2) new driveways onto Sproul Road, one (1) shared driveway with Cardinal O'Hara onto Sproul Road, four (4) new driveways onto Reed Road and one (1) shared extension of the existing driveway for the shopping center on Reed Road.

Transportation improvements are proposed to support the development, which include road widening, turning lane additions, signal modifications, and restriping for the surrounding roadways and intersections; including Sproul Road, Reed Road, Parkway Road, Lawrence Road, Springfield Road, Old Marple Road, and Eagle Road.

The following review provides preliminary comments for the type and intensity of development assumed and assessed in the referenced Transportation Study. Marple Township has not received a Preliminary or Final Land Development Plan application for the proposed development, nor is the development consistent with the Township's Comprehensive Plan and current zoning for the property. The following comments are intended to provide guidance in preparation of a final study, required to be submitted concurrent with a Preliminary and/or Final Land Development Plan application.

We offer the following comments:

1. The site plan provided in Figure 1 of the study shows a proposed access off of Reed Road in the area of Marpit Drive; however the analysis does not reflect this access. The analysis should be revised to include this access point. The access should be aligned directly across from Marpit Drive.

2. The calculated internal capture percentages provided in the report utilize the Unconstrained Trip Capture Rates obtained from FDOT through the *Trip Internalization in Multi-Use Developments* by Center for Urban Transportation Research, April 2014. Per NCHRP Report 684, the unconstrained internal trip capture rates should be adjusted for proximity among other things. Additionally, it appears that free-standing restaurants are included within the site. Per NCHRP Report 684, the internal capture rates treat retail and restaurant as separate land uses and should be calculated separately. If the applicant wishes to use these rates, the internal capture percentages should be recalculated in accordance with the procedures outlined in NCHRP Report 684.

3. The capacity analysis does not reflect the information shown on the permit plans and/or field data at the Sproul Road (SR 0320) & State Road (SR 0001) intersection. The permit plan indicates that the eastbound and westbound State Road approaches include dual left turn lanes (separate left turn and shared left/through lanes). Please revise the analysis accordingly.

4. The level of service (LOS) analysis conducted at the proposed development's Site Access Driveways intersecting Sproul Road (SR 0320) show that several movements are projected to operate at LOS F with the inclusion of the development site traffic. The report should be revised to provide recommendations to achieve acceptable LOS for all movements at the proposed development's site access intersections.

5. The applicant proposes improvements to the local area road network to mitigate the development's site traffic impacts at several study intersections. The proposed

improvements are listed in Tables V and 14 in the report. However, there are several intersections that are shown to drop in overall LOS with the inclusion of the proposed development's site traffic. Improvements recommended at these locations range from signal timing adjustments to additional turn lanes. The following locations do not meet the mitigation requirements:

a. Sproul Road (SR 0320) & Springfield Road (SR 1009)
b. Sproul Road (SR 0320) & State Road (SR 0001)
c. Sproul Road (SR 0320) & Crum Creek Road – Reed Road
d. Springfield Road (SR 1009) & State Road (SR 0001)
e. Lawrence Road (SR 1020) & Parkway Avenue

An analysis should be conducted to determine what improvements would be required to mitigate the impacts of the development's site traffic at these locations, or other potential improvements to the area roadway network that would facilitate the anticipated development traffic. If adequate improvements cannot be identified, the applicant should consider reducing the size and/or intensity of the development and/or establishing an alternate transportation plan, acceptable to PennDOT and the Township.

6. Due to deficiencies indicated at major intersections along the State Road and Sproul Road corridors, the study scope should be expanded to include the evaluation of impacts to potential alternative routes to access the project site, specifically Reed Road via Burmont-Eagle Road in Haverford Township and Reed Road via West Rolling-Eagle Road in Springfield Township.

7. Based on the 95$^{th}$ percentile queue analysis results, there are several locations where the queue length is increased with the proposed development's site traffic and exceeds the existing/proposed storage length and/or extends into adjacent intersections. The report should be revised to provide recommendations to mitigate the impacts of the proposed site development for the following locations:

a. Sproul Road (SR 0320) & Lawrence Road
b. Sproul Road (SR 0320) & Williamsburg Drive
c. Sproul Road (SR 0320) & Crum Creek Road/Realigned Reed Road
d. Sproul Road (SR 0320) & Cemetery Driveway/Don Guanella Driveway
e. Sproul Road (SR 0320) & Springfield Road (SR 1009)
f. Sproul Road (SR 0320) & Old Marple Road (consider the addition of a southbound right-turn lane)
g. Sproul Road (SR 0320) & State Road (SR 0001)
h. Springfield Road (SR 1009) & State Road (SR 0001)
i. Springfield Road (SR 1009) & Eagle Road
j. Lawrence Road & Parkway Avenue
k. Reed Road & Eagle Road

If you have any questions or concerns, please feel free to contact the undersigned.

Sincerely,

Joseph A. Mastronardo, PE
Senior Engineer
**PENNONI ASSOCIATES INC.**
Township Engineers

JAM/bw

cc: Joe Romano, Director of Code Enforcement
Adam Matlawski, Esq., Township Solicitor
Fran Hanney, PennDOT 6-0
Matthew Hammond, PE – Traffic Planning and Design, Inc.
Bruce Goodman, Goodman Properties

P:\Projects\MRPL\0132- Goodman-Cardinal Crossings\TRAFFIC\TIS comments 2015-02-03-FINAL.docx

pennsylvania
DEPARTMENT OF TRANSPORTATION
www.dot.state.pa.us

December 29, 2014

MARPLE TOWNSHIP, DELAWARE COUNTY
S.R. 0320 (SPROUL ROAD)
HIGHWAY OCCUPANCY PERMIT APPLICATION NO. 1074
CARDINAL CROSSING
TRAFFIC LOG NO.: D14-021XQ
**PRELIMINARY REVIEW**

Matthew I. Hammond PE
Traffic Planning and Design, Inc.
2500 East High Street, Suite 650
Pottstown, PA 19464

Dear Mr. Hammond:

The Department has reviewed the preliminary submission for compliance with applicable Department Regulations. This preliminary review has identified deficiencies that must be addressed in order for your submission to be processed as efficiently as possible.

The Department understands that the provided analysis is preliminary in nature. As such, the Department reserves the right to make future additional comments based on the formal submission of a complete Transportation Impact Study (TIS).

Our comments on your preliminary submission are as follows:

**PRELIMINARY COMMENTS**

1. The PennDOT project number, D14-021XQ, for this preliminary review must be referenced when the formal Highway Occupancy Permit (HOP) application is submitted.
2. Department guidelines require that the overall intersection level of service with development be at least equivalent to the Level of Service (LOS) without development, or that the change in delay shall not exceed 10-seconds of additional delay, for the opening year and horizon year projected condition. As presented the Study identifies four intersections without necessary improvements to mitigate the development traffic impact:
    - S.R. 0320 (Sproul Road) and S.R. 1009 (Springfield Road)
    - S.R. 0320 (Sproul Road) and S.R. 0001 (State Road)
    - S.R. 1009 (Springfield Road) and S.R. 0001 (State Road)
    - S.R. 1020 (Lawrence Road) and Parkway Avenue

If mitigation/acceptable levels of service cannot be achieved for the overall level of service, an approved local or alternative transportation plan must be provided or a level-of-service design waiver, in accordance with Pennsylvania Code, Title 67, Chapter 441.5(e), must be submitted for consideration along with a detailed description of the remedy necessary to mitigate the impact of the development and clearly identifying the constraints making the implementation of the improvements infeasible.

3. In addition to the intersections where the LOS standard is not met, the following deficient operation identified in the Study should be addressed:

   a. S.R. 0320 (Sproul Road)/Crum Creek Road/Realigned Reed Road – This modified intersection is projected to operate with numerous deficient movements during the all three peak periods under proposed condition. This includes northbound and/or southbound queues projected to extend through adjacent intersections.

   b. S.R. 0320 (Sproul Road) at North Cemetery Driveway/Proposed Main Site Driveway and Southern Cemetery Drive/Proposed Site Driveway – The northbound and/or southbound through movements operate in a deficient manner during all three peak periods under proposed conditions. The northbound queues at the Main Driveway are projected to extend to the Cardinal O'Hara Main Driveway and the Springfield Road intersection during the morning and Saturday peak hours; during the evening peak the queues will extend beyond the Southern Driveway. Additionally, the southbound left at the Main Driveway will exceed the proposed storage by 250 feet during the Saturday peak hour.

4. Auxiliary lane warrant analyses should be provided for S.R. 0320 (Sproul Road) and Williamsburg Drive/Shopping Center to determine if the existing northbound right turn lane (proposed to be converted to through/right under post-development conditions) should be replaced.

5. Schematic concept plans should be provided for all improvements, both proposed and those assumed to be infeasible.

6. Verify the number of proposed accesses to Reed Road; there appears to be a discrepancy between the Study and the site plan.

7. Provide additional information regarding the crashes at Lawrence Road and Parkway Avenue, including the types of crashes and potential patterns over the five year period. Please note that as part of the formal permit application intersection collision diagrams will be required to be in the Signal Design report.

8. Confirm that the approval status of the assumed background developments and include trip generation information for each background development in the appendix, as well as excerpts from the respective traffic impact studies if available.

9. Coordinate with the applicable Townships to determine when the current signal timings were implemented; if the timings are recent they should be used "as-is" for the evaluation of future pre-development conditions.

10. The internal capture rates for this development used the Center for Urban Transportation Research, Trip Internalization in Multi-Use Developments, April 2014 which is slightly different than the ITE Trip Generation Handbook, 3rd Edition. It is not anticipated that changes to the internal capture presented in the report will materially affect the results presented; therefore it will be accepted for purposes of this study. Note that the ITE Trip Generation Handbook, 3rd Edition should be used for all future development submissions.

11. The following comments relate to the distribution of new trips and the gravity model information provided in Appendix H:

    a. Provide additional information on the anticipated market area served by the proposed development and verify if the development is anticipated to draw from a larger area than the 10 mile radius, particularly along the I-476 corridor.

    b. The gravity model for the residential component of the development should be based on employment data rather than population data. Provide a separate distribution for the residential portion of the development.

    c. Verify the travel routes assumed for each municipality, including <u>but not limited to</u> Haverford Township.

    d. The distribution to S.R. 1020 (Lawrence Road) appears to be high relative to S.R. 0001 (State Road) to and from the east.

    e. The municipalities near the bottom of the Relative Percentage Using Routes spreadsheet appear to be mislabeled.

    f. Verify the routes currently assumed for trips on S.R. 1020 (Lawrence Road); Reed Road appears a more attractive route that S.R. 0320 (Sproul Road).

12. Ensure that the pass-by volumes entering and exiting the site for the morning and evening peak hours are consistent between Table 7 and all figures.

13. Revise the Synchro analysis as appropriate to address the following:

    a. Verify the heavy vehicle percentages used in the morning and evening peak analyses for S.R. 0320 (Sproul Road) and S.R. 0001 (State Road); it appears that right-turn on reds may have been included in the heavy vehicle percentage.

    b. Ensure that buses are included in the heavy vehicle percentage for S.R. 0320 (Sproul Road) and S.R. 1020 (Lawrence Road) in the morning peak.

    c. Verify the number of westbound receiving lanes modeled at S.R. 1009 (Springfield Road) and S.R. 0001 (State Road).

    d. Verify that the lane configuration used for the S.R. 1020 (Lawrence Road) approach to S.R. 0320 (Sproul Road) under existing and background conditions are consistent with the approved signal permit and existing conditions.

    e. Under the future improved conditions the lane utilization of the S.R. 0320 (Sproul Road) northbound through at Williamsburg Drive/Shopping Center should be modified to account for the upstream lane drop (into a right turn lane) at S.R. 1020 Lawrence Road.

f. Under future conditions evaluate if protected/prohibited left turn phasing is warranted for S.R. 0320 (Sproul Road) at:

   i) Realigned Reed Road/Crum Creek Road

   ii) Proposed Main Site Driveway/North Cemetery Driveway

   iii) Proposed Site Driveway/Southern Cemetery Drive

   iv) S.R. 1008 (Old Marple Road)

g. Ensure that S.R. 0320 (Sproul Road) and S.R. 1008 (Old Marple Road) is modeled as coordinated with the intersections to the north for all periods using a consistent cycle length.

h. Re-evaluate the cycle length used for the proposed condition at S.R. 1020 (Lawrence Road) and Parkway Avenue during the morning peak; a longer cycle length may improve operations.

i. Re-evaluate the use of split phasing for modified intersections.

14. Verify the existing and proposed storage lengths; the study must address all locations where the future queues exceed the proposed storage or distance between intersections.

15. Consideration of the recommendation to install a traffic signal at S.R. 2009 (Springfield) and S.R. 2008 (Old Marple Road) requires additional coordination with the Township.

16. As indicated in the August 14, 2014 meeting minutes, provide documentation of coordination with SEPTA regarding bus stop locations and pedestrian accommodations.

17. With respect to the access design and formal permit application, please ensure that the following items are addressed:

    a. The proposed scope of work must ensure pedestrian access into the site and compliant, accessible crossings at the signalized site driveways. Sidewalks should be provided along the site frontage.

    b. Consistent with current Department Policy, applicants for a HOP must apply for an EPS Business Partner ID (BPID). The BPID is to be used in the establishment of a billing account for the invoicing of inspection costs. Information on obtaining a BPID is listed below:

       **https://www.dot14.state.pa.us/EPS/home/manageBPRegistration.jsp**

       *[Please make sure that you follow the instructions that are in the "PINK" area].* After a BPID is obtained and activated by the system administrator, please provide the following information in the applicant contact information tab under "Applicant Team":

       i) BPID (please ensure that the BPID is searchable through the "looking glass" feature)

       ii) Contact information (name/title/phone/email) for a "general" contact person (person that typically deals with the Highway Occupancy Permit application process)

       iii) Contact information (name/title/phone/email) for a "billing" contact person (person that typically deals with the Highway Occupancy Permit invoicing process)

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the formal submission and application for a Highway Occupancy Permit. If you have any questions pertaining to the technical aspects of this review, please contact Albert Federico, P.E., PTOE of McCormick Taylor, Inc. at 215.592.4200 or apfederico@mtmail.biz.

Respectfully,

Francis J. Hanney
District Traffic Services Manager
Engineering District 6-0

cc: M. Miele
L.R. Belmonte
Traffic Services File
Marple Township
Delaware County Planning Commission

## Bressler, Matt

**From:** Joseph Mastronardo <JMastronardo@Pennoni.com>
**Sent:** Friday, September 19, 2014 9:59 AM
**To:** Bressler, Matt; Brian Keaveney
**Cc:** Hammond, Matt
**Subject:** RE: Don Guanella - Scoping

Matt, the following potential projects should be included:

1. Marple Associates – retail shopping center and office at Langford Road and West Chester Pike/Lawrence Road (TIS and HOP recently approved by PennDOT).
2. Crozer Cancer Center – (Old Pathmark grocery store at Lawrence Road and West Chester Pike)
3. Ravenscliff Phase 4 – Assisted Living Facility (Recently subdivided parcel off the Archdiocese Cemetery; access from Crum Creek Road).

Feel free to contact me with any questions or concerns.

Thank you,
Joe

**Joseph Mastronardo, PE**
**Pennoni Associates Inc.**
**Main** 215-222-3000 x7758 | **Direct** 215-254-7758
**Fax** 215-222-0598 | **Mobile** 215-239-4977

---

**From:** Bressler, Matt [mailto:mbressler@trafficpd.com]
**Sent:** Thursday, September 18, 2014 12:55 PM
**To:** Joseph Mastronardo; Brian Keaveney
**Cc:** Hammond, Matt
**Subject:** RE: Don Guanella - Scoping

Joe/Brian

Following up on the email below. We are getting our counts back and will be starting the TIS soon.

Thanks.

**Matthew Bressler**
*Project Manager*
Traffic Planning and Design, Inc. (TPD)
610.326.3100

---

**From:** Bressler, Matt
**Sent:** Wednesday, August 27, 2014 1:25 PM
**To:** 'Joseph Mastronardo'; bkeaveney@pennoni.com

**Cc:** Hammond, Matt
**Subject:** Don Guanella - Scoping

Joe/Brian:

After the scoping meeting, you eluded to the fact that there may be 1-2 nearby developments in Marple Township that we should include in our TIS. Can you forward along that information at your convenience? Thanks in advance.

**Matthew Bressler**
*Project Manager*

Traffic Planning and Design, Inc. (TPD)
2500 E. High Street, Ste 650
Pottstown, PA 19464
P: 610.326.3100

www.TrafficPD.com

Connect with us!

*Celebrating our Silver Anniversary: 25 Years of Service*

TRAFFIC PLANNING AND DESIGN, INC.
Est. 1989
2500 E. High Street | Suite 650 | Pottstown, PA | 19464
610.326.3100 | TPD@TrafficPD.com

# Meeting Minutes

RE: Cardinal Crossing (Don Guanella Property)
Sproul Road (S.R. 0320) & Reed Road
Marple Township, Delaware County, PA

Meeting Date: August 14, 2014

Minutes Prepared: August 20, 2014

Location: PennDOT District 6-0 Offices

Attendees:
Fran Hanney, PennDOT 6-0 (FH)
Brian Keaveney, Pennoni (BK)
Joe Mastronardo, Pennoni (DS)
Al Federico, McCormickTaylor (AF)
Anthony Hamaday, Marple Township (AH)
Bruce Goodman, Goodman Properties (BG)
Adam Goodman, Goodman Properties (AG)
Chris Anderson, Goodman Properties (SA)
Robert Irons, Bohler Engineering (RI)
Jeff Cohen, CBRE/Fameco (JC)
Dennis McCarthy, Pineville Propertes (DM)
Paul Harris, PH&C (PH)
Matt Hammond, Traffic Planning and Design (MH)
Matt Bressler, Traffic Planning and Design (MB)

Notes Prepared by: Matt Hammond, TPD

---

A scoping meeting was held between the stakeholders to discuss the issues pertaining to the proposed Cardinal Crossing (Don Guanella Property) development. Particularly, the discussion pertained to the PennDOT Scoping Review Letter, dated August 6, 2014.

The following is a summary of the discussion(s):

- The PennDOT job number of this project is D14-021.
- MH gave an introduction to the current status of the project. This introduction included a general statement that the Project Team had no issues with the August 6, 2014, Scoping Review Comments.
- MH presented a preliminary aerial depicting the anticipated improvements along Sproul Road (S.R. 0320). These improvements included, but were not limited to:
    - Realignment of Reed Road, to align with Crum Creek Road.

- Signalization of the intersection of Sproul Road/Proposed Driveway/Cemetery Driveway.
- 2nd Signal (potential) at Sproul Road and a 2nd Proposed Driveway to the south adjacent to Cardinal O'Hara High School.
- Restriping lanes along Sproul Road where there are existing lane drops (at Springfield Road).
- Capacity improvements at Sproul Road/Old Marple Road.

- FH stated that he is optimistic about the project, as the applicant appears to be willing to work with DOT and are willing to provide certain roadway improvements. However, Fran wanted input from the Township.
- FH asked what the separation was for the 2nd proposed signal along Sproul Road.
- MH stated the separation was approximately 800 feet. There are wetlands in this area that limit the possible location of this driveway.
- FH asked whether the project team and the Township knew the history of the intersection of Sproul Road and Old Marple Road in terms of potential improvements discussed in the past.
- MH remembered there were ROW constraints at the intersection. The aerial plan depicts left-turn lanes on Sproul Road.
- JM stated that the intersection needed additional lanes as this intersection acts as a bottle-neck.
- AH talked about previous discussions relating to a right turn lane on eastbound Old Marple Road.
- FH confirmed that he can only ask the applicant to mitigate their impact. What is the Township's priority? Lanes or Upgraded Signal System?
- AH stated the priority would be left-turn lanes, as Sproul Road backs up when there is even one left-turn vehicle waiting at the intersection.
- AH stated that the Township has funding for these left-turn lanes. About $170k from the Ravenscliff Subdivision.
- AF asked why the realignment of Reed/Crum Creek was a priority? What is the history?
- AH answered that the offset makes it nearly impossible to make a left-turn onto Sproul Road. This results in cutting thru adjacent residential developments, to Williamsburg Road and Paxon Hollow Road. Traffic calming measures are already in place in these neighborhoods.
- BG added that one of the possibilities of the 2nd access on Sproul Road was to allow access consolidation with Cardinal O'Hara.
- AF and FH liked the idea of access consolidation if possible.
- MH confirmed that the project team was in preliminary discussions with DEP with regard to the location of the 2nd access on Sproul Road.
- BG confirmed the configuration of the 2nd access internally on the aerial, with relation to the stream on the site.
- PH asked what was the ROW issue at Sproul and Old Marple?

- MH stated that there were existing businesses on the corner.
- FH confirmed that the applicant will need sign-offs from adjacent property owners for the left turn lanes proposed on Sproul Road at Old Marple Road.
- AH confirmed there were issues previously during the Ravenscliff Subdivision. However, there may be additional ROW on the Water Company side.
- FH asked whether the Township had relationships here to help the applicant acquire the required ROW?
- AH confirmed they did.
- AF asked whether the carwash had access outside of Sproul Road?
- MH stated that the Car Wash does have access to Old Marple Road to the rear.
- BG asked what legal authority the applicant has with the adjacent property owners?
- MH stated the applicant could offer permitting of their driveway.
- AF asked whether there was a crash history at Sproul and Old Marple?
- MH stated we would find out as part of the TIS. In addition, TPD has contacted Paul Lutz to obtain recent counts in the study area. School is going back in a few weeks. Next step is to get data collection underway and commence with the TIS and preliminary concept plans.
- MH asked whether everyone was ok with the intersections outlined in the scoping application?
- BK and FH were ok with the intersections.
- AF asked whether the Township wanted Parkway/Lawrence or Reed/Burmont added?
- BK and JM asked TPD to add Parkway/Lawrence intersection to the study area. In addition, the Township will want Sproul/State and Springfield/State added as well.
- AH confirmed that schools go back on September 2. Not sure about Cardinal O'Hara's schedule.
- FH asked whether the project will be phased?
- BG confirmed that the project will not be phased. However, the residential portion will be done by another entity. There is a lot of grading to do on-site.
- DM confirmed that the project will not be phased, however the full-occupancy of the residential may be 5-7 years off.
- MH asked whether Marple Township could be a co-applicant on the storm water management if needed?
- AH and JM confirmed the Township is aware of this PennDOT requirement.
- JC stated that there are some minor issues to work through. However, the Archdiocese is generally ok with the project at this point.
- FH and AF asked what the Applicant is doing regarding pedestrians and transit accommodations with SEPTA.

- BG asked what the Township wanted. Do they want to encourage pedestrian activity along Sproul Road?
- JM stated yes, preliminarily.
- BG asked whether these improvements should be along the frontage only.
- AF stated that it depends on the site's impacts on SEPTA's bus stop locations. The applicant needs to reach out to SEPTA.
- MH stated that pedestrian facilities make sense along the site frontage, but how do we get pedestrians across the Sproul Road bridge over SR 0476?
- AH confirmed there already is pedestrian activity in this area from Don Guanella and Cardinal O'Hara.
- FH stated that the Sproul Road crossings along the site frontage make sense.
- FH confirmed the next step is a TIS/Concept Plans/Coordination with SEPTA.
- FH asked whether coordination was needed with the County.
- AF stated that the County would probably appreciate it given the size of the project and the County Planning Commission should be included in future meetings.
- AH asked that the Reed Road realignment design account for heavy vehicles. A large percentage of the county's industrial uses are located along Reed Road. The county pays the Township $25k per year for upkeep of Reed Road.
- There was discussion regarding stormwater drainage for the site.
- RI stated that the drainage would not be directed towards I-476.
- MH asked if the Township would object to being co-applicant on the stormwater system if required as part of the future design (PennDOT Municipal Maintenance Application).
- BK/JM/AH are aware of the PennDOT Municipal Maintenance Application and did not see any objections with being co-applicant if the design required the Township to be co-applicant.

**Summary**

- A number of roadway improvements were agreed to by all parties which would be constructed as part of the proposed development, as follows:
    - Re-alignment of Reed Road and Crum Creek Road to create a signalized 4-way intersection;
    - Align the main access of the proposed development with the main access of the existing Cemetery on Sproul Road and provide for auxiliary lanes and signalization;
    - Provide for a second full-access signalized (potential) driveway along the southern property line adjacent to Cardinal O'Hara High School;
    - Widen Sproul Road at Springfield Road to provide for two (2) southbound through lanes on addition to the southbound lane to Springfield Road;

  - Provide for northbound and southbound left turn lanes on Sproul Road at its intersection with Old Marple Road;
  - Provide for Pedestrian upgrades along the frontage of the proposed development subject to further discussions with PennDOT and Marple Township;
  - Signalization and ADA upgrades at adjacent intersections along Sproul Road.

- Marple Township/Pennoni would like the following intersections added to the scope of the future traffic study:
  - Parkway/Lawrence;
  - Sproul/State;
  - Springfield/State.
- Provide for a heavy-duty pavement section on relocated Reed Road to accommodate the heavy vehicles currently travelling on Reed Road;
- Work with Township/PennDOT/County on roadway improvements at the intersection of Sproul Road and Old Marple Road to accommodate the proposed northbound and southbound left turn lanes on Sproul Road;

**Next Steps**

- Prepare Traffic Impact Study for submission and review by PennDOT, Marple Township and Delaware County Planning Commission;
- Coordinate with SEPTA regarding bus stop locations and pedestrian accommodations;
- Further refinements to concept plan based on results of Traffic Impact Study.

Please provide any comments/corrections to these minutes within five (5) business days of the date of these minutes or TPD will assume they are considered final.

OS-2 (10-08)

pennsylvania
DEPARTMENT OF TRANSPORTATION
www.dot.state.pa.us

August 6, 2014

DELAWARE COUNTY, MARPLE TOWNSHIP
SR 0320 SPROUL ROAD
HIGHWAY OCCUPANCY PERMIT APPLICATION NO. PRE 1074
PROPOSED MIXED USE DEVELOPMENT
TRAFFIC LOG NO.: D14-021XP
**PRELIMINARY REVIEW**

Matthew J. Hammond, P.E.
Traffic Planning and Design, Inc.
2500 East High Street, Suite 650
Pottstown, PA 19464

Dear Mr. Hammond:

The Department has reviewed the preliminary submission for compliance with applicable Department Regulations. This preliminary review has identified deficiencies that must be addressed in order for your application submission to be processed as efficiently as possible.

The Department understands that the provided transportation impact analysis is preliminary in nature. As such, the Department reserves the right to make future additional comments based on a formal submission with a complete traffic impact study.

Our comments on your preliminary submission are as follows:

**PRELIMINARY COMMENTS**

1. The PennDOT project number, D14-021XP, for this preliminary review must be referenced if a formal HOP application is submitted.
2. The Department concurs with the following information provided in the Scoping Application document:
    a. Study area
    b. Trip generation, except for the total trips provided for the Medical Office for the AM and PM peak periods. These two numbers should be reviewed to verify if correct.
3. The multi-use credit is still under consideration, pending coordination with Central Office on the acceptability of the Florida Department of Transportation Study.
4. Based on the size of the development and location of regional roadways, trip distribution via a gravity model may be warranted.
5. Confirm whether the existing Don Guanella facility will be relocated on-site.
6. Clarify if the northern access shown on the concept plan on Sproul Road is the realigned Reed Road and Crum Creek Road intersection or a fourth access to the site.

7. In evaluating existing and future conditions and operations, note the following:
    a. The unusual traffic signal operations at Sproul Road and Springfield Road where the southbound lane staying on SR 320 has a continuous green while the lane to Springfield is signal controlled. Also there are no northbound rights from SR 320 to Springfield.
    b. There is a significant sight distance obstruction (wall of a Quaker cemetery) on the southwest quadrant of Springfield Road and Old Marple Road.
8. Signal equipment upgrades and coordinated system installation/upgrades may be necessary to mitigate the impacts of the development.
9. Please be advised, due to this projects large size, location, and phased implementation the Department will require post occupancy traffic analysis for the purpose of providing the most efficient signal timing and/or to address any unforeseen operational issues.
10. Provide an update on status of municipal approvals to verify that the 2020 build out date is reasonable for a project of this magnitude.
11. Coordinate with the Township regarding the need for sidewalks along the site roadway frontage. A Pedestrian Study will be required for all proposed signalized intersections and ADA accessibility must be provided where applicable.
12. Provide Meeting Minutes from the July 1, 2014 meeting with the Department.

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the formal submission and application for a Highway Occupancy Permit. If you have any questions pertaining to the technical aspects of this review, please contact Albert Federico, P.E., PTOE of McCormick Taylor, Inc. at 215.592.4200 or apfederico@mtmail.biz.

Respectfully,

Francis J. Hanney
District Traffic Services Manager
Engineering District 6-0

cc: L.R. Belmonte
A.B. Patel
M. Miele
Traffic Services File
Marple Township
Delaware County Planning Commission

TRAFFIC PLANNING AND DESIGN, INC.
Est. 1989
2500 E. High Street | Suite 650 | Pottstown, PA | 19464
610.326.3100 | TPD@TrafficPD.com

July 14, 2014

Mr. Fran Hanney
District Traffic Services Manager
PennDOT District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406-1525

RE: **Transportation Impact Study (TIS) Scoping Application**
Don Guanella Village
Marple Township, Delaware County, PA
TPD# GMP.A.00030

Dear Fran:

On behalf of Goodman Properties, Traffic Planning and Design, Inc. (TPD) has prepared the following TIS Scoping Application for the above referenced project. This information has been compiled in accordance with the application procedures outlined in Strike-Off Letter 470-09-4, dated February 12, 2009.

*Potential Scoping Meeting Date:* TBD
*Applicant:* Goodman Properties – Bruce Goodman
*Applicant's Consultant:* Traffic Planning and Design, Inc. (TPD)
*Applicant's Primary Contact:* Matthew Hammond, P.E.

1. *LOCATION OF PROPOSED DEVELOPMENT:*
   PennDOT Engineering Dist: 6-0 County: Delaware
   Municipalities: Marple Township
   State Route(s) (SR)/Segment(s): Sproul Road (SR 0320)/0170-0171

   Please refer to the attached **Figure 1** which shows the project location.

2. *DESCRIPTION OF PROPOSED DEVELOPMENT:*
   - Proposed Site Access:
     - Two (2) Full-Access Driveways to Sproul Road (S.R. 0320)
     - One (1) RI/RO Driveway to Sproul Road (S.R. 0320)
     - Three (3) Full-Access Driveways to Reed Road (potential)
   - Proposed Land Uses: ITE Land Use Codes as follows:
     - # 210 – Single-Family Homes – 150 dwelling units
     - # 230 – Townhomes – 150 dwelling units.
     - # 310 – Hotel – 150 rooms.
     - # 445 – Multiplex – 55,000 s.f.
     - # 720 – Medical Office – 150,000 s.f.
     - # 820 – General Retail – 845,000 s.f.

- Community Linkages (access to neighboring properties, cross easements, pedestrian and transit accommodations): It is TPD's understanding that, the existing Don Guanella facility located along Sproul Road (S.R. 0320), may be relocated somewhere within the proposed site, but within a smaller facility.

  Please refer to the attached **Figure 2** which shows the preliminary site plan.

3. *DEVELOPMENT SCHEDULE AND STAGING:*
   - Anticipated Full Build-out Date: 2020
   - Anticipated Design Year: 2025
   - Proposed Development/Staging: Phasing TBD

4. *TRIP GENERATION:*

   Trip generation for the proposed development will be based on:

   ☒ ITE Trip Generation Manual.
   ☐ Other independent surveys.

**TABLE 1**
**PROPOSED SITE**
**TRIP GENERATION DATA**

| Time Period | Rates | Entering | Pass-By |
|---|---|---|---|
| **ITE #210 – Single-Family Homes** | | | |
| Average Weekday | Ln(T) = 0.92*Ln(X) + 2.72 | 50% | N/A |
| Weekday A.M. | T = 0.70*(X) + 9.74 | 25% | 0% |
| Weekday P.M. | Ln(T) = 0.90*Ln(X) + 0.51 | 63% | 0% |
| Saturday Midday | T = 0.89*(X) + 8.77 | 54% | 0% |
| **ITE #230 – Townhomes** | | | |
| Average Weekday | Ln(T) = 0.87*Ln(X) + 2.46 | 50% | N/A |
| Weekday A.M. | Ln(T) = 0.80*Ln(X) 0.26 | 17% | 0% |
| Weekday P.M. | Ln(T) = 0.82*Ln(X) + 0.32 | 67% | 0% |
| Saturday Midday | T = 0.29*(X) + 42.63 | 54% | 0% |
| **ITE #310 – Hotel** | | | |
| Average Weekday | T = 8.95*(X) + 373.16 | 50% | N/A |
| Weekday A.M. | T = 0.54*(X) | 59% | 0% |
| Weekday P.M. | T = 0.60*(X) | 51% | 0% |
| Saturday Midday | T = 0.69*(X) + 4.32 | 56% | 0% |
| **ITE #445 – Multiplex** | | | |
| Average Weekday | T = 63.10*(X)[1] | 50% | N/A |
| Weekday A.M. | N/A | N/A | N/A |
| Weekday P.M. | T = 4.91*(X) | 62% | 0% |
| Saturday Midday | T = 4.70*(X) | 75% | 0% |
| **ITE #720 – Medical Office** | | | |
| Average Weekday | T = 40.89*(X) – 214.97 | 50% | N/A |
| Weekday A.M. | T = 2.39 *(X) | 79% | 0% |
| Weekday P.M. | Ln(T) = 0.90*Ln(X) + 1.53 | 28% | 0% |
| Saturday Midday | T = 3.63 *(X) | 57% | 0% |
| **ITE #820 – General Retail** | | | |
| Average Weekday | Ln(T) = 0.65*Ln(X) + 5.83 | 50% | N/A |
| Weekday A.M. | Ln(T) = 0.61*Ln(X) + 2.24 | 62% | 24%[2] |
| Weekday P.M. | Ln(T) = 0.67*Ln(X) + 3.31 | 48% | 34% |
| Saturday Midday | Ln(T) = 0.65*Ln(X) + 3.78 | 52% | 26% |

T = Total Trips, X = independent variable (dwelling units, ksf, flelds, rooms)
1 = No ITE Data for the Independent Variable, Rate based on a ratio of Movie Screen Data
2 = No ITE Data, Utilized PM Minus 10%

It should be noted that in **Table 1**, if trip generation equations were available and resulted in a trip generation outside the standard deviation, trip generation rates were utilized.

*Interaction*

It is TPD's opinion that Multi-Use Interaction Reduction will occur between the proposed uses on site. For this purpose, TPD utilized methodologies outlined by ITE and Florida DOT, where applicable for each land use and time period. The performed interaction between the proposed uses determined the following resultant interaction percentages:

- Average Weekday = 9% (ITE)
- Weekday A.M. = 18% (FDOT)
- Weekday P.M. = 12% (ITE and FDOT)
- Saturday Midday = 7% (ITE)

Florida DOT Interaction Data is attached for reference. Interaction worksheets are also included for reference.

The trip generation of the proposed site is shown in **Table 2**.

**TABLE 2**
**TRIP GENERATION – PROPOSED SITE**

| Land Use | Size (X) | Total Trips | Int. Trips | Ext. Trips | Pass-By Trips | | | New Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Total | Enter | Exit | Total | Enter | Exit |
| ***Average Weekday*** | | | | | | | | | | |
| Single-Family Homes | 150 du | 1526 | -564 | 962 | N/A | N/A | N/A | 962 | 481 | 481 |
| Townhomes | 150 du | 916 | -340 | 576 | N/A | N/A | N/A | 576 | 288 | 288 |
| Hotel | 150 rooms | 970 | 0 | 970 | N/A | N/A | N/A | 970 | 485 | 485 |
| Multiplex | 55 ksf | 3470 | 0 | 3470 | N/A | N/A | N/A | 3470 | 1735 | 1735 |
| Medical Office | 150 ksf | 5420 | -988 | 4432 | N/A | N/A | N/A | 4432 | 2216 | 2216 |
| General Retail | 845 ksf | 27190 | -1818 | 25372 | N/A | N/A | N/A | 25372 | 12686 | 12686 |
| ***TOTAL*** | | ***39492*** | ***-3710*** | ***35782*** | ***N/A*** | ***N/A*** | ***N/A*** | ***35782*** | ***17891*** | ***17891*** |
| ***Weekday AM*** | | | | | | | | | | |
| Single-Family Homes | 150 du | 115 | -38 | 77 | 0 | 0 | 0 | 77 | 19 | 58 |
| Townhomes | 150 du | 71 | -24 | 47 | 0 | 0 | 0 | 47 | 8 | 39 |
| Hotel | 150 rooms | 81 | -18 | 63 | 0 | 0 | 0 | 63 | 37 | 26 |
| Multiplex | 55 ksf | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Medical Office | 150 ksf | 386 | -61 | 325 | 0 | 0 | 0 | 325 | 256 | 69 |
| General Retail | 845 ksf | 573 | -81 | 492 | 118 | 59 | 59 | 374 | 246 | 128 |
| ***TOTAL*** | | ***1226*** | ***-222*** | ***1004*** | ***118*** | ***59*** | ***59*** | ***886*** | ***563*** | ***323*** |
| ***Weekday PM*** | | | | | | | | | | |
| Single-Family Homes | 150 du | 151 | -64 | 87 | 0 | 0 | 0 | 87 | 55 | 32 |
| Townhomes | 150 du | 84 | -35 | 49 | 0 | 0 | 0 | 49 | 33 | 16 |
| Hotel | 150 rooms | 90 | -16 | 74 | 0 | 0 | 0 | 74 | 38 | 36 |
| Multiplex | 55 ksf | 270 | -48 | 222 | 0 | 0 | 0 | 222 | 138 | 84 |
| Medical Office | 150 ksf | 536 | -66 | 470 | 0 | 0 | 0 | 470 | 132 | 338 |
| General Retail | 845 ksf | 2503 | -215 | 2288 | 778 | 389 | 389 | 1510 | 709 | 801 |
| ***TOTAL*** | | ***3634*** | ***-444*** | ***3190*** | ***778*** | ***389*** | ***389*** | ***2412*** | ***1105*** | ***1307*** |
| ***SAT Midday*** | | | | | | | | | | |
| Single-Family Homes | 150 du | 142 | -51 | 91 | 0 | 0 | 0 | 91 | 49 | 42 |
| Townhomes | 150 du | 86 | -31 | 55 | 0 | 0 | 0 | 55 | 30 | 25 |
| Hotel | 150 rooms | 108 | 0 | 108 | 0 | 0 | 0 | 108 | 60 | 48 |
| Multiplex | 55 ksf | 259 | 0 | 259 | 0 | 0 | 0 | 259 | 194 | 65 |
| Medical Office | 150 ksf | 545 | -97 | 448 | 0 | 0 | 0 | 448 | 255 | 193 |
| General Retail | 845 ksf | 3500 | -179 | 3321 | 864 | 432 | 432 | 2457 | 1295 | 1162 |
| ***TOTAL*** | | ***4640*** | ***-358*** | ***4282*** | ***864*** | ***432*** | ***432*** | ***3418*** | ***1883*** | ***1535*** |

X = Independent Variable (dwelling units, ksf, fields, rooms), Int. = Internal Capture Trips, Ext. = External Trips

5. *ESTIMATED DAILY TRIP GENERATION/DRIVEWAY CLASSIFICATION:*
   a. Estimated Daily Trip Generation of Proposed Development: 35782 trips/day – 17891 vehicles/day.
   b. Driveway Classification (Preliminary) Based on Trip Generation: Six (6) High-Volume Driveways

6. *TRANSPORTATION IMPACT STUDY REQUIRED?*
   ☐ No
   ☒ Yes, based on:
      ☒ 3,000 or more vehicle trips/day generated

☒ During any one-hour time period, 100 or more new (added) vehicle trips generated entering or 100 or more new (added) vehicle trips generated exiting development
☐ Other considerations as described below:

7. *TRANSPORTATION IMPACT ASSESSMENT REQUIRED?* ☒ **No** ☐ **Yes**

8. *TIS STUDY AREA:*
   - Sproul Road (S.R. 0320) & Existing Don Guanella/Cemetery Driveway;
   - Sproul Road (S.R. 0320) & Cardinal O'Hara Main Driveway;
   - Sproul Road (S.R. 0320) & Springfield Road (S.R. 2009);
   - Sproul Road (S.R. 0320) & Old Marple Road (S.R. 1008);
   - Sproul Road (S.R. 0320) & Crum Creek Road;
   - Sproul Road (S.R. 0320) & Reed Road;
   - Sproul Road (S.R. 0320) & Williamsburg Drive/Shopping Center Driveway;
   - Sproul Road (S.R. 0320) & Lawrence Road (S.R. 1020);
   - Springfield Road (S.R. 2009) & Eagle Road (S.R. 1006);
   - Springfield Road (S.R. 2009) & Old Marple Road (S.R. 1008);
   - Eagle Road (S.R. 1006) & Reed Road;
   - Parkway Avenue & Reed Road (West);
   - Park Way & Reed Road (East);
   - Reed Road & Marpit Drive.

9. *STUDY AREA TYPE:*
   Urban ☒ Rural ☐
   Per PennDOT's Functional Classification Map:

   Sproul Road (S.R. 0320) is defined as an Urban Principal Arterial;
   Springfield Road (S.R. 2009) is defined as an Urban Principal Arterial;
   Lawrence Road (S.R. 1020) is defined as an Urban Principal Arterial;
   Eagle Road (S.R. 1006) is defined as an Urban Minor Arterial;
   Old Marple Road (S.R. 1008) is defined as an Urban Collector;

10. *TIS ANALYSIS PERIOD AND TIMES:*
   **Peak Hours to be evaluated:**
   - Weekday A.M. peak hour (peak hour within the 7:00-9:00 A.M. peak period)
   - Weekday P.M. peak hour (peak hour within the 4:00-6:00 P.M. peak period)
   - Saturday Midday peak hour (peak hour within the 11:00 A.M.-1:00 P.M. peak period)

   **Study Years to be evaluated:**
   - 2014 Existing Conditions
   - Anticipated Full Build-out Date: 2020
   - Anticipated Design Year: 2025

*11. TRAFFIC ADJUSTMENT FACTORS:*

a. Seasonal Adjustment: N/A
b. Annual Base Traffic Growth: **0.51%** per year based on PennDOT's Bureau of Planning and Research (BPR) data pertaining to urban non-interstate roadways in Delaware County.
c. Pass-By Trips: ITE
e. Captured Trips for Multi-Use Sites: ITE and FDOT
f. Modal Split Reductions: N/A
g. Other Reduction: N/A

12. *OTHER PROJECTS WITHIN STUDY AREA TO BE ADDED TO BASE TRAFFIC:*

TPD will account for any relevant nearby developments based on correspondence with Township Staff.

13. *TRIP DISTRIBUTION AND ASSIGNMENT:*

TPD recommends distributing and assigning trips to the surrounding roadways based upon an evaluation of the following: (1) existing traffic patterns, (2) the surrounding roadway network, and (3) the proposed site driveway locations.

*14. APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:*

New manual turning movement counts will be performed as part of this project where recent counts were not completed as part of the recent PennDOT Traffic Signal upgrades in the area. PennDOT iTMS Data has been attached for reference.

*15. CAPACITY/LOS ANALYSIS:*

SYNCHRO 8 will be utilized for existing and future conditions, utilizing HCM 2010 Methodology where feasible.

*16. ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:*

Based on a review of the DVRPC TIP and the PennDOT 12-Year Plan, it is TPD's understanding that there are no planned projects in the study area.

*17. OTHER NEEDED ANALYSES:*

a. Sight Distance Analysis: A sight distance analysis will be performed for the proposed site driveway locations.

b. Signal Warrant Analysis: As needed.

c. Required Signal Phasing/Timing Modifications: As needed.

d. Traffic Signal Corridor/Network Analysis: N/A

e. Analysis of the Need for Turning Lanes: TPD will analyze auxiliary turn lane warrants at the proposed site driveway intersections. The warrant analysis methodology contained within Chapter 11 of PennDOT's Publication 46 and Strike-Off Letter 470-08-07 will be

utilized for this analysis.

f. Turning Lane Lengths: As needed.

g. Left Turn Signal Phasing Analysis: As needed.

h. Queuing Analysis: TPD will analyze the 95$^{th}$ percentile queue lengths for all approaches of the study area intersection during the base and projected conditions. This analysis will be completed using SYNCHRO 8 software.

i. Gap Studies: As needed.

j. Crash Analysis: A crash analysis will be performed.

k. Weaving Analysis: N/A

l. Other Required Studies: N/A

*18. ADDITIONAL COMMENTS OR RECOMMENDATIONS RELATIVE TO THE SCOPE OF THE TIS:*

Per preliminary discussions with the Department, certain potential/suggested roadway improvements have been conceptualized on an aerial plan and presented at a preliminary meeting held on July 1, 2014. These potential/suggested improvements include the following:

- Re-alignment of the existing Reed Road and Crum Creek Road intersection to create a 4-way signalized intersection to the south of the existing off-set intersection;
- Provide two (2) signalized full-access high-volume driveways to Sproul Road leading into the proposed development with dedicated right and left turn lanes;
- Widening on Sproul Road at its intersection with Springfield Road to allow for three (3) southbound approach lanes consisting of a southbound through lane to Springfield Road and two (2) southbound right-through lanes continuing on to Sproul Road;
- As part of the widening of the existing Springfield Road/Sproul Road intersection, provide a southbound dedicated left turn lane into the existing main access to Cardinal O'Hara High School;
- Widening of the Old Marple and Sproul Road intersection to provide for northbound and southbound Sproul Road left turn lanes.

We appreciate your review and feedback of the enclosed information. If there are any questions or comments, please call us at any time.

Respectfully submitted,

TRAFFIC PLANNING AND DESIGN, INC.

Matthew I. Hammond, P.E.
Executive Vice President

Attachments: Anticipated Meeting Attendee Contact List
Figure 1 – Proposed Study Area
Figure 2 – Proposed Site Plan
FDOT Interaction Data
Interaction Worksheets
PennDOT iTMS Data

cc: Anthony Hamaday, Marple Township Manager
Joseph Mastronardo, Pennoni Associates
Bruce Goodman, Goodman Properties
Chris Anderson, Goodman Properties
Adam Goodman, Goodman Properties
Dennis McCarthy, Pineville Properties
Rob Irons, Bohler Engineering
Bill Rearden, Bohler Engineering
Paul Harris, PH&C
Jim DeNave, DeNave Consulting
TPD File

# Transportation Impact Assessment (TIS)
# Proposed Don Guanella Village
# Scoping Meeting Application
# Potential Meeting Attendees

| NAME | COMPANY | PHONE# | EMAIL |
|---|---|---|---|
| Fran Hanney | PennDOT District 6-0 | (610) 205-6560 | fhanney@pa.gov |
| Anthony Hamaday | Marple Township Manager | (610) 356-4040 | N/A |
| Joseph Mastronardo | Pennoni Associates, Inc. | (610) 429-8907 | jmastronardo@pennoni.com |
| Bruce Goodman | Goodman Properties | (215) 885-8383 | bruce@goodmanproperties.org |
| Chris Anderson | Goodman Properties | (215) 885-8383 | chris@goodmanproperties.org |
| Adam Goodman | Goodman Properties | (215) 885-8383 | adam@goodmanproperties.org |
| Dennis McCarthy | Pineville Properties | (610) 983-0488 | dmccarthy@pinevilleproperties.com |
| Rob Irons | Bohler Engineering | (215) 996-9100 | rirons@bohlereng.com |
| Bill Rearden | Bohler Engineering | (215) 996-9100 | wrearden@bohlereng.com |
| Paul Harris | PH&C | (610) 637-2290 | paulharris@phandc.net |
| Jim DeNave | DeNave Consulting | (267) 402-0833 | dconsult@ptd.net |
| Matt Hammond | TPD | (610) 326-3100 | mhammond@trafficpd.com |

| SITE NO: 13407 | |
|---|---|
| County | DELAWARE (23) |
| Route | 0320 |
| Segment | 0170 |
| Dir | N |
| Current Avg Daily Traffic | 16177 |
| Current Avg Daily Truck Volume | 518 |
| K Factor | 9 |
| D Factor | 65 |
| T Factor | 6 |
| Truck Percent | 3 |
| Base Traffic Year | 2013 |
| Traffic Pattern Group | URBAN - OTHER PRINCIPAL ARTERIALS |

| SITE NO: 13407 | |
|---|---|
| County | DELAWARE (23) |
| Route | 0320 |
| Segment | 0171 |
| Dir | S |
| Current Avg Daily Traffic | 17818 |
| Current Avg Daily Truck Volume | 1679 |
| K Factor | 9 |
| D Factor | 65 |
| T Factor | 6 |
| Truck Percent | 9 |
| Base Traffic Year | 2013 |
| Traffic Pattern Group | URBAN - OTHER PRINCIPAL ARTERIALS |

| SITE NO: 4971 | |
|---|---|
| County | DELAWARE (23) |
| Route | G260 |
| Segment | 0100 |
| Dir | B |
| Current Avg Daily Traffic | 9079 |
| Current Avg Daily Truck Volume | 363 |
| K Factor | 11 |
| D Factor | 55 |
| T Factor | 2 |
| Truck Percent | 4 |
| Base Traffic Year | 2012 |
| Traffic Pattern Group | URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS |

| SITE NO: 4041 | |
|---|---|
| County | DELAWARE (23) |
| Route | G260 |
| Segment | 0080 |
| Dir | B |
| Current Avg Daily Traffic | 1485 |
| Current Avg Daily Truck Volume | 60 |
| K Factor | 11 |
| D Factor | 55 |
| T Factor | 2 |
| Truck Percent | 4 |
| Base Traffic Year | 2011 |
| Traffic Pattern Group | URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS |

| SITE NO: 25786 | |
|---|---|
| County | DELAWARE (23) |
| Route | 2009 |
| Segment | 0130 |
| Dir | B |
| Current Avg Daily Traffic | 8222 |
| Current Avg Daily Truck Volume | 576 |
| K Factor | 10 |
| D Factor | 55 |
| T Factor | 4 |
| Truck Percent | 7 |
| Base Traffic Year | 2013 |
| Traffic Pattern Group | URBAN - OTHER PRINCIPAL ARTERIALS |

| SITE NO: 15072 | |
|---|---|
| County | DELAWARE (23) |
| Route | 1006 |
| Segment | 0020 |
| Dir | B |
| Current Avg Daily Traffic | 8657 |
| Current Avg Daily Truck Volume | 260 |
| K Factor | 10 |
| D Factor | 70 |
| T Factor | 6 |
| Truck Percent | 3 |
| Base Traffic Year | 2012 |
| Traffic Pattern Group | URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS |

| SITE NO: 16024 | |
|---|---|
| County | DELAWARE (23) |
| Route | 1020 |
| Segment | 0020 |
| Dir | E |
| Current Avg Daily Traffic | 6339 |
| Current Avg Daily Truck Volume | 190 |
| K Factor | 11 |
| D Factor | 65 |
| T Factor | 1 |
| Truck Percent | 3 |
| Base Traffic Year | 2011 |
| Traffic Pattern Group | URBAN - OTHER PRINCIPAL ARTERIALS |

| SITE NO: 16024 | |
|---|---|
| County | DELAWARE (23) |
| Route | 1020 |
| Segment | 0021 |
| Dir | W |
| Current Avg Daily Traffic | 6662 |
| Current Avg Daily Truck Volume | 200 |
| K Factor | 11 |
| D Factor | 65 |
| T Factor | 1 |
| Truck Percent | 3 |
| Base Traffic Year | 2011 |
| Traffic Pattern Group | URBAN - OTHER PRINCIPAL ARTERIALS |

| SITE NO: 16124 | |
|---|---|
| County | DELAWARE (23) |
| Route | 1022 |
| Segment | 0020 |
| Dir | B |
| Current Avg Daily Traffic | 2591 |
| Current Avg Daily Truck Volume | 76 |
| K Factor | 11 |
| D Factor | 70 |
| T Factor | 1 |
| Truck Percent | 3 |
| Base Traffic Year | 2013 |
| Traffic Pattern Group | URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS |

# APPENDIX B

***STUDY AREA PHOTOGRAPHS***

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Lawrence Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Lawrence Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Lawrence Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Williamsburg/SC Driveway*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Williamsburg/SC Driveway*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Williamsburg/SC Driveway*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Williamsburg/SC Driveway*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Reed Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Reed Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Reed Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Crum Creek Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Crum Creek Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Crum Creek Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Cemetary/Don Guanella*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Cemetary/Don Guanella*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | |
| **Approach / Departure:** | |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Cemetary/Don Guanella*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Cemetary/Don Guanella*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Southern Cemetary*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Southern Cemetary*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Southern Cemetary*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Road & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & State Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & State Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & State Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & State Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Sproul Rd & Springfield Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Old Marple Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Springfield Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Lawrence Road & Parkway Avenue*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Lawrence Road & Parkway Avenue*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Lawrence Road & Parkway Avenue*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Lawrence Road & Parkway Avenue*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road/Redhill Drive & Parkway*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road/Redhill Drive & Parkway*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road/Redhill Drive & Parkway*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road/Redhill Drive & Parkway*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Lawrence Business Park*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Parkway Avenue*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Shopping Center Drive*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Marpit Drive*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Marpit Drive*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Marpit Drive*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Reed Road & Eagle Road*

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | |
| **Approach / Departure:** | |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Eagle Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Eastbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Eagle Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Westbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *10/04/14* *Intersection Of:* *Eagle Road & HS Driveway*

| | |
|---|---|
| **Direction / Road:** | **Southbound** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **Northbound** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *03/25/2015* *Intersection Of:* *Parkway ave & Westbourne dr*

| | |
|---|---|
| **Direction / Road:** | **EB Westbourne dr** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **EB Westbourne dr** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *03/25/2015* *Intersection Of:* *Parkway ave & Westbourne dr*

| | |
|---|---|
| **Direction / Road:** | **NB Parkway ave** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **NB Parkway ave** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *03/25/2015* *Intersection Of:* *Parkway ave & Westbourne dr*

| | |
|---|---|
| **Direction / Road:** | **WB Westbourne dr** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **WB Westbourne dr** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

*Job #:* *GMP.A.00030* *Date Taken:* *03/25/2015* *Intersection Of:* *Parkway ave & Westbourne dr*

| | |
|---|---|
| **Direction / Road:** | **SB Parkway ave** |
| **Approach / Departure:** | **Approach** |
| **Distance:** | |

| | |
|---|---|
| **Direction / Road:** | **SB Parkway ave** |
| **Approach / Departure:** | **Departure** |
| **Distance:** | |

# APPENDIX C

***SMART TRANSPORTATION CRITERIA***

# SMART TRANSPORTATION GUIDEBOOK

*Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*


**New Jersey Department of Transportation**

**Pennsylvania Department of Transportation**



**MARCH 2008**

# Land Use Context

# 4.0

Land use context and roadway type comprise the organizing framework for the selection of appropriate roadway design values. A context area is a land area comprising a unique combination of different land uses, architectural types, urban form, building density, roadways, and topography and other natural features. The existing and planned land use context should be defined on every project. The roadway design should be compatible with the existing land use context, or a planned land use context that reflects the community vision.

## 4.1 WHY CONTEXT MATTERS

Understanding the land use context provides guidance on who will need to use the road and how. This understanding influences the geometric design of the roadway and the types of amenities required in the right-of-way.

For this document, the design elements are organized into three general categories:

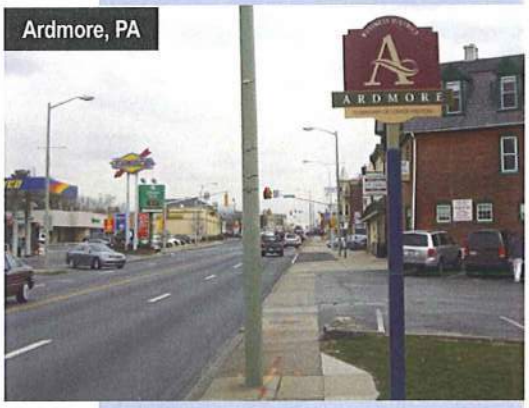
**Desired Operating Speed:** This is the speed at which it is intended that vehicles travel. The roadway context should play a large role in determining the desired operating speed. For example, pedestrian travel and the presence of civic uses and retail close to the street all suggest the need to use the lower range of the desired operating speed.

**Roadway:** The design team should select roadway elements and geometry with a clear understanding of surrounding land uses. For example, in urban areas the design team should always seek to provide parking lanes. Travel lanes are often narrower than in suburban areas, particularly if this enables the installation of bike lanes.

**Roadside:** The roadside primarily serves the pedestrian and the transit rider and provides a transition between public and private space. The design of the roadside elements should support the land use context. Civic uses such as schools and parks, and high density neighborhoods which generate higher pedestrian activity may require wider sidewalks.

### *A Tale of Two Contexts*

*Route 30, classified as a principal arterial, has a cross-section of four 10 ft. travel lanes in both Ardmore, PA, and Wayne, PA, as shown below. The speed limit on both roads is 25 mph. In a workshop for this guidebook, DVRPC stakeholders agreed that the Wayne town center is friendlier for pedestrians, identifying Route 30 in Wayne as "an example of an arterial roadway that has evolved to a village feeling." The difference? In Wayne, the presence of on-street parking and the traditional town center context (with zero building setbacks) results in more watchful motorists and creates a defined space for pedestrians. With sporadic on-street parking and with the greater prominence of parking lots, Ardmore is an example of a suburban center.*




Ardmore, PA

Wayne, PA

## 4.2 DEFINING LAND USE CONTEXT

Seven context areas are described in the following section, from the least to the most developed: Rural, Suburban Neighborhood, Suburban Corridor, Suburban Center, Town/Village Neighborhood, Town Center, and Urban Core.

The context areas are illustrated in Figure 4.2. This drawing does not arrange the areas in order of intensity, but is an illustrative example of how these areas might fall across the land.

"Quantifiable characteristics," summarized in figure 4.3, are provided for each context. They are similar to what community planners refer to as "bulk standards," normally used to prescribe the desired appearance of land uses within a zoning district. Each land use context should be identified based upon this information.

In practice, land uses do not always fit neatly into the defined context areas, or the boundaries between context areas may be fluid. The planner or designer should use their best judgment in selecting the context that most closely matches the existing and proposed land uses.

It is recommended that contexts be broadly defined, avoiding segments less than 600 ft. in length. This is largely an issue of practicality. There is a limit on the number of different roadway cross-sections that can be implemented to respond to land use context within a small area.

### *1. Rural*

This context area consists of a few houses and structures dotting a farm or forest landscape. The areas are predominantly natural wetlands, woodlands, meadow or cultivated land. Small markets, gas stations, diners, farm supplies, convenience grocers, etc. are often seen at the intersections of arterial or collector roads. Areas with a few commercial or civic uses and a number of homes close to the roadway can be placed into the sub-context type of "rural hamlet." Once the population of the settled area exceeds 250, it should be classified into the town/village context.

*Examples include areas of Burlington and Gloucester Counties to the east, and Tioga and Jefferson Counties to the west.*

### *2. Suburban Neighborhood*

Predominantly low-density residential communities, many built since WWII. House lots are typically arranged along a curvilinear internal system of streets with limited connections to regional road network or surrounding streets. Lot sizes are usually two acres to one-quarter acre, but in older suburbs, it is common to find one-eighth acre lots. Garden apartments are also included in this type. Neighborhoods can include community facilities such as schools, churches, recreational facilities, and some stores and offices. When suburban houses line an arterial roadway but have their primary access to frontage roads or rear access roads, it is possible to classify this area as a "suburban corridor."

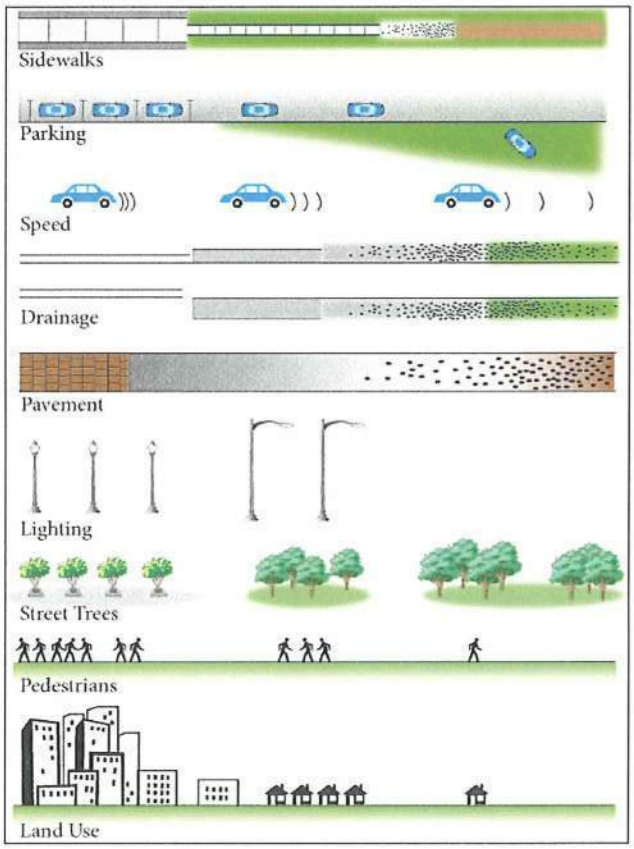



*Figure 4.1 From Urban to Rural. As intensity and mix of uses along a roadway increase, there is a greater need to accommodate and prioritize other modes of travel, including bicyclists, pedestrians, and transit riders.*

*Figure 4.2 The Seven Land Use Contexts*

### 3. Suburban Corridor

This area is characterized by big box stores, commercial strip centers, restaurants, auto dealerships, office parks, and gas stations. These uses are sometimes interspersed with natural areas and occasional clusters of homes. Buildings are usually set back from the roadway behind surface parking. Office buildings are usually set back a bit more than adjacent retail frontage to establish garden separation from ground windows.

*These areas are found along many arterial roadways, such as Route 38 in Cherry Hill and Route 611 north of Philadelphia.*

### 4. Suburban Center

Often a mixed-use, cohesive collection of land uses that may include residential, office, retail, and restaurant uses where commercial uses serve surrounding neighborhoods. These areas are typically designed to be accessible by car, and may include large parking areas and garages.

They are less accommodating to pedestrians than town centers, and opportunities to cross the primary roadway can be limited. On-street parking may or may not be provided.

*Examples include Lancaster Avenue in Ardmore, PA, and Montgomery Avenue in Bryn Mawr, PA.*

### 5. Town/Village Neighborhood

Predominantly residential neighborhoods, sometimes mixed with retail, restaurants and offices. In urban places, residential buildings tend to be close to the street. Rowhouses fronting the sidewalk, and houses back 30 feet behind a front lawn are both common types. Small retail establisments sometimes occupy principal corners. Block sizes are regular and often small in comparison to suburban neighborhood blocks. Even where streets are narrow, on-street parking is common and typically well used. The large majority of neighborhoods have sidewalks.

*Existing examples include Fairview in Camden and Society Hill in Philadelphia.*

*Figure 4.3 Defining Contexts*

| | Rural | Suburban Neighborhood | Suburban Corridor | Suburban Center | Town/Village Neighborhood | Town Center | Urban Core |
|---|---|---|---|---|---|---|---|
| **Density Units** | 1 DU/20 ac | 1 DU/ac - 8DU/ac | 2 - 30 DU/ac | 3 - 20 DU/ac | 4 - 30 DU/ac | 8 - 50 DU/ac | 16 - 75 DU/ac |
| **Building Coverage** | NA | < 20% | 20% - 35% | 35% - 45% | 35% - 50% | 50% - 70% | 70% - 100% |
| **Lot Size/Area** | 20 acres | 5,000 - 80,000 sf | 20,000 - 200,000 sf | 25,000 - 100,000 sf | 2,000 - 12,000 sf | 2,000 - 20,000 sf | 25,000 - 100,000 sf |
| **Lot Frontage** | NA | 50 to 200 feet | 100 to 500 feet | 100 to 300 feet | 18 to 50 feet | 25 to 200 feet | 100 to 300 feet |
| **Block Dimensions** | NA | 400 wide x varies | 200 wide x varies | 300 wide by varies | 200 by 400 ft | 200 by 400 ft | 200 by 400 ft |
| **Max. Height** | 1 to 3 stories | 1.5 to 3 stories | retail -1 story; office 3-5 stories | 2 to 5 stories | 2 to 5 stories | 1 to 3 stories | 3 to 60 stories |
| **Min./Max. Setback** | Varies | 20 to 80 feet | 20 to 80 ft | 20 to 80 ft | 10 to 20 ft | 0 to 20 ft | 0 to 20 ft |

### *6. Town/Village Center*

A mixed use, high density area with buildings adjacent to the sidewalk, typically two to four stories tall with commercial operations on the ground floor and offices or residences above. Parallel parking usually occupies both sides of the street with parking lots behind the buildings. Important public buildings, such as the town hall or library, are provided special prominence.

*Places like Haddon Avenue in Collingswood and State and Main Streets in Doylestown are classic "Main street" town centers.*

### *7. Urban Core*

Downtown areas consisting of blocks of higher density, mixed use buildings. Buildings vary in height from 3 to 60+ stories with most buildings dating from an era when elevators were new technology - so five to twelve stories were the standard.

*Examples are Trenton's Downtown and Center City Philadelphia.*

## 4.3 PLANNING FUTURE CONTEXT AREAS

The planned land use context along the corridor is assessed by consulting the following plans and documents:

- Municipal comprehensive plan (referred to as master plan in New Jersey)
- Multi-municipal or regional comprehensive plan (applicable in Pennsylvania)
- Zoning ordinance
- Redevelopment plan (if applicable)
- State Plan designation (applicable in New Jersey)

As part of the collaboration between state and community, the study team consults with local stakeholders on the vision for their community. If no vision exists, a workshop or charrette can be held to help crystallize the community vision.

# 5.0 Transportation Context

*Routes 1 and 27 in Central New Jersey (below) are both classified as principal arterials in traditional functional classification, but they have very different roles within the roadway network. This chapter proposes a new roadway typology to better capture the role of roadways in a community.*

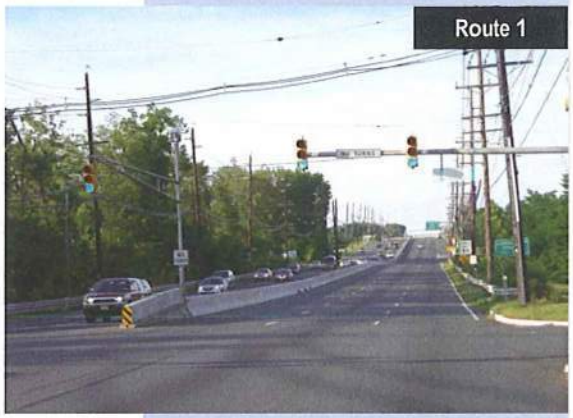
The transportation context consists of the role that the roadway plays, or is anticipated to play within the local community and the larger region. It also refers to the supporting street network, and the interaction of the roadway with that network.

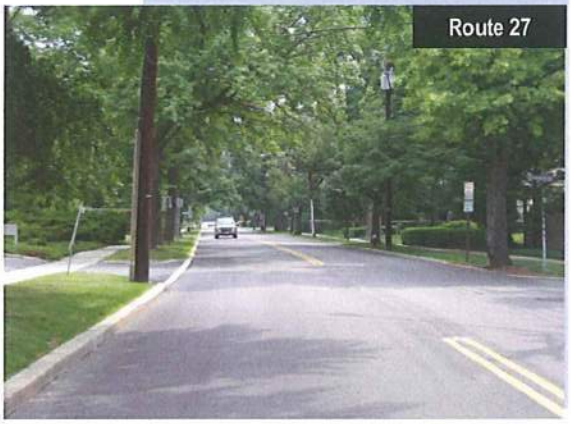
## 5.1 ROADWAY TYPE

A new roadway typology is proposed for the Guidebook in order to design roadways that better reflect their role in the community and the larger transportation network.

Currently, every roadway owned by NJDOT or PennDOT, or by county governments in New Jersey, is assigned a functional classification consistent with the AASHTO Green Book:

- Principal Arterial
- Minor Arterial
- Collector (subdivided into major collector and minor collector within rural areas)
- Local


Route 1


Route 27

A problem with the existing functional classification system is that an entire highway is sometimes placed into a certain class based on select characteristics – such as the overall highway length, or traffic volumes – although its level of access and mobility are not consistent with other roadways in that class. For example, many state highways are classified as principal arterials even if they are far more vital to community access than to regional mobility. This creates a dilemma for highway designers: the application of design standards for that class may encourage higher operating speeds than are appropriate for segments serving community access.

To address this issue, a roadway typology is proposed which better captures the role of the roadway within the community. It focuses more narrowly on the characteristics of access, mobility and speed. If a segment of an arterial roadway has a relatively low speed, is important to community access, and has a lower average trip length, it should not be designed like a high order arterial. Further, under this approach, roadways

are segmented to a greater degree than traditional functional classification. If one segment of a roadway has low average trip lengths and has consistently lower speeds, its design should be different than another section which carries long trips.

The roadway typology is presented in Table 5.1 and illustrated in Figure 5.1. It should be emphasized that this should be used only as a planning and design "overlay" for individual projects, and does not replace the traditional functional classification system used in both states. The roadway classes shown in Table 5.1 correspond to the classifications of arterial, collector and local as described in the 2001 AASHTO Green Book. Their design values should likewise correspond to the design guidelines provided in the Green Book.

Different state highways have different community roles, and the Guidebook recommends that this should be reflected in the design. Some state highways, such as NJ Route 1, will be considered as a Regional Arterial because of their importance to regional mobility. On the other hand, Route 27, which is classified as a principal arterial by NJDOT, actually operates more like a community arterial or a community collector. Parallel to Route 1 and the New Jersey Turnpike, this highway has a low average trip length. Maintaining regional mobility becomes a smaller concern on Route 27 and similar state roadways.

Whatever the road classification, traffic mobility and safety are important goals on state highways, and must be considered on all roadway projects. These goals will continue to receive significant attention on roads with acute safety or congestion problems. Mobility and safety goals are balanced with local development goals on projects.

PennDOT owns many roads in Pennsylvania, from arterials down through local roads. NJDOT controls a much smaller share of the road network, and virtually all of its roadways are arterials. Because of the relatively high volumes found on many NJDOT roadways, the maintenance of mobility on regional arterials remains a strong emphasis.

### 5.1.1 Main Street

Although not one of the Smart Transportation roadway categories, the concept of Main Street has an important place in Smart Transportation. Anchoring the center of a town, village or city, the Main Street is characterized by:

- Wide sidewalks and regular pedestrian activity;
- Mostly commercial and civic uses, with residential uses primarily found on the upper level of buildings;
- High building density;
- Buildings oriented to the street, with little or no building setbacks;
- Street furniture and public art;
- Heavy use of on-street parking;
- Speeds of 30 mph or less;
- Preferably no more than two travel lanes, although three to four lanes are seen on occasion.

**Table 5.1 Roadway Categories**

| Roadway Class | Roadway Type | Desired Operating Speed (mph) | Average Trip Length (mi) | Volume | Intersection Spacing (ft) | Comments |
|---|---|---|---|---|---|---|
| Arterial | Regional | 30-55 | 15-35 | 10,000-40,000 | 660-1,320 | Roadways in this category would be considered "Principal Arterial" in traditional functional classification. |
| Arterial | Community | 25-55 | 7-25 | 5,000-25,000 | 300-1,320 | Often classified as "Minor Arterial" in traditional classification but may include road segments classified as "Principal Arterial." |
| Collector | Community | 25-55 | 5-10 | 5,000-15,000 | 300-660 | Often similar in appearance to a community arterial. Typically classified as "Major Collector." |
| Collector | Neighborhood | 25-35 | <7 | <6,000 | 300-660 | Similar in appearance to local roadways. Typically classified as "Minor Collector." |
| Local | Local | 20-30 | <5 | <3,000 | 200-660 | |

*Route 27, Kingston*

*Route 27, Princeton*

The Main Street would typically belong to the Community Arterial road type, or to the Collector road type. This is the case on Route 27 in New Jersey; this roadway hosts two Main Street segments between New Brunswick and Trenton, in the towns of Princeton and Kingston. As defined here, a municipality can have more than one Main Street.

Main Streets are desirable in Smart Transportation because they support more sustainable communities, and because of their potential to increase walking, biking and transit use, as well as vehicular trip chaining.

*For information on planning Main Streets, see Section 6.2.1.*

## 5.2 ROADWAY NETWORK

Network design establishes critical parameters for roadway design—type of roadway, its general purpose (i.e., what type of traffic it is to handle) and number of lanes necessary to achieve the purpose. By increasing the options of motorists to travel from one point to another, a well-connected regional network permits greater flexibility in designing individual roadways. Improving roadway connectivity can serve regional mobility equally well as widening major roadways, and a well-connected network always serves the needs of pedestrians and bicyclists better than simply widening arterial roadways.

Because network connectivity is so important in Smart Transportation Solutions, it appears as a recurring theme in this guidebook. Network types, basic principles, and evaluating and creating a network are discussed in this section and in Chapter 3, "A Local Commitment."

### 5.2.1 Network types

The traditional urban grid has short blocks, straight streets, and a crosshatched pattern (Figure 5.2). The typical contemporary suburban street network has large blocks, curving streets, and a branching pattern (Figure 5.3). The two networks differ in three respects: (1) block size, (2) degree of curvature, and (3) degree of interconnectivity.

Both network designs have advantages and disadvantages. Traditional grids disperse traffic rather than concentrating it at a handful of intersections. They offer more direct routes and hence generate fewer vehicle miles of travel (VMT) than do contemporary networks. By offering many different routes to a destination, they better meet the needs of local motorists. They encourage walking and biking with their direct routing and their options for travel. Grids are also more transit-friendly; transit ridership is greatest between tracts that have relatively direct transit connections.[3]

Contemporary networks do have some advantages, such as the ability to lessen traffic on local residential streets. With their curves and dead ends, contemporary networks can go around or stop short of valuable natural areas.

Traditional grids best fulfill Smart Transportation goals, and are recommended for application in most areas.

### 5.2.2 Evaluation of the network

All roadway networks should be evaluated using the measures on internal connectivity, external connectivity, and route directness.

**RURAL** — **to**

| Rural Places | Suburban Neighborhood | Suburban Corridor | Suburban Center |
|---|---|---|---|

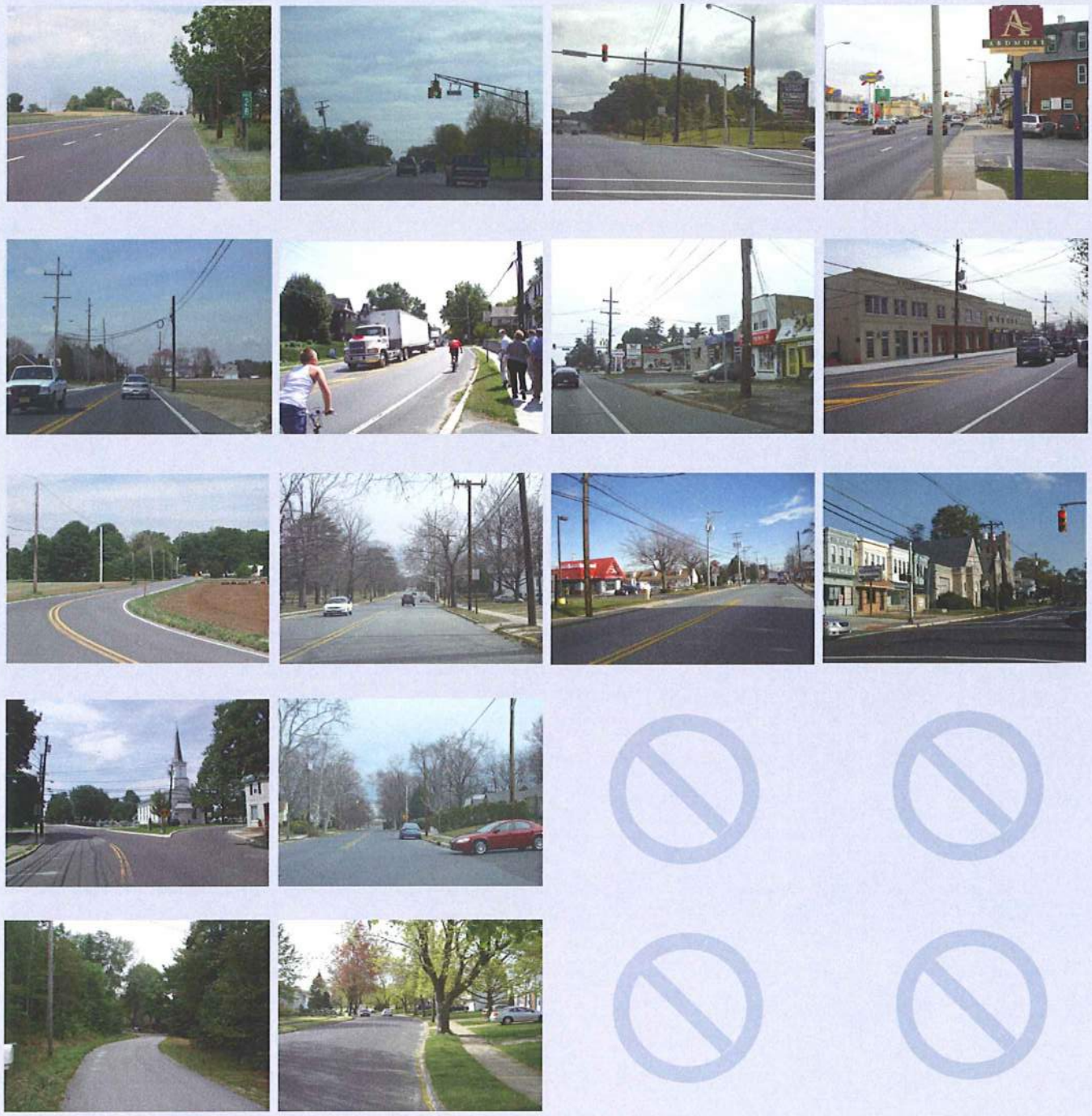


*Figure 5.1 Roads in Context*

**URBAN**

| Town/Village Neighborhood | Town Center | Urban Core | | |
|---|---|---|---|---|
| | | | REGIONAL | Regional Arterial |
| | | | | Community Arterial |
| | | | to | Community Collector |
| | | | | Neighborhood Collector |
| | | | LOCAL | Local Road/ Street |

*The photos enclosed in a yellow box indicate the Town Center and Core City streets that also operate as a local or regional Main Street.*

***Internal Connectivity.*** *Use either of the following two measures:*

- **Beta Index** — This is equal to the number of street links divided by the number of nodes or link ends. A higher ratio indicates higher street connectivity. When applied to the developments shown in Figures 5.2 and 5.3, Apalachicola is rated 1.69, and Haile Plantation is rated 1.19. Traditional developments generally rate above 1.4. [4]
- **Intersections per square mile** — Strict grid systems have about 25 intersections per square mile, while conventional branching systems have about one-third to one-half that many.[5]

### External Connectivity

- All neighborhoods in the community should be connected to the larger street system at least every ¼ mile.

### Route Directness

- This measures the distance a pedestrian would walk between two points compared to the straight line (or radial) distance between the same two points. The closer the ratio is to 1.0, the more direct the route; route directness values of 1.2-1.5 describe reasonably connected walkable networks.[6]

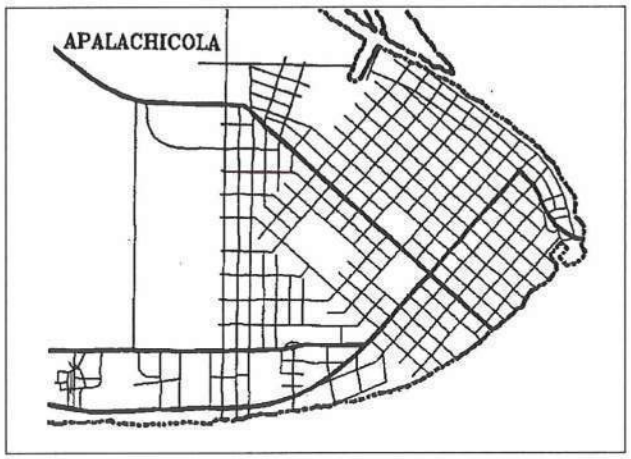
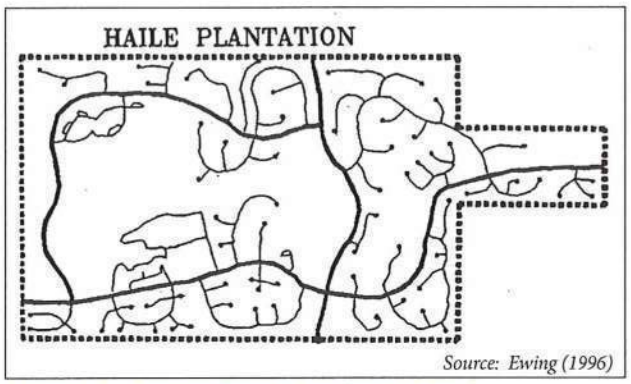



*Figure 5.2. Traditional Urban Grid*




*Source: Ewing (1996)*

*Figure 5.3. Contemporary Branching Network*

## 5.3 CREATING EFFICIENT NETWORKS

In Smart Transportation, network evaluation becomes a critical task anytime existing or projected traffic congestion is identified as a potential issue on projects. The role of the network differs somewhat for projects in built-out areas versus newly developing areas.

### 5.3.1 Existing and Built-out Areas

In a built-out area, can the network be improved such that local traffic can use local streets to a greater degree? It should be determined how much traffic can be removed from regional roadways if the local and collector system is made to work more effectively. The network should be evaluated using measures of internal connectivity, external connectivity, and pedestrian route directness, described in Section 5.2.2.

If improving the network will not address the problem or is not an option, the two primary choices are to widen the roadway or to build a parallel roadway.

### Roadway widening

The planner should first determine if segment improvements, access management, or intersection changes will address the problem, and then consider mainline widening. Widening should be done only if the resulting roadway is compatible with the land use context. Planners should identify the existing roadway role, its consistency with the community vision, and whether an alternative roadway type would better support the community.

### Parallel roadway

If a parallel roadway is necessary, the planner should consider development of a regional or community arterial. It should be consistent with an area network plan, and be tied in where possible to the existing road system. This would improve the effectiveness of this road link.

### 5.3.2 Creating a Road Framework for New Development

A newly developing area offers the opportunity to implement a highly connected street system with less reliance on multi-lane arterials. Following are guidelines to be used in laying out a context sensitive roadway network capable of providing safe, multimodal choices for all trips. Initial planning should identify higher order roads needed for ultimate build-out; local roads and neighborhood collectors should then be included, depending upon specific developments proposed.

#### Network Configuration – Areawide

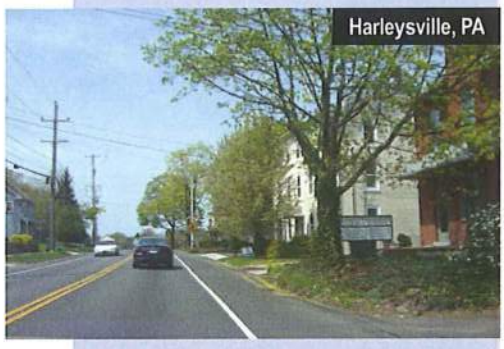
- Arterial roadways should be continuous and networked in generally rectilinear form with spacing of ½ to 1 mile in suburban contexts and ¼ to ½ mile in urban contexts. Closer spacing may be needed depending on activity levels and through movements.
- Collectors may be spaced at 1/8 mile intervals, if needed.
- Urban cores and town centers should be connected by community arterials and community collectors. These roadways should have the area's highest level transit service.
- Collectors should link neighborhood centers with adjacent neighborhood centers and town centers. All such connectors should be able to accommodate transit service.
- Major roadways that are to serve as major truck routes or primary through traffic routes should avoid the centers of urban areas or neighborhoods wherever possible. Community arterials and community collectors may be designated local truck routes to reach clusters of commercial uses in centers or cores.
- Sketch planning demand estimation or travel forecasting models should be used to estimate the density/spacing and capacity needs for major roadways beyond the minimum spacing described above.

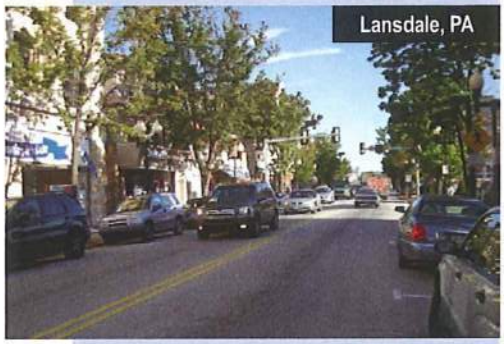
#### Spacing

- Irrespective of thoroughfare spacing, pedestrian facilities should be well networked. In suburban contexts, block sizes of no more than 600 feet on a side with a maximum area of 7 acres will provide a reasonable level of connectivity.[7] In urban contexts, block sizes of 300 to 400 feet with a maximum area of 3-4 acres are ideal.
- Where streets cannot be connected, provide bike and pedestrian connections at cul-de-sac heads or midblock locations as a second-best solution to accessibility needs. Recommended maximum spacing is 330 ft.
- Bicycle-compatible roadways should comprise a bicycle network of parallel routes with effective spacing of ½ mile.

### 5.3.3 Network principles

All new networks should be evaluated using the measures on connectivity in Section 5.2.




*Route 63, a principal arterial highway, runs through Harleysville, PA (top) and Lansdale, PA (bottom). Harleysville lies six miles northwest of Lansdale, with I-476 passing between the two municipalities. Motorists on Route 63 in Harleysville have an average trip length of 30 miles, much longer than the 10 mile average trip length of motorists found on Route 63 in Lansdale. Motorists commuting from the north prefer to take I-476 into Philadelphia, and avoid driving through Lansdale. Further, Route 63 in Lansdale serves as that borough's main street. The highway thus serves a different role in these two municipalities.*

## 5.4 SIGNAL SPACING

Recommended signal spacing corresponds to the optimal spacing of arterial, collector and local streets (Table 5.2), although signals should be installed only where warranted.

Signal spacing of 300 ft. on arterials and collectors can be an important strategy in complementing traditional grid networks where low traffic speeds and high pedestrian activity are desired. On roadways in traditional urban contexts where regular cross traffic flows can be accommodated by stop-controlled intersections, signal spacing of 500 to 660 ft. on arterials and collectors may be sought.

On lower order suburban roadways, spacing of 660 ft. (1/8 mile) permits safe pedestrian crossings at the upper boundary of desirable block lengths. Signal spacing of 1320 ft. (1/4 mile) begins to permit the speed progression sought by NJDOT or PennDOT on those corridors where traffic flow is a priority.

The spacing of traffic signals has a major influence on roadway operating speeds and capacity. Studies have found that a four lane divided arterial roadway with signal spacing of 2640 ft. carries the same amount of traffic as a six lane arterial with signals spaced at 1320 ft.[8] Neither situation is optimal for pedestrians. On the one hand, narrower roadways are more amenable to pedestrian crossings. On the other hand, wider signal spacing reduces the opportunities for pedestrians to cross roadways at controlled locations. Further, motorists who desire to turn left onto an undivided major roadway may be tempted to access it at a Stop-controlled crossing, rather than traveling farther out of their way to access the roadway at a signal. On higher-order roadways where major pedestrian generators straddle the corridor, the best choice is sometimes smaller signal spacing and acceptance of a lower progression speed.

**Table 5.2. Recommended Signal Spacing**

| | Urban Contexts | Suburban Contexts | Rural Contexts |
|---|---|---|---|
| **Regional Arterial** | 660 to 1320 ft. | 1320 to 1540 ft. | 1980 ft. |
| **Community Arterial** | 300 ft. to 1100 ft. | 1320 ft. | 1540 ft. |
| **Community Collector** | 300 to 660 ft. | 660 to 1320 ft. | 1540 ft. |

# APPENDIX D

***MANUAL COUNTS***

## *SPROUL ROAD & LAWRENCE ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Lawrence Rd
Date: Wednesday, April 9, 2014
Counter: MIO

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 1

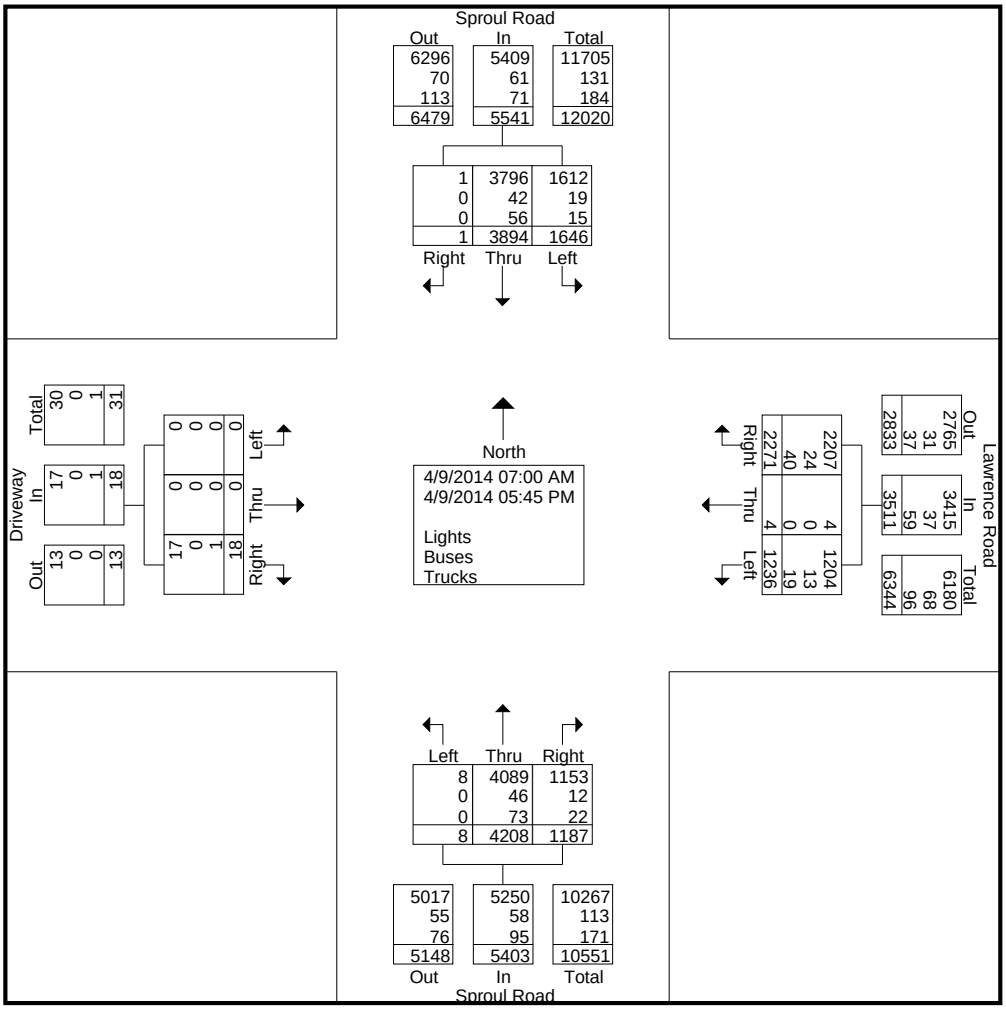
Groups Printed- Lights - Buses - Trucks

| | Driveway Eastbound | | | | | Lawrence Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 137 | 0 | 180 | 0 | 252 | 81 | 0 | 333 | 65 | 110 | 0 | 0 | 175 | 0 | 688 | 688 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 183 | 0 | 232 | 0 | 288 | 69 | 0 | 357 | 86 | 136 | 0 | 0 | 222 | 0 | 811 | 811 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 158 | 0 | 218 | 1 | 294 | 77 | 0 | 372 | 103 | 196 | 0 | 0 | 299 | 0 | 889 | 889 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 163 | 0 | 211 | 1 | 282 | 79 | 0 | 362 | 102 | 186 | 0 | 0 | 288 | 0 | 861 | 861 |
| Total | 0 | 0 | 0 | 0 | 0 | 200 | 0 | 641 | 0 | 841 | 2 | 1116 | 306 | 0 | 1424 | 356 | 628 | 0 | 0 | 984 | 0 | 3249 | 3249 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 82 | 3 | 133 | 0 | 218 | 2 | 300 | 75 | 0 | 377 | 78 | 168 | 0 | 0 | 246 | 0 | 841 | 841 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 150 | 0 | 222 | 0 | 304 | 94 | 0 | 398 | 82 | 187 | 0 | 0 | 269 | 0 | 889 | 889 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 69 | 1 | 170 | 0 | 240 | 0 | 282 | 97 | 0 | 379 | 76 | 167 | 0 | 0 | 243 | 0 | 862 | 862 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 150 | 0 | 208 | 1 | 271 | 106 | 0 | 378 | 79 | 178 | 0 | 0 | 257 | 0 | 843 | 843 |
| Total | 0 | 0 | 0 | 0 | 0 | 281 | 4 | 603 | 0 | 888 | 3 | 1157 | 372 | 0 | 1532 | 315 | 700 | 0 | 0 | 1015 | 0 | 3435 | 3435 |
| 04:00 PM | 0 | 0 | 2 | 0 | 2 | 88 | 0 | 118 | 0 | 206 | 0 | 239 | 57 | 0 | 296 | 149 | 292 | 0 | 0 | 441 | 0 | 945 | 945 |
| 04:15 PM | 0 | 0 | 2 | 0 | 2 | 99 | 0 | 132 | 0 | 231 | 1 | 235 | 58 | 0 | 294 | 106 | 274 | 1 | 0 | 381 | 0 | 908 | 908 |
| 04:30 PM | 0 | 0 | 5 | 0 | 5 | 98 | 0 | 140 | 0 | 238 | 0 | 241 | 51 | 0 | 292 | 123 | 260 | 0 | 0 | 383 | 0 | 918 | 918 |
| 04:45 PM | 0 | 0 | 9 | 0 | 9 | 103 | 0 | 132 | 0 | 235 | 2 | 260 | 72 | 0 | 334 | 133 | 314 | 0 | 0 | 447 | 0 | 1025 | 1025 |
| Total | 0 | 0 | 18 | 0 | 18 | 388 | 0 | 522 | 0 | 910 | 3 | 975 | 238 | 0 | 1216 | 511 | 1140 | 1 | 0 | 1652 | 0 | 3796 | 3796 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 125 | 0 | 211 | 0 | 252 | 57 | 0 | 309 | 112 | 373 | 0 | 0 | 485 | 0 | 1005 | 1005 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 81 | 0 | 119 | 0 | 200 | 0 | 272 | 89 | 0 | 361 | 125 | 370 | 0 | 0 | 495 | 0 | 1056 | 1056 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 135 | 0 | 240 | 0 | 226 | 74 | 0 | 300 | 102 | 328 | 0 | 0 | 430 | 0 | 970 | 970 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 126 | 0 | 221 | 0 | 210 | 51 | 0 | 261 | 125 | 355 | 0 | 0 | 480 | 0 | 962 | 962 |
| Total | 0 | 0 | 0 | 0 | 0 | 367 | 0 | 505 | 0 | 872 | 0 | 960 | 271 | 0 | 1231 | 464 | 1426 | 0 | 0 | 1890 | 0 | 3993 | 3993 |
| Grand Total | 0 | 0 | 18 | 0 | 18 | 1236 | 4 | 2271 | 0 | 3511 | 8 | 4208 | 1187 | 0 | 5403 | 1646 | 3894 | 1 | 0 | 5541 | 0 | 14473 | 14473 |
| Apprch % | 0 | 0 | 100 | | | 35.2 | 0.1 | 64.7 | | | 0.1 | 77.9 | 22 | | | 29.7 | 70.3 | 0 | | | | | |
| Total % | 0 | 0 | 0.1 | | 0.1 | 8.5 | 0 | 15.7 | | 24.3 | 0.1 | 29.1 | 8.2 | | 37.3 | 11.4 | 26.9 | 0 | | 38.3 | 0 | 100 | |
| Lights | 0 | 0 | 17 | | 17 | 1204 | 4 | 2207 | | 3415 | 8 | 4089 | 1153 | | 5250 | 1612 | 3796 | 1 | | 5409 | 0 | 0 | 14091 |
| % Lights | 0 | 0 | 94.4 | 0 | 94.4 | 97.4 | 100 | 97.2 | 0 | 97.3 | 100 | 97.2 | 97.1 | 0 | 97.2 | 97.9 | 97.5 | 100 | 0 | 97.6 | 0 | 0 | 97.4 |
| Buses | 0 | 0 | 0 | | 0 | 13 | 0 | 24 | | 37 | 0 | 46 | 12 | | 58 | 19 | 42 | 0 | | 61 | 0 | 0 | 156 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 1.1 | 0 | 1.1 | 0 | 1.1 | 0 | 1.1 | 1 | 0 | 1.1 | 1.2 | 1.1 | 0 | 0 | 1.1 | 0 | 0 | 1.1 |
| Trucks | 0 | 0 | 1 | | 1 | 19 | 0 | 40 | | 59 | 0 | 73 | 22 | | 95 | 15 | 56 | 0 | | 71 | 0 | 0 | 226 |
| % Trucks | 0 | 0 | 5.6 | 0 | 5.6 | 1.5 | 0 | 1.8 | 0 | 1.7 | 0 | 1.7 | 1.9 | 0 | 1.8 | 0.9 | 1.4 | 0 | 0 | 1.3 | 0 | 0 | 1.6 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 2

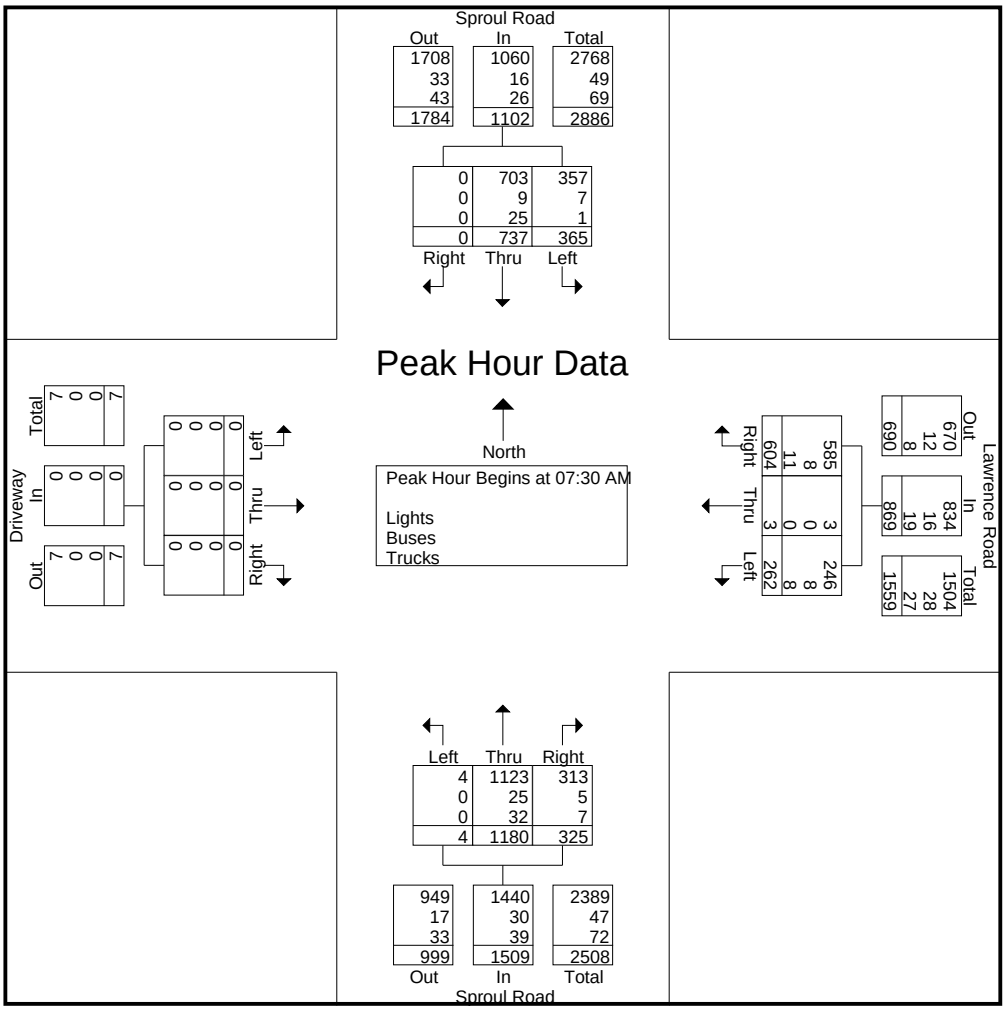


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 3

| | Driveway Eastbound | | | | Lawrence Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 0 | 0 | 0 | 60 | 0 | 158 | 218 | 1 | 294 | 77 | 372 | **103** | **196** | 0 | **299** | **889** |
| 07:45 AM | 0 | 0 | 0 | 0 | 48 | 0 | **163** | 211 | 1 | 282 | 79 | 362 | 102 | 186 | 0 | 288 | 861 |
| 08:00 AM | 0 | 0 | 0 | 0 | **82** | **3** | 133 | 218 | **2** | 300 | 75 | 377 | 78 | 168 | 0 | 246 | 841 |
| 08:15 AM | 0 | 0 | 0 | 0 | 72 | 0 | 150 | **222** | 0 | **304** | **94** | **398** | 82 | 187 | 0 | 269 | 889 |
| Total Volume | 0 | 0 | 0 | 0 | 262 | 3 | 604 | 869 | 4 | 1180 | 325 | 1509 | 365 | 737 | 0 | 1102 | 3480 |
| % App. Total | 0 | 0 | 0 | | 30.1 | 0.3 | 69.5 | | 0.3 | 78.2 | 21.5 | | 33.1 | 66.9 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .799 | .250 | .926 | .979 | .500 | .970 | .864 | .948 | .886 | .940 | .000 | .921 | .979 |
| Lights | 0 | 0 | 0 | 0 | 246 | 3 | 585 | 834 | 4 | 1123 | 313 | 1440 | 357 | 703 | 0 | 1060 | 3334 |
| % Lights | 0 | 0 | 0 | 0 | 93.9 | 100 | 96.9 | 96.0 | 100 | 95.2 | 96.3 | 95.4 | 97.8 | 95.4 | 0 | 96.2 | 95.8 |
| Buses | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 16 | 0 | 25 | 5 | 30 | 7 | 9 | 0 | 16 | 62 |
| % Buses | 0 | 0 | 0 | 0 | 3.1 | 0 | 1.3 | 1.8 | 0 | 2.1 | 1.5 | 2.0 | 1.9 | 1.2 | 0 | 1.5 | 1.8 |
| Trucks | 0 | 0 | 0 | 0 | 8 | 0 | 11 | 19 | 0 | 32 | 7 | 39 | 1 | 25 | 0 | 26 | 84 |
| % Trucks | 0 | 0 | 0 | 0 | 3.1 | 0 | 1.8 | 2.2 | 0 | 2.7 | 2.2 | 2.6 | 0.3 | 3.4 | 0 | 2.4 | 2.4 |

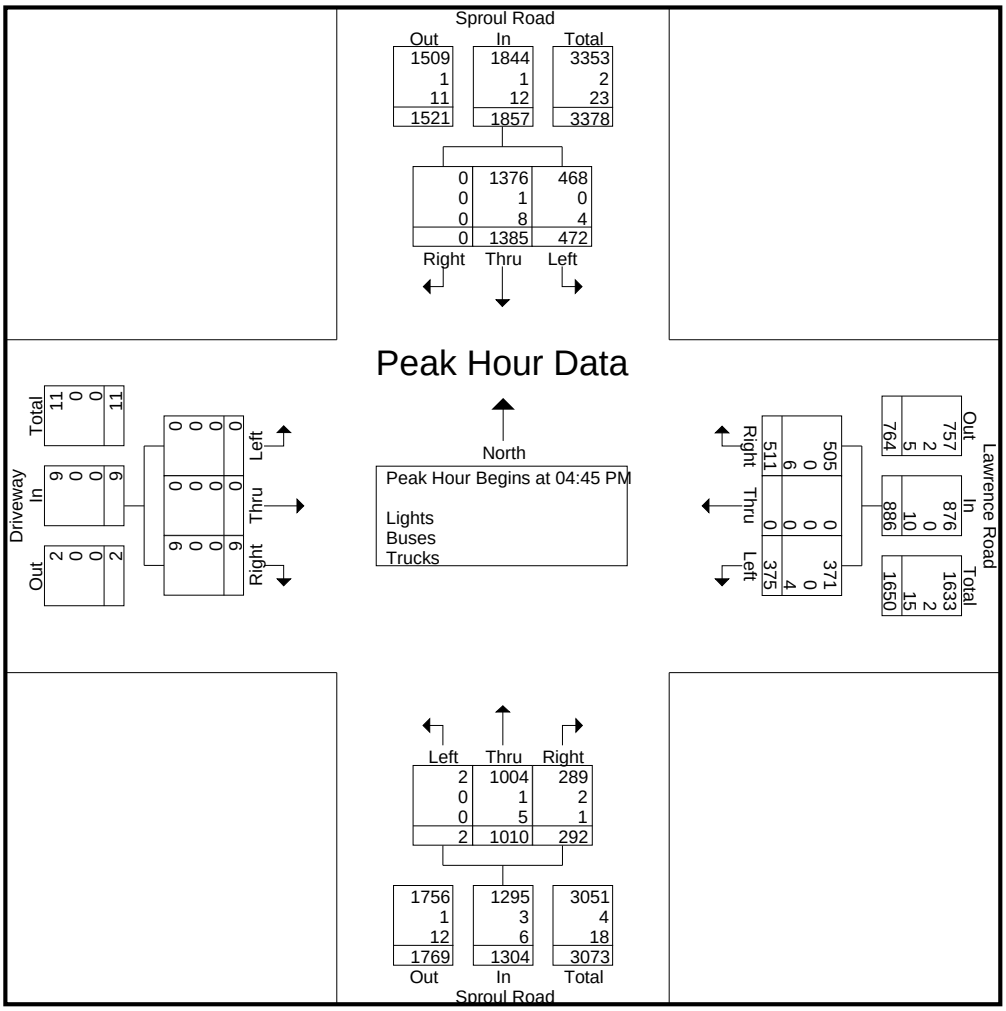


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 4

| | Driveway Eastbound | | | | Lawrence Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 0 | **9** | **9** | 103 | 0 | 132 | 235 | **2** | 260 | 72 | 334 | **133** | 314 | 0 | 447 | 1025 |
| 05:00 PM | 0 | 0 | 0 | 0 | 86 | 0 | 125 | 211 | 0 | 252 | 57 | 309 | 112 | **373** | 0 | 485 | 1005 |
| 05:15 PM | 0 | 0 | 0 | 0 | 81 | 0 | 119 | 200 | 0 | **272** | **89** | **361** | 125 | 370 | 0 | **495** | **1056** |
| 05:30 PM | 0 | 0 | 0 | 0 | **105** | 0 | **135** | **240** | 0 | 226 | 74 | 300 | 102 | 328 | 0 | 430 | 970 |
| Total Volume | 0 | 0 | 9 | 9 | 375 | 0 | 511 | 886 | 2 | 1010 | 292 | 1304 | 472 | 1385 | 0 | 1857 | 4056 |
| % App. Total | 0 | 0 | 100 | | 42.3 | 0 | 57.7 | | 0.2 | 77.5 | 22.4 | | 25.4 | 74.6 | 0 | | |
| PHF | .000 | .000 | .250 | .250 | .893 | .000 | .946 | .923 | .250 | .928 | .820 | .903 | .887 | .928 | .000 | .938 | .960 |
| Lights | 0 | 0 | 9 | 9 | 371 | 0 | 505 | 876 | 2 | 1004 | 289 | 1295 | 468 | 1376 | 0 | 1844 | 4024 |
| % Lights | 0 | 0 | 100 | 100 | 98.9 | 0 | 98.8 | 98.9 | 100 | 99.4 | 99.0 | 99.3 | 99.2 | 99.4 | 0 | 99.3 | 99.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 1 | 0 | 1 | 4 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.7 | 0.2 | 0 | 0.1 | 0 | 0.1 | 0.1 |
| Trucks | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 10 | 0 | 5 | 1 | 6 | 4 | 8 | 0 | 12 | 28 |
| % Trucks | 0 | 0 | 0 | 0 | 1.1 | 0 | 1.2 | 1.1 | 0 | 0.5 | 0.3 | 0.5 | 0.8 | 0.6 | 0 | 0.6 | 0.7 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Lawrence Rd
Date: Wednesday, April 9, 2014
Counter: MIO

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 1

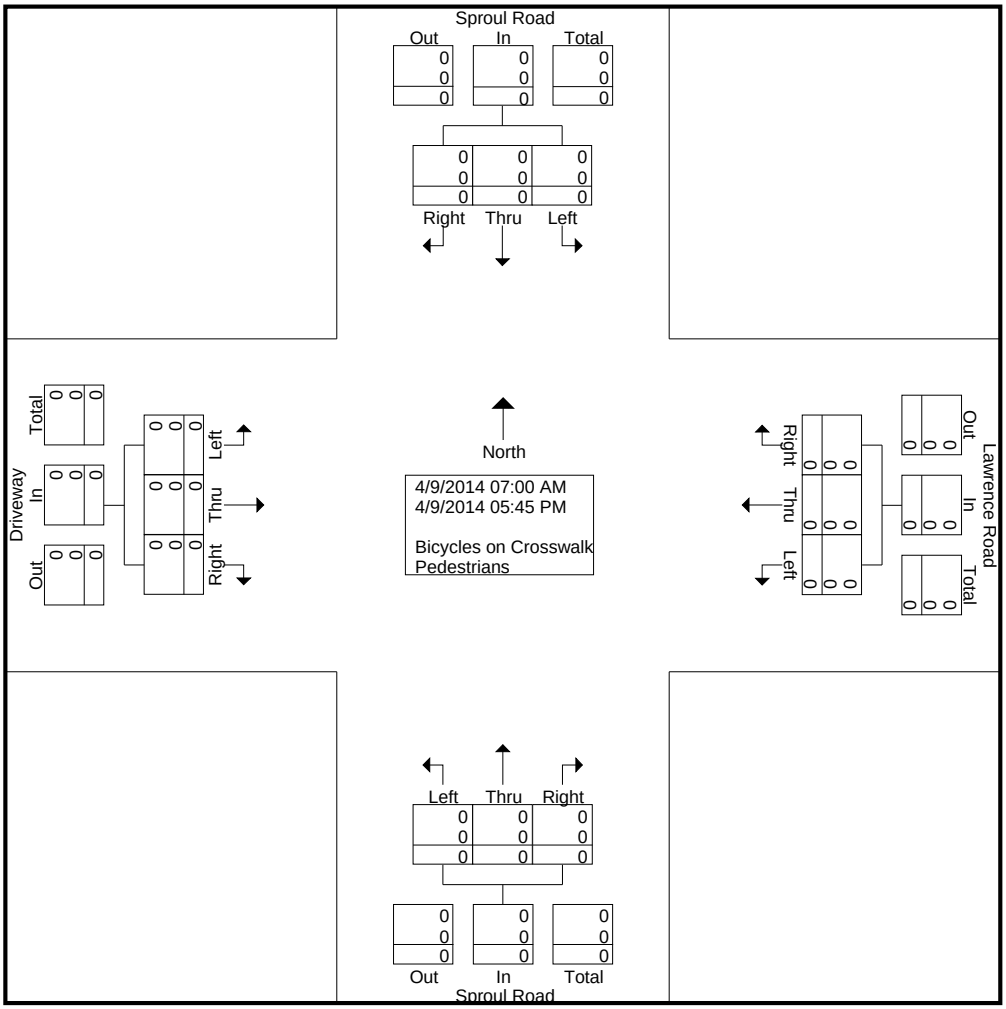
Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Driveway Eastbound | | | | | Lawrence Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:45 AM | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| Grand Total | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.7 |
| Pedestrians | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 14 |
| % Pedestrians | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 80 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93.3 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Sproul Road & Lawrence Road**
**Marple Township, Delaware County**

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 2

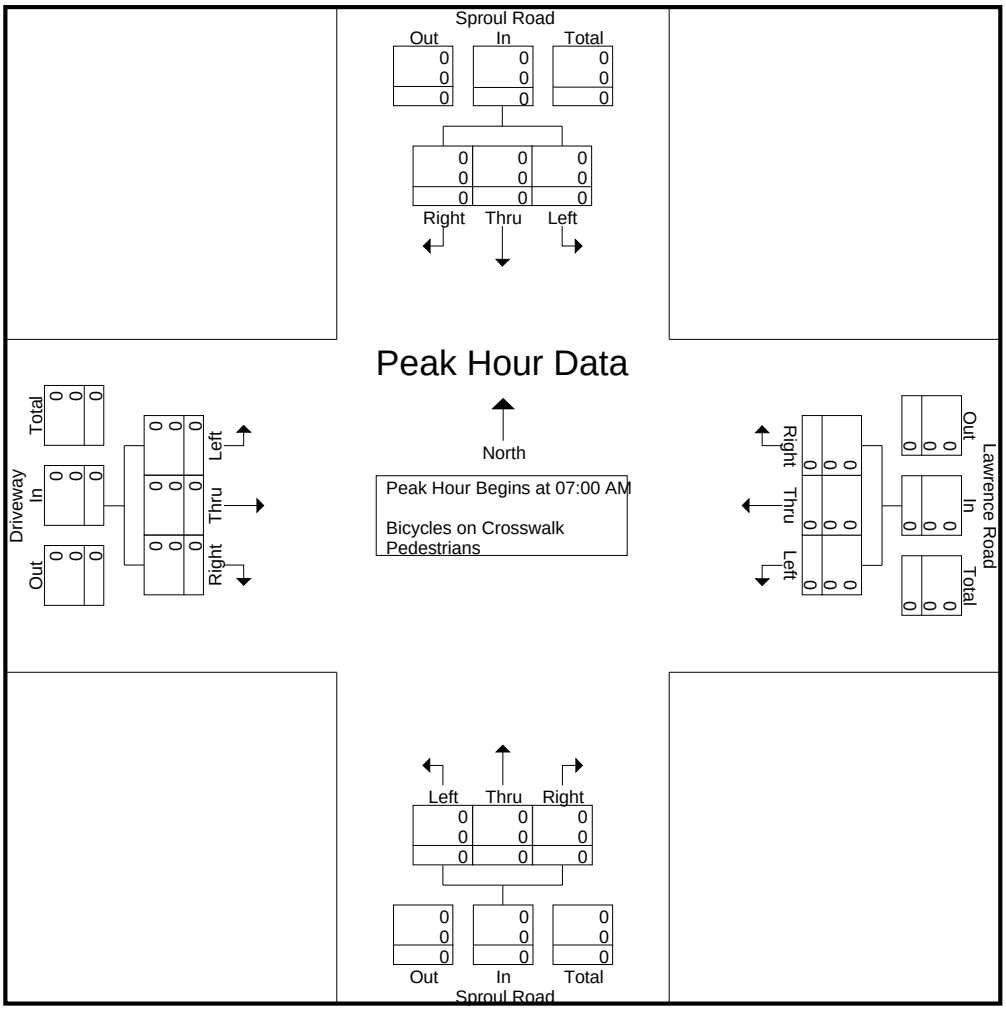


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 3

| | Driveway Eastbound | | | | Lawrence Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

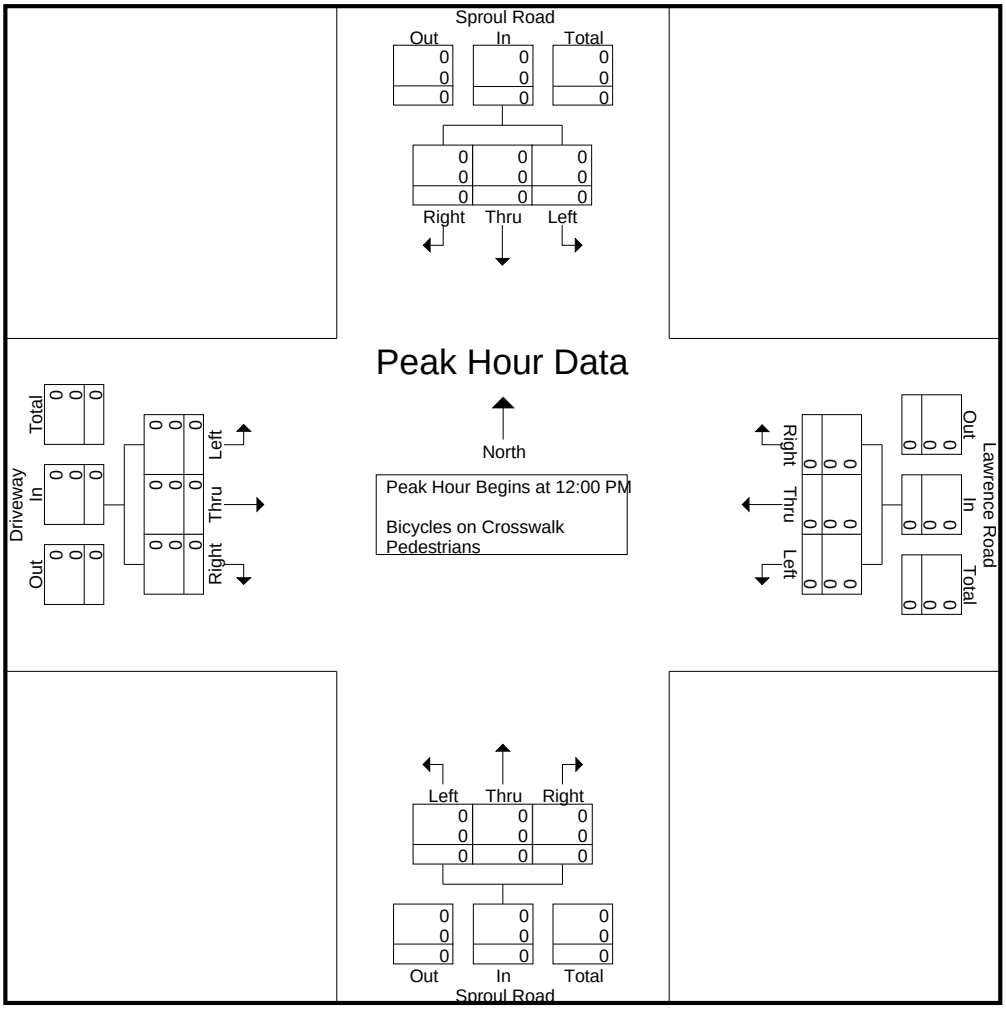


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Lawrence Road
# Marple Township, Delaware County

File Name : 08_MS 0409 07_Sproul & Lawrence
Site Code : 7
Start Date : 4/9/2014
Page No : 4

| | Driveway Eastbound | | | | Lawrence Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Lawrence Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 01 Sat
Site Code : 01
Start Date : 9/6/2014
Page No : 1

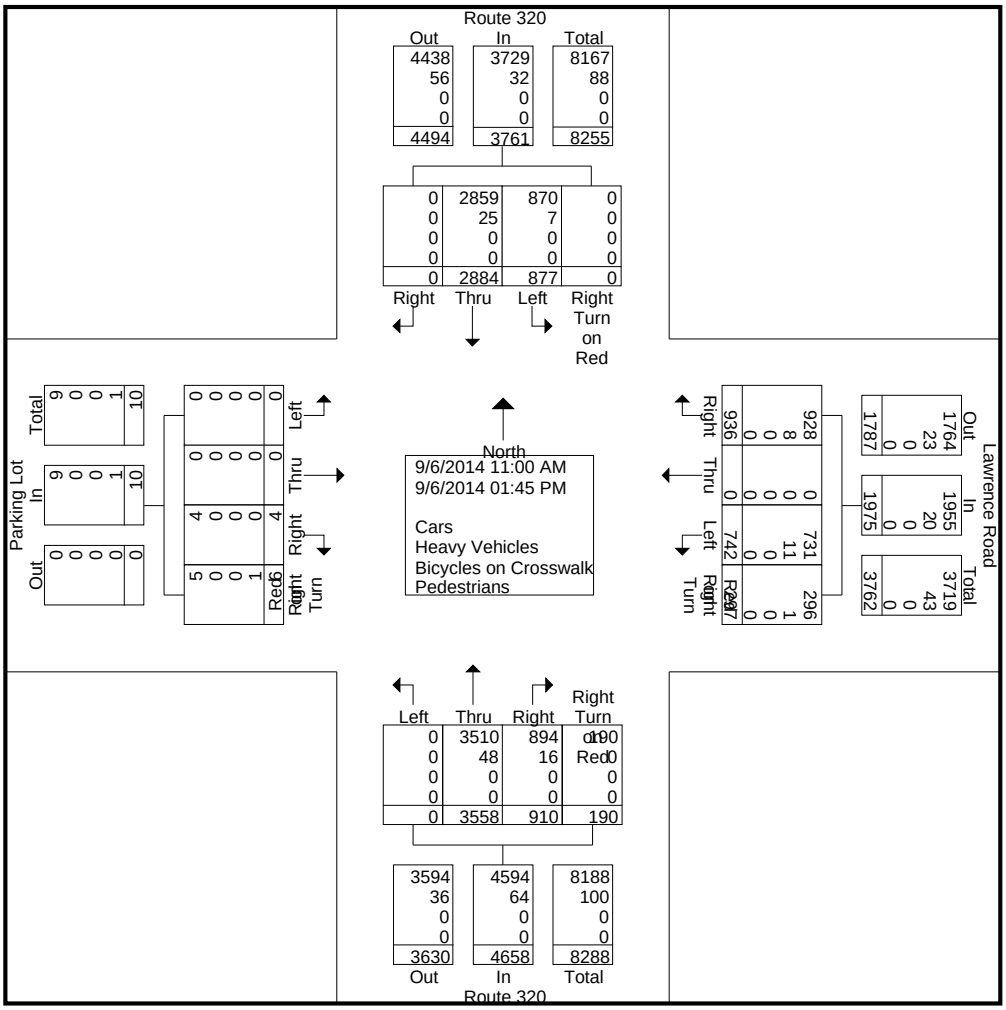
Groups Printed- Cars - Heavy Vehicles - Bicycles on Crosswalk - Pedestrians

| | Route 320 Southbound | | | | | Lawrence Road Westbound | | | | | Route 320 Northbound | | | | | Parking Lot Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 11:00 AM | 0 | 230 | 58 | 0 | 288 | 54 | 0 | 31 | 26 | 111 | 96 | 330 | 0 | 16 | 442 | 0 | 0 | 0 | 0 | 0 | 841 |
| 11:15 AM | 0 | 243 | 82 | 0 | 325 | 66 | 0 | 57 | 28 | 151 | 72 | 290 | 0 | 24 | 386 | 0 | 0 | 0 | 0 | 0 | 862 |
| 11:30 AM | 0 | 252 | 80 | 0 | 332 | 81 | 0 | 41 | 23 | 145 | 63 | 317 | 0 | 22 | 402 | 0 | 0 | 0 | 0 | 0 | 879 |
| 11:45 AM | 0 | 313 | 75 | 0 | 388 | 89 | 0 | 55 | 27 | 171 | 54 | 274 | 0 | 24 | 352 | 0 | 0 | 0 | 1 | 1 | 912 |
| Total | 0 | 1038 | 295 | 0 | 1333 | 290 | 0 | 184 | 104 | 578 | 285 | 1211 | 0 | 86 | 1582 | 0 | 0 | 0 | 1 | 1 | 3494 |
| 12:00 PM | 0 | 236 | 76 | 0 | 312 | 90 | 0 | 65 | 32 | 187 | 69 | 327 | 0 | 19 | 415 | 1 | 0 | 0 | 2 | 3 | 917 |
| 12:15 PM | 0 | 219 | 86 | 0 | 305 | 95 | 0 | 110 | 32 | 237 | 61 | 260 | 0 | 14 | 335 | 0 | 0 | 0 | 1 | 1 | 878 |
| 12:30 PM | 0 | 267 | 76 | 0 | 343 | 74 | 0 | 75 | 24 | 173 | 72 | 325 | 0 | 10 | 407 | 0 | 0 | 0 | 1 | 1 | 924 |
| 12:45 PM | 0 | 207 | 75 | 0 | 282 | 102 | 0 | 69 | 20 | 191 | 72 | 285 | 0 | 19 | 376 | 2 | 0 | 0 | 0 | 2 | 851 |
| Total | 0 | 929 | 313 | 0 | 1242 | 361 | 0 | 319 | 108 | 788 | 274 | 1197 | 0 | 62 | 1533 | 3 | 0 | 0 | 4 | 7 | 3570 |
| 01:00 PM | 0 | 227 | 73 | 0 | 300 | 64 | 0 | 60 | 26 | 150 | 98 | 334 | 0 | 8 | 440 | 0 | 0 | 0 | 1 | 1 | 891 |
| 01:15 PM | 0 | 251 | 70 | 0 | 321 | 79 | 0 | 61 | 16 | 156 | 85 | 261 | 0 | 18 | 364 | 1 | 0 | 0 | 0 | 1 | 842 |
| 01:30 PM | 0 | 226 | 68 | 0 | 294 | 70 | 0 | 50 | 24 | 144 | 104 | 302 | 0 | 9 | 415 | 0 | 0 | 0 | 0 | 0 | 853 |
| 01:45 PM | 0 | 213 | 58 | 0 | 271 | 72 | 0 | 68 | 19 | 159 | 64 | 253 | 0 | 7 | 324 | 0 | 0 | 0 | 0 | 0 | 754 |
| Total | 0 | 917 | 269 | 0 | 1186 | 285 | 0 | 239 | 85 | 609 | 351 | 1150 | 0 | 42 | 1543 | 1 | 0 | 0 | 1 | 2 | 3340 |
| Grand Total | 0 | 2884 | 877 | 0 | 3761 | 936 | 0 | 742 | 297 | 1975 | 910 | 3558 | 0 | 190 | 4658 | 4 | 0 | 0 | 6 | 10 | 10404 |
| Apprch % | 0 | 76.7 | 23.3 | 0 | | 47.4 | 0 | 37.6 | 15 | | 19.5 | 76.4 | 0 | 4.1 | | 40 | 0 | 0 | 60 | | |
| Total % | 0 | 27.7 | 8.4 | 0 | 36.1 | 9 | 0 | 7.1 | 2.9 | 19 | 8.7 | 34.2 | 0 | 1.8 | 44.8 | 0 | 0 | 0 | 0.1 | 0.1 | |
| Cars | 0 | 2859 | 870 | 0 | 3729 | 928 | 0 | 731 | 296 | 1955 | 894 | 3510 | 0 | 190 | 4594 | 4 | 0 | 0 | 5 | 9 | 10287 |
| % Cars | 0 | 99.1 | 99.2 | 0 | 99.1 | 99.1 | 0 | 98.5 | 99.7 | 99 | 98.2 | 98.7 | 0 | 100 | 98.6 | 100 | 0 | 0 | 83.3 | 90 | 98.9 |
| Heavy Vehicles | 0 | 25 | 7 | 0 | 32 | 8 | 0 | 11 | 1 | 20 | 16 | 48 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 116 |
| % Heavy Vehicles | 0 | 0.9 | 0.8 | 0 | 0.9 | 0.9 | 0 | 1.5 | 0.3 | 1 | 1.8 | 1.3 | 0 | 0 | 1.4 | 0 | 0 | 0 | 0 | 0 | 1.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16.7 | 10 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Lawrence Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 01 Sat
Site Code : 01
Start Date : 9/6/2014
Page No : 2

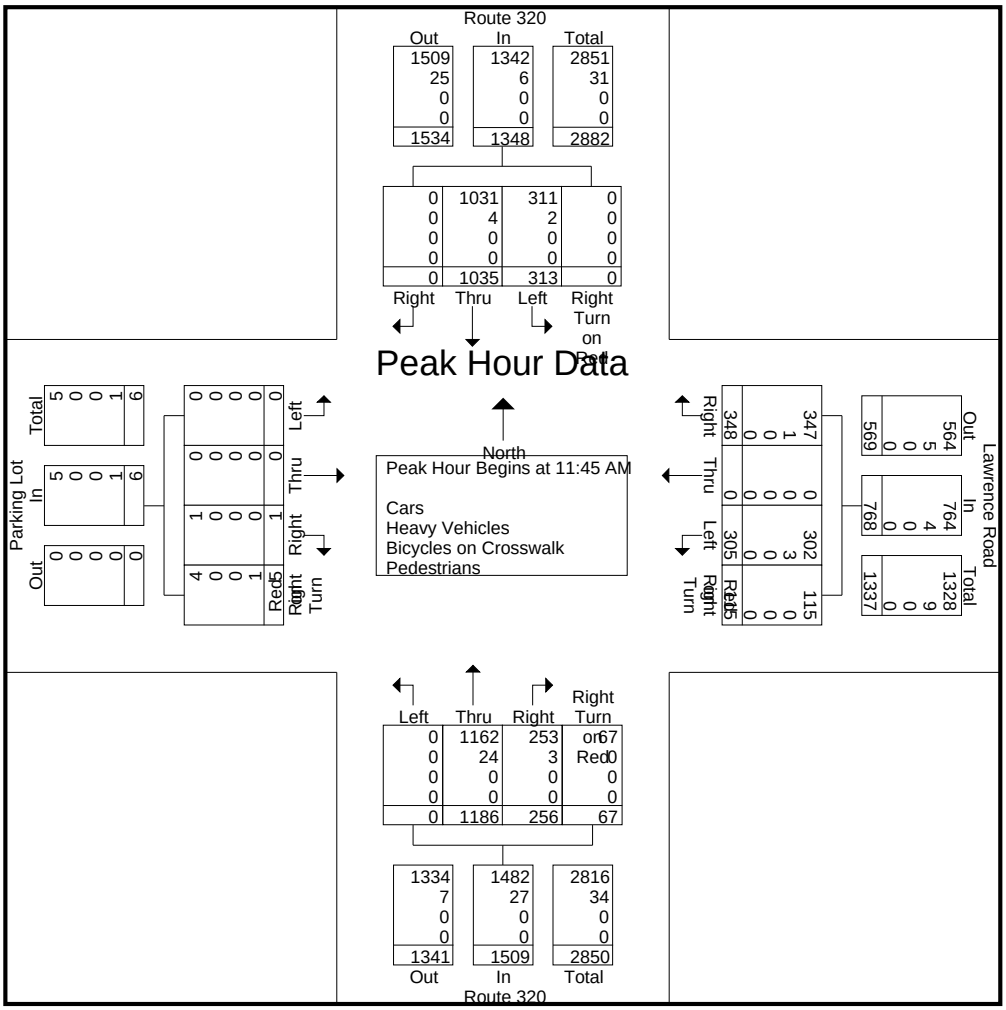


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Lawrence Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 01 Sat
Site Code : 01
Start Date : 9/6/2014
Page No : 4

| | Route 320 Southbound | | | | | Lawrence Road Westbound | | | | | Route 320 Northbound | | | | | Parking Lot Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 11:45 AM | 0 | **313** | 75 | 0 | **388** | 89 | 0 | 55 | 27 | 171 | 54 | 274 | 0 | **24** | 352 | 0 | 0 | 0 | 1 | 1 | 912 |
| 12:00 PM | 0 | 236 | 76 | 0 | 312 | 90 | 0 | 65 | **32** | 187 | 69 | **327** | 0 | 19 | **415** | **1** | 0 | 0 | **2** | **3** | 917 |
| 12:15 PM | 0 | 219 | **86** | 0 | 305 | **95** | 0 | **110** | 32 | **237** | 61 | 260 | 0 | 14 | 335 | 0 | 0 | 0 | 1 | 1 | 878 |
| 12:30 PM | 0 | 267 | 76 | 0 | 343 | 74 | 0 | 75 | 24 | 173 | **72** | 325 | 0 | 10 | 407 | 0 | 0 | 0 | 1 | 1 | **924** |
| Total Volume | 0 | 1035 | 313 | 0 | 1348 | 348 | 0 | 305 | 115 | 768 | 256 | 1186 | 0 | 67 | 1509 | 1 | 0 | 0 | 5 | 6 | 3631 |
| % App. Total | 0 | 76.8 | 23.2 | 0 | | 45.3 | 0 | 39.7 | 15 | | 17 | 78.6 | 0 | 4.4 | | 16.7 | 0 | 0 | 83.3 | | |
| PHF | .000 | .827 | .910 | .000 | .869 | .916 | .000 | .693 | .898 | .810 | .889 | .907 | .000 | .698 | .909 | .250 | .000 | .000 | .625 | .500 | .982 |
| Cars | 0 | 1031 | | | | | | | | | | 1162 | | | | | | | | | |
| % Cars | 0 | 99.6 | 99.4 | 0 | 99.6 | 99.7 | 0 | 99.0 | 100 | 99.5 | 98.8 | 98.0 | 0 | 100 | 98.2 | 100 | 0 | 0 | 80.0 | 83.3 | 99.0 |
| Heavy Vehicles | 0 | 4 | 2 | 0 | 6 | 1 | 0 | 3 | 0 | 4 | 3 | 24 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 37 |
| % Heavy Vehicles | 0 | 0.4 | 0.6 | 0 | 0.4 | 0.3 | 0 | 1.0 | 0 | 0.5 | 1.2 | 2.0 | 0 | 0 | 1.8 | 0 | 0 | 0 | 0 | 0 | 1.0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20.0 | 16.7 | 0.0 |



# *SPROUL ROAD & WILLIAMSBURG DRIVE/ SHOPPING CENTER DRIVEWAY*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Williamsburg Dr
Date: Wednesday, April 9, 2014
Counter: MIO

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 1

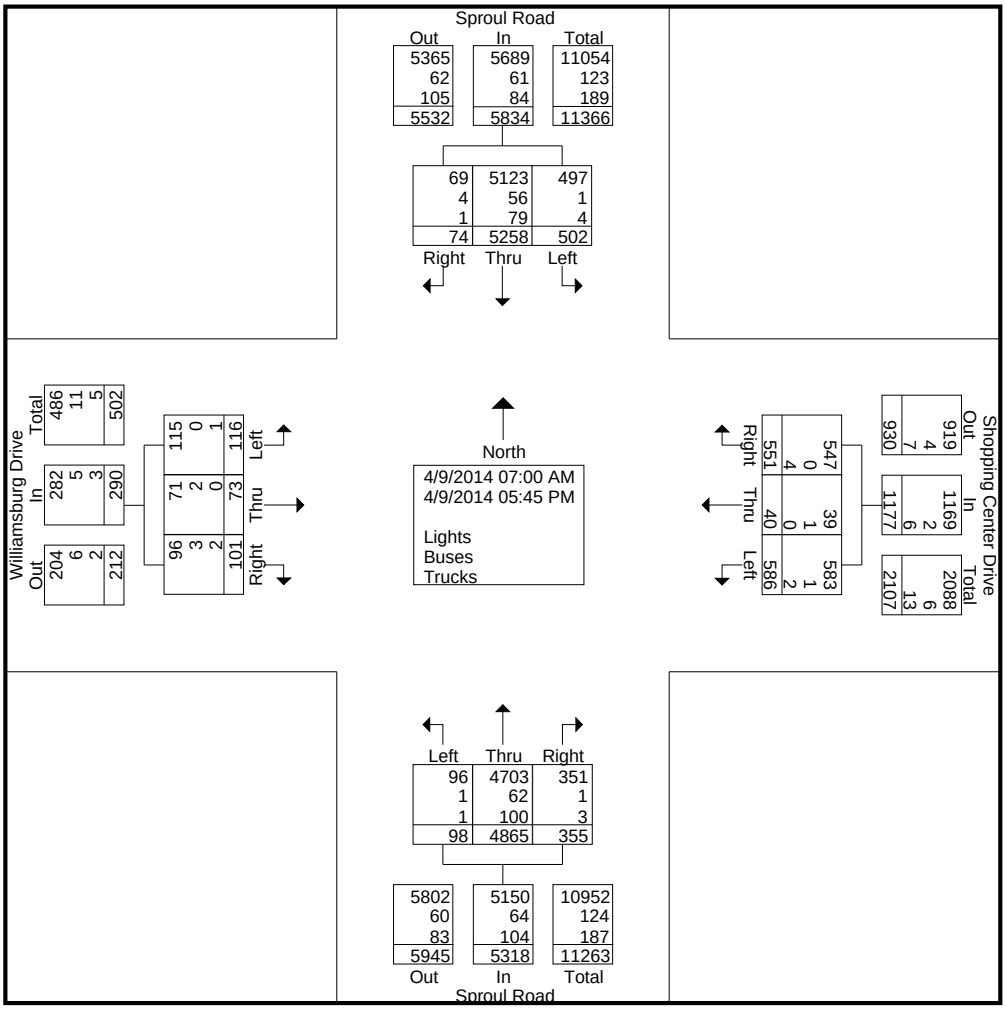
Groups Printed- Lights - Buses - Trucks

| | Williamsburg Drive Eastbound | | | | | Shopping Center Drive Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 7 | 3 | 6 | 0 | 16 | 5 | 0 | 21 | 0 | 26 | 3 | 357 | 10 | 0 | 370 | 10 | 175 | 3 | 0 | 188 | 0 | 600 | 600 |
| 07:15 AM | 7 | 2 | 5 | 0 | 14 | 9 | 0 | 14 | 0 | 23 | 12 | 363 | 11 | 0 | 386 | 16 | 239 | 1 | 0 | 256 | 0 | 679 | 679 |
| 07:30 AM | 9 | 8 | 6 | 0 | 23 | 12 | 0 | 15 | 0 | 27 | 7 | 362 | 19 | 0 | 388 | 11 | 284 | 5 | 0 | 300 | 0 | 738 | 738 |
| 07:45 AM | 8 | 6 | 7 | 0 | 21 | 19 | 1 | 17 | 0 | 37 | 6 | 350 | 21 | 0 | 377 | 31 | 245 | 2 | 0 | 278 | 0 | 713 | 713 |
| Total | 31 | 19 | 24 | 0 | 74 | 45 | 1 | 67 | 0 | 113 | 28 | 1432 | 61 | 0 | 1521 | 68 | 943 | 11 | 0 | 1022 | 0 | 2730 | 2730 |
| 08:00 AM | 10 | 1 | 3 | 0 | 14 | 15 | 1 | 23 | 0 | 39 | 2 | 336 | 14 | 0 | 352 | 22 | 271 | 3 | 0 | 296 | 0 | 701 | 701 |
| 08:15 AM | 8 | 4 | 11 | 0 | 23 | 17 | 4 | 22 | 0 | 43 | 4 | 385 | 17 | 0 | 406 | 22 | 263 | 6 | 0 | 291 | 0 | 763 | 763 |
| 08:30 AM | 12 | 5 | 8 | 0 | 25 | 16 | 0 | 19 | 0 | 35 | 9 | 364 | 24 | 0 | 397 | 16 | 263 | 6 | 0 | 285 | 0 | 742 | 742 |
| 08:45 AM | 9 | 5 | 3 | 0 | 17 | 22 | 1 | 13 | 0 | 36 | 5 | 358 | 24 | 0 | 387 | 21 | 261 | 2 | 0 | 284 | 0 | 724 | 724 |
| Total | 39 | 15 | 25 | 0 | 79 | 70 | 6 | 77 | 0 | 153 | 20 | 1443 | 79 | 0 | 1542 | 81 | 1058 | 17 | 0 | 1156 | 0 | 2930 | 2930 |
| 04:00 PM | 9 | 2 | 9 | 0 | 20 | 73 | 7 | 44 | 0 | 124 | 12 | 243 | 22 | 0 | 277 | 38 | 360 | 6 | 0 | 404 | 0 | 825 | 825 |
| 04:15 PM | 7 | 5 | 11 | 0 | 23 | 63 | 5 | 48 | 0 | 116 | 6 | 248 | 27 | 0 | 281 | 48 | 379 | 7 | 0 | 434 | 0 | 854 | 854 |
| 04:30 PM | 8 | 3 | 8 | 0 | 19 | 67 | 0 | 55 | 0 | 122 | 4 | 244 | 40 | 0 | 288 | 48 | 411 | 6 | 0 | 465 | 0 | 894 | 894 |
| 04:45 PM | 3 | 7 | 6 | 0 | 16 | 59 | 7 | 62 | 0 | 128 | 6 | 260 | 25 | 0 | 291 | 50 | 421 | 6 | 0 | 477 | 0 | 912 | 912 |
| Total | 27 | 17 | 34 | 0 | 78 | 262 | 19 | 209 | 0 | 490 | 28 | 995 | 114 | 0 | 1137 | 184 | 1571 | 25 | 0 | 1780 | 0 | 3485 | 3485 |
| 05:00 PM | 3 | 5 | 6 | 0 | 14 | 72 | 6 | 42 | 0 | 120 | 4 | 248 | 28 | 0 | 280 | 44 | 426 | 6 | 0 | 476 | 0 | 890 | 890 |
| 05:15 PM | 8 | 5 | 5 | 0 | 18 | 47 | 0 | 50 | 0 | 97 | 4 | 295 | 32 | 0 | 331 | 43 | 440 | 1 | 0 | 484 | 0 | 930 | 930 |
| 05:30 PM | 1 | 3 | 6 | 0 | 10 | 43 | 3 | 58 | 0 | 104 | 4 | 242 | 19 | 0 | 265 | 29 | 426 | 3 | 0 | 458 | 0 | 837 | 837 |
| 05:45 PM | 7 | 9 | 1 | 0 | 17 | 47 | 5 | 48 | 0 | 100 | 10 | 210 | 22 | 0 | 242 | 53 | 394 | 11 | 0 | 458 | 0 | 817 | 817 |
| Total | 19 | 22 | 18 | 0 | 59 | 209 | 14 | 198 | 0 | 421 | 22 | 995 | 101 | 0 | 1118 | 169 | 1686 | 21 | 0 | 1876 | 0 | 3474 | 3474 |
| Grand Total | 116 | 73 | 101 | 0 | 290 | 586 | 40 | 551 | 0 | 1177 | 98 | 4865 | 355 | 0 | 5318 | 502 | 5258 | 74 | 0 | 5834 | 0 | 12619 | 12619 |
| Apprch % | 40 | 25.2 | 34.8 | | | 49.8 | 3.4 | 46.8 | | | 1.8 | 91.5 | 6.7 | | | 8.6 | 90.1 | 1.3 | | | | | |
| Total % | 0.9 | 0.6 | 0.8 | | 2.3 | 4.6 | 0.3 | 4.4 | | 9.3 | 0.8 | 38.6 | 2.8 | | 42.1 | 4 | 41.7 | 0.6 | | 46.2 | 0 | 100 | |
| Lights | 115 | 71 | 96 | | 282 | 583 | 39 | 547 | | 1169 | 96 | 4703 | 351 | | 5150 | 497 | 5123 | 69 | | 5689 | 0 | 0 | 12290 |
| % Lights | 99.1 | 97.3 | 95 | 0 | 97.2 | 99.5 | 97.5 | 99.3 | 0 | 99.3 | 98 | 96.7 | 98.9 | 0 | 96.8 | 99 | 97.4 | 93.2 | 0 | 97.5 | 0 | 0 | 97.4 |
| Buses | 0 | 2 | 3 | | 5 | 1 | 1 | 0 | | 2 | 1 | 62 | 1 | | 64 | 1 | 56 | 4 | | 61 | 0 | 0 | 132 |
| % Buses | 0 | 2.7 | 3 | 0 | 1.7 | 0.2 | 2.5 | 0 | 0 | 0.2 | 1 | 1.3 | 0.3 | 0 | 1.2 | 0.2 | 1.1 | 5.4 | 0 | 1 | 0 | 0 | 1 |
| Trucks | 1 | 0 | 2 | | 3 | 2 | 0 | 4 | | 6 | 1 | 100 | 3 | | 104 | 4 | 79 | 1 | | 84 | 0 | 0 | 197 |
| % Trucks | 0.9 | 0 | 2 | 0 | 1 | 0.3 | 0 | 0.7 | 0 | 0.5 | 1 | 2.1 | 0.8 | 0 | 2 | 0.8 | 1.5 | 1.4 | 0 | 1.4 | 0 | 0 | 1.6 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 2

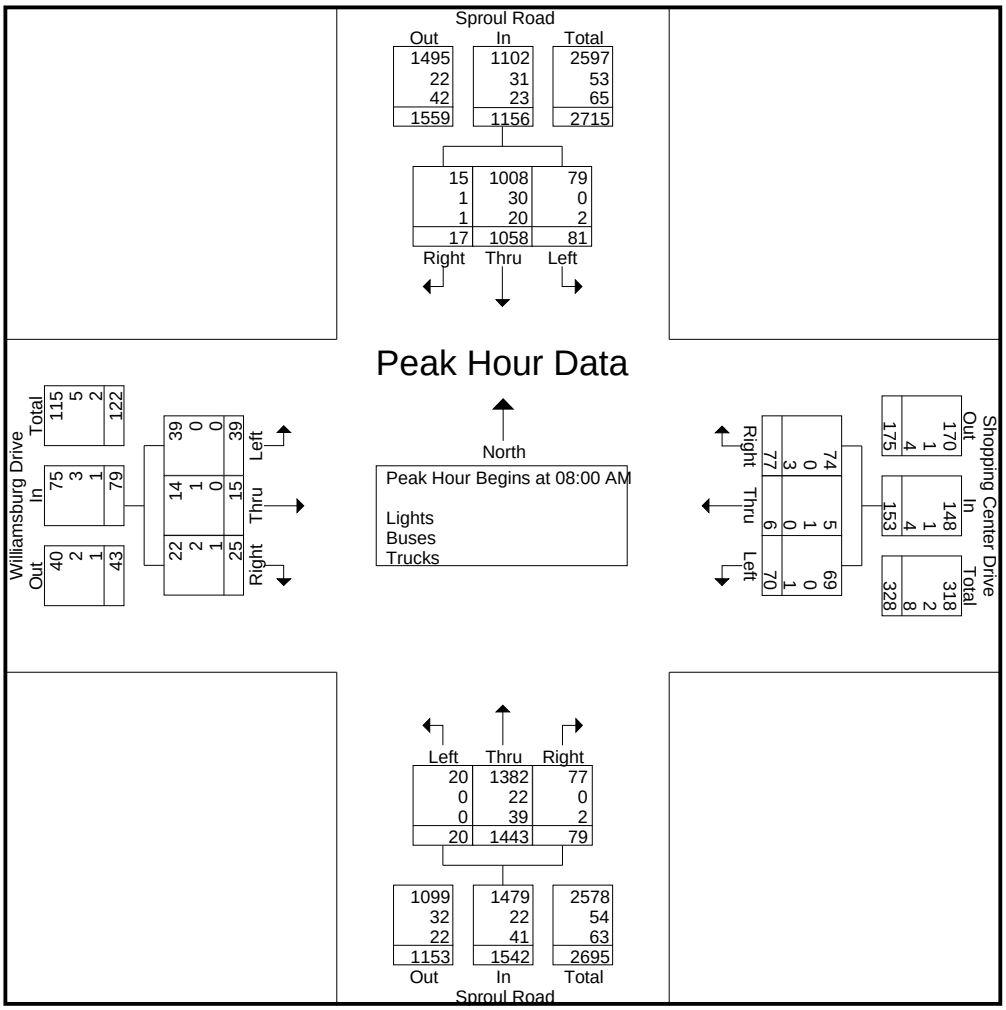


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 3

| | Williamsburg Drive Eastbound | | | | Shopping Center Drive Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | |
| 08:00 AM | 10 | 1 | 3 | 14 | 15 | 1 | **23** | 39 | 2 | 336 | 14 | 352 | **22** | **271** | 3 | **296** | 701 |
| 08:15 AM | 8 | 4 | **11** | 23 | 17 | **4** | 22 | **43** | 4 | **385** | 17 | **406** | 22 | 263 | **6** | 291 | **763** |
| 08:30 AM | **12** | **5** | 8 | **25** | 16 | 0 | 19 | 35 | **9** | 364 | **24** | 397 | 16 | 263 | 6 | 285 | 742 |
| 08:45 AM | 9 | 5 | 3 | 17 | **22** | 1 | 13 | 36 | 5 | 358 | 24 | 387 | 21 | 261 | 2 | 284 | 724 |
| Total Volume | 39 | 15 | 25 | 79 | 70 | 6 | 77 | 153 | 20 | 1443 | 79 | 1542 | 81 | 1058 | 17 | 1156 | 2930 |
| % App. Total | 49.4 | 19 | 31.6 | | 45.8 | 3.9 | 50.3 | | 1.3 | 93.6 | 5.1 | | 7 | 91.5 | 1.5 | | |
| PHF | .813 | .750 | .568 | .790 | .795 | .375 | .837 | .890 | .556 | .937 | .823 | .950 | .920 | .976 | .708 | .976 | .960 |
| Lights | 39 | 14 | 22 | 75 | 69 | 5 | 74 | 148 | 20 | 1382 | 77 | 1479 | 79 | 1008 | 15 | 1102 | 2804 |
| % Lights | 100 | 93.3 | 88.0 | 94.9 | 98.6 | 83.3 | 96.1 | 96.7 | 100 | 95.8 | 97.5 | 95.9 | 97.5 | 95.3 | 88.2 | 95.3 | 95.7 |
| Buses | 0 | 1 | 2 | 3 | 0 | 1 | 0 | 1 | 0 | 22 | 0 | 22 | 0 | 30 | 1 | 31 | 57 |
| % Buses | 0 | 6.7 | 8.0 | 3.8 | 0 | 16.7 | 0 | 0.7 | 0 | 1.5 | 0 | 1.4 | 0 | 2.8 | 5.9 | 2.7 | 1.9 |
| Trucks | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 4 | 0 | 39 | 2 | 41 | 2 | 20 | 1 | 23 | 69 |
| % Trucks | 0 | 0 | 4.0 | 1.3 | 1.4 | 0 | 3.9 | 2.6 | 0 | 2.7 | 2.5 | 2.7 | 2.5 | 1.9 | 5.9 | 2.0 | 2.4 |

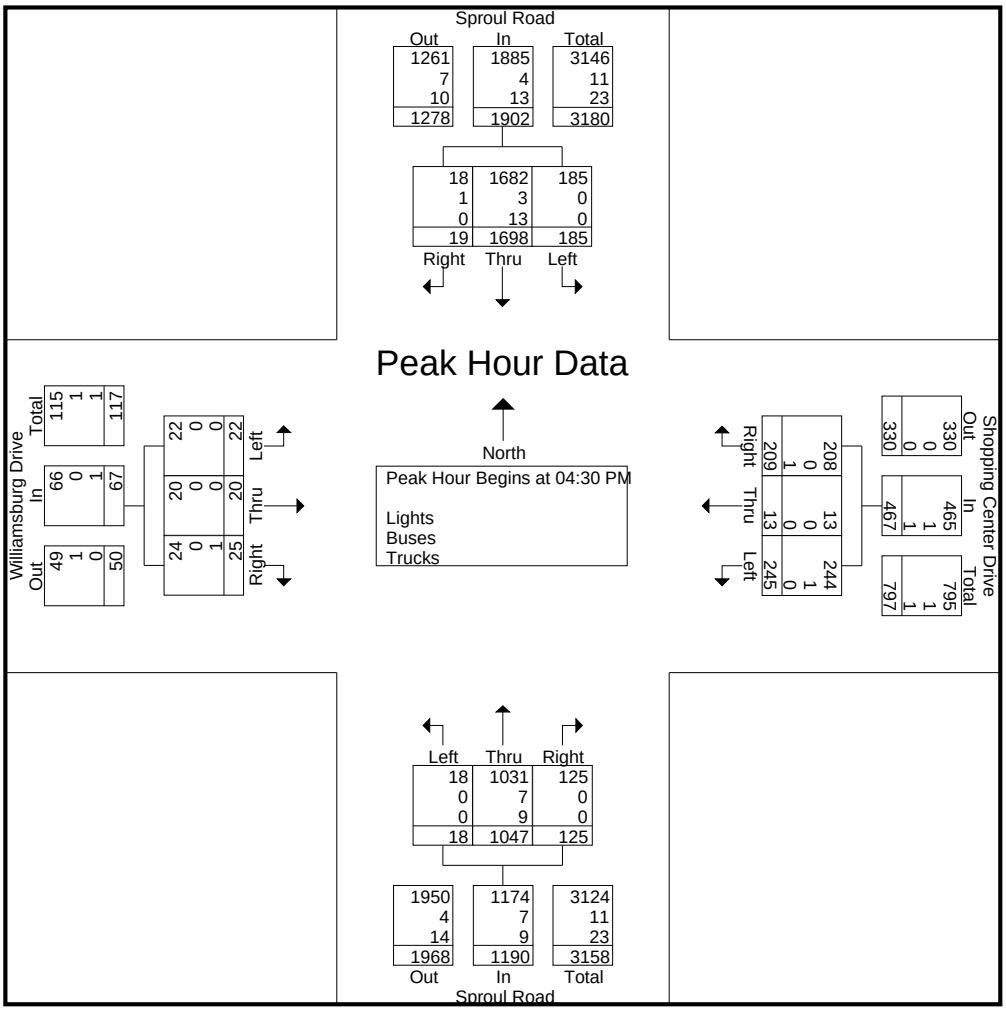


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 4

| | Williamsburg Drive Eastbound | | | | Shopping Center Drive Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | **8** | 3 | **8** | **19** | 67 | 0 | 55 | 122 | 4 | 244 | **40** | 288 | 48 | 411 | **6** | 465 | 894 |
| 04:45 PM | 3 | **7** | 6 | 16 | 59 | **7** | **62** | **128** | **6** | 260 | 25 | 291 | **50** | 421 | 6 | 477 | 912 |
| 05:00 PM | 3 | 5 | 6 | 14 | **72** | 6 | 42 | 120 | 4 | 248 | 28 | 280 | 44 | 426 | 6 | 476 | 890 |
| 05:15 PM | 8 | 5 | 5 | 18 | 47 | 0 | 50 | 97 | 4 | **295** | 32 | **331** | 43 | **440** | 1 | **484** | **930** |
| Total Volume | 22 | 20 | 25 | 67 | 245 | 13 | 209 | 467 | 18 | 1047 | 125 | 1190 | 185 | 1698 | 19 | 1902 | 3626 |
| % App. Total | 32.8 | 29.9 | 37.3 | | 52.5 | 2.8 | 44.8 | | 1.5 | 88 | 10.5 | | 9.7 | 89.3 | 1 | | |
| PHF | .688 | .714 | .781 | .882 | .851 | .464 | .843 | .912 | .750 | .887 | .781 | .899 | .925 | .965 | .792 | .982 | .975 |
| Lights | 22 | 20 | 24 | 66 | 244 | 13 | 208 | 465 | 18 | 1031 | 125 | 1174 | 185 | 1682 | 18 | 1885 | 3590 |
| % Lights | 100 | 100 | 96.0 | 98.5 | 99.6 | 100 | 99.5 | 99.6 | 100 | 98.5 | 100 | 98.7 | 100 | 99.1 | 94.7 | 99.1 | 99.0 |
| Buses | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 0 | 7 | 0 | 3 | 1 | 4 | 12 |
| % Buses | 0 | 0 | 0 | 0 | 0.4 | 0 | 0 | 0.2 | 0 | 0.7 | 0 | 0.6 | 0 | 0.2 | 5.3 | 0.2 | 0.3 |
| Trucks | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 9 | 0 | 13 | 0 | 13 | 24 |
| % Trucks | 0 | 0 | 4.0 | 1.5 | 0 | 0 | 0.5 | 0.2 | 0 | 0.9 | 0 | 0.8 | 0 | 0.8 | 0 | 0.7 | 0.7 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Williamsburg Dr
Date: Wednesday, April 9, 2014
Counter: MIO

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 1

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Williamsburg Drive Eastbound | | | | | Shopping Center Drive Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

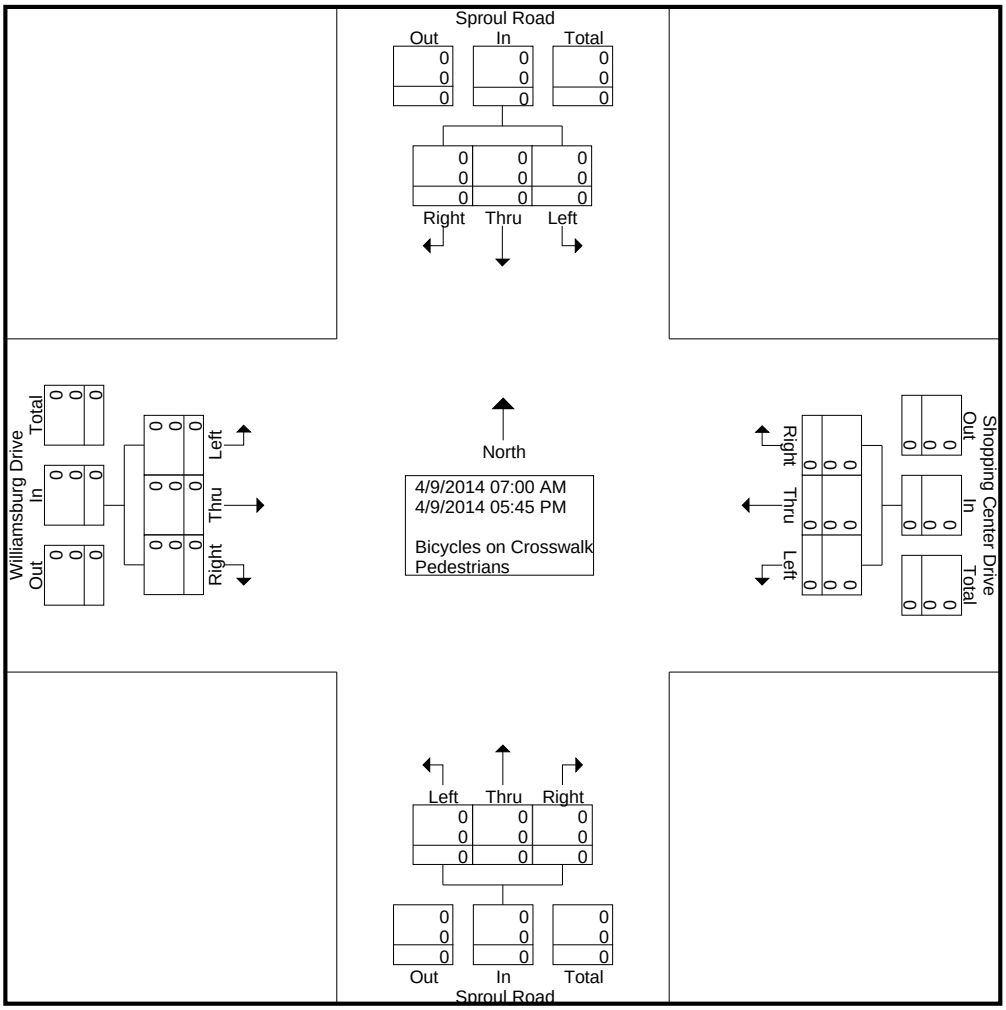
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 2

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Williamsburg Drive Eastbound | | | | | Shopping Center Drive Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 0 | 8 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 3 | 0 | 50 | 0 | 50 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 50 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 100 |

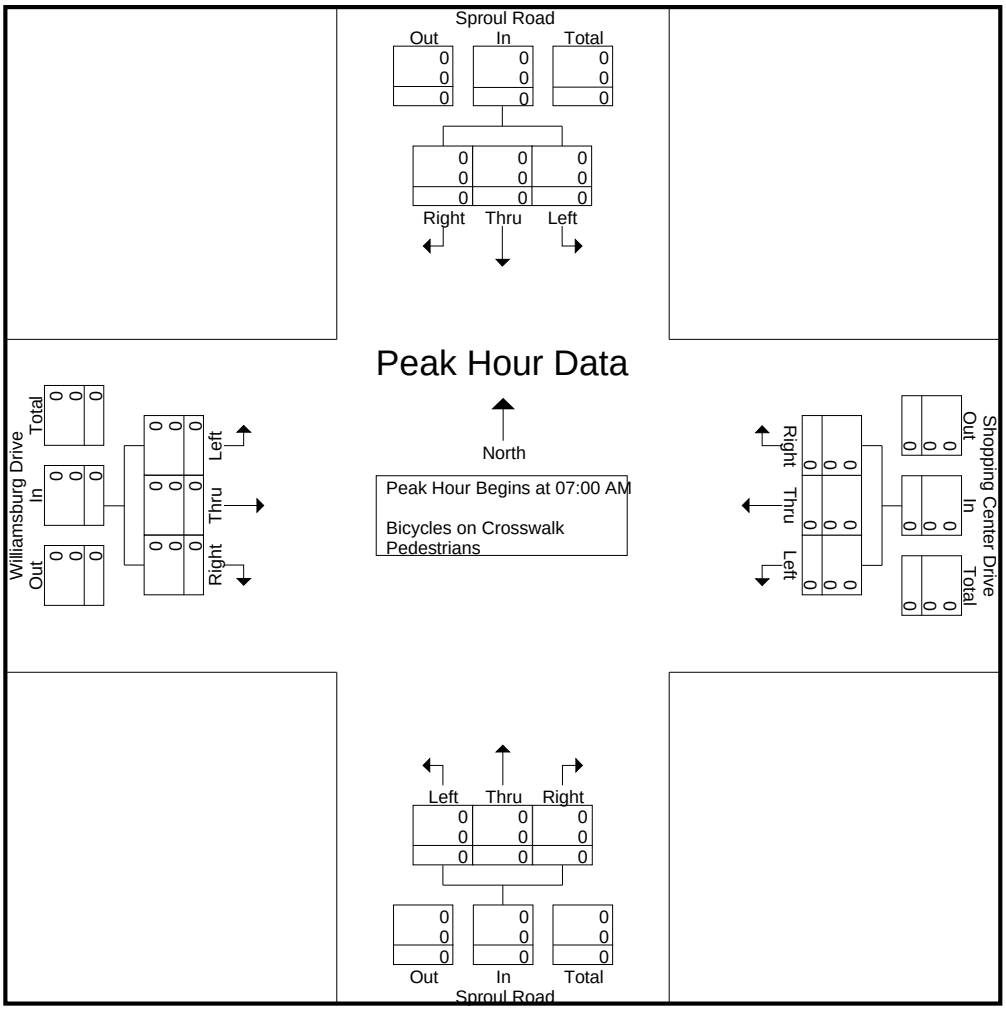


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 3

| | Williamsburg Drive Eastbound | | | | Shopping Center Drive Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

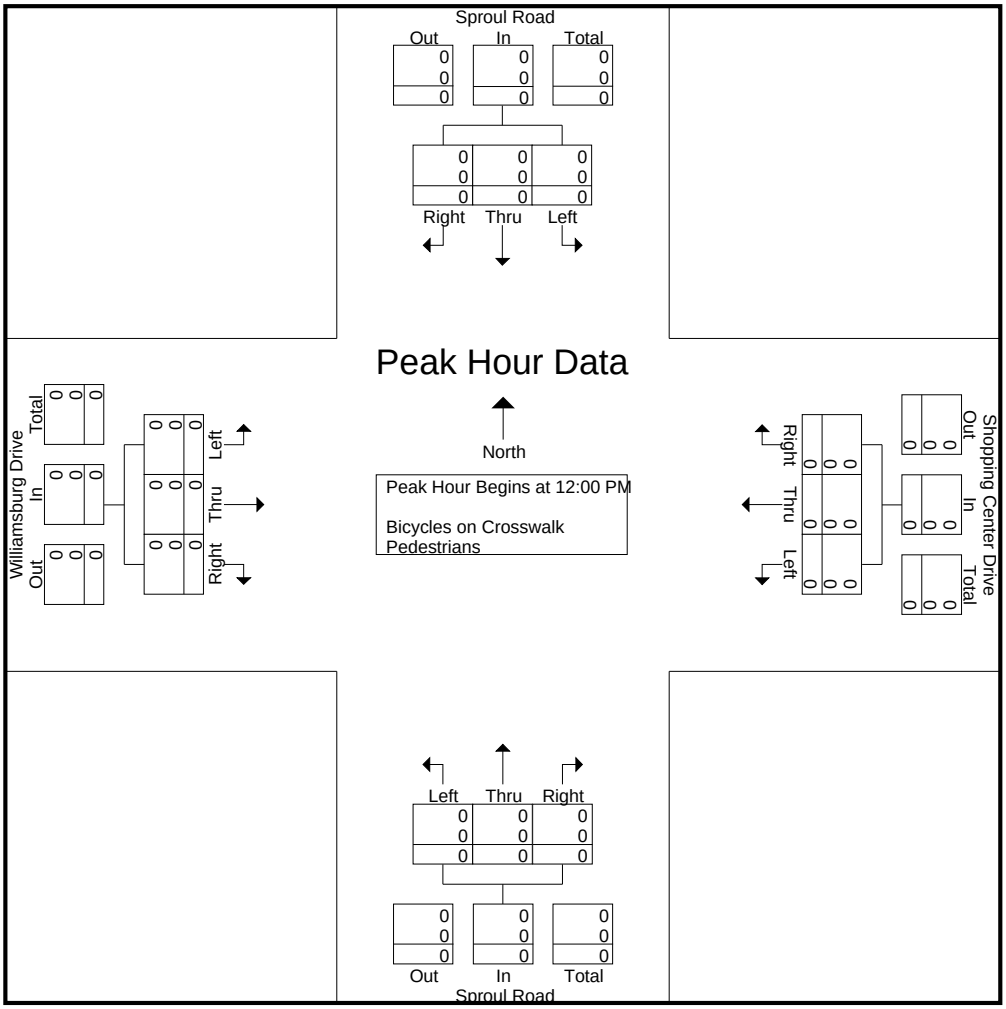


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Williamsburg Drive/Shopping Center Driveway
# Marple Township, Delaware County

File Name : 09_MS 0409 08_Sproul & Williamsburg
Site Code : 8
Start Date : 4/9/2014
Page No : 4

| | Williamsburg Drive Eastbound | | | | Shopping Center Drive Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Shopping Center
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 02 Sat
Site Code : 02
Start Date : 9/6/2014
Page No : 1

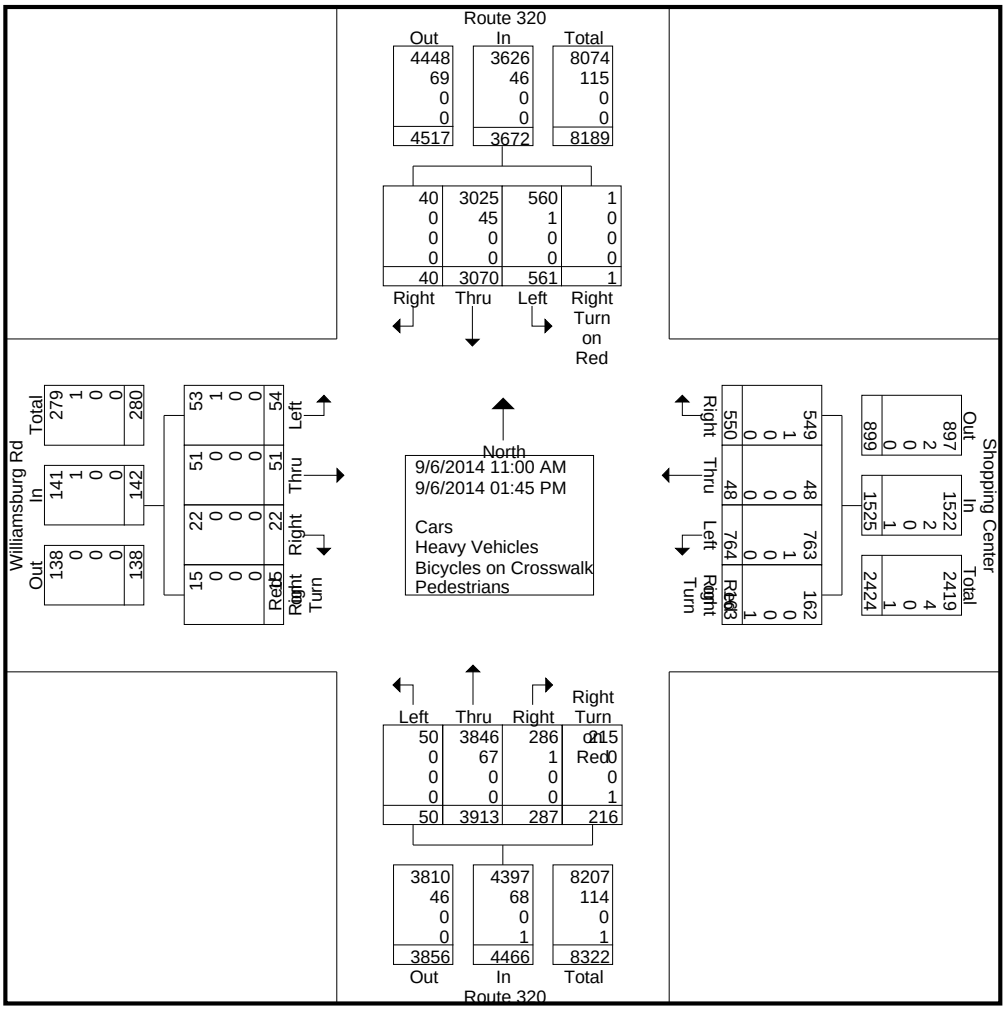
Groups Printed- Cars - Heavy Vehicles - Bicycles on Crosswalk - Pedestrians

| | Route 320 Southbound | | | | | Shopping Center Westbound | | | | | Route 320 Northbound | | | | | Williamsburg Rd Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 11:00 AM | 4 | 222 | 40 | 0 | 266 | 54 | 6 | 61 | 12 | 133 | 24 | 344 | 2 | 16 | 386 | 0 | 2 | 5 | 2 | 9 | 794 |
| 11:15 AM | 3 | 254 | 52 | 0 | 309 | 50 | 4 | 58 | 16 | 128 | 24 | 352 | 4 | 16 | 396 | 1 | 5 | 4 | 1 | 11 | 844 |
| 11:30 AM | 3 | 242 | 39 | 0 | 284 | 53 | 7 | 68 | 5 | 133 | 23 | 342 | 4 | 14 | 383 | 1 | 2 | 3 | 1 | 7 | 807 |
| 11:45 AM | 3 | 319 | 36 | 0 | 358 | 47 | 1 | 56 | 6 | 110 | 16 | 305 | 2 | 22 | 345 | 3 | 6 | 8 | 0 | 17 | 830 |
| Total | 13 | 1037 | 167 | 0 | 1217 | 204 | 18 | 243 | 39 | 504 | 87 | 1343 | 12 | 68 | 1510 | 5 | 15 | 20 | 4 | 44 | 3275 |
| 12:00 PM | 4 | 279 | 44 | 0 | 327 | 47 | 5 | 49 | 11 | 112 | 24 | 333 | 3 | 14 | 374 | 1 | 1 | 4 | 4 | 10 | 823 |
| 12:15 PM | 4 | 291 | 44 | 0 | 339 | 52 | 3 | 65 | 12 | 132 | 24 | 285 | 6 | 17 | 332 | 1 | 4 | 4 | 0 | 9 | 812 |
| 12:30 PM | 0 | 311 | 51 | 1 | 363 | 46 | 4 | 65 | 12 | 127 | 27 | 329 | 7 | 27 | 390 | 4 | 6 | 2 | 3 | 15 | 895 |
| 12:45 PM | 2 | 236 | 58 | 0 | 296 | 42 | 2 | 59 | 11 | 114 | 28 | 339 | 3 | 17 | 387 | 2 | 5 | 6 | 0 | 13 | 810 |
| Total | 10 | 1117 | 197 | 1 | 1325 | 187 | 14 | 238 | 46 | 485 | 103 | 1286 | 19 | 75 | 1483 | 8 | 16 | 16 | 7 | 47 | 3340 |
| 01:00 PM | 4 | 232 | 56 | 0 | 292 | 39 | 2 | 69 | 21 | 131 | 29 | 342 | 5 | 25 | 401 | 4 | 4 | 7 | 1 | 16 | 840 |
| 01:15 PM | 7 | 239 | 44 | 0 | 290 | 45 | 5 | 65 | 16 | 131 | 27 | 333 | 4 | 16 | 380 | 2 | 6 | 3 | 0 | 11 | 812 |
| 01:30 PM | 3 | 218 | 40 | 0 | 261 | 43 | 6 | 72 | 17 | 138 | 21 | 319 | 5 | 8 | 353 | 0 | 2 | 6 | 3 | 11 | 763 |
| 01:45 PM | 3 | 227 | 57 | 0 | 287 | 32 | 3 | 77 | 24 | 136 | 20 | 290 | 5 | 24 | 339 | 3 | 8 | 2 | 0 | 13 | 775 |
| Total | 17 | 916 | 197 | 0 | 1130 | 159 | 16 | 283 | 78 | 536 | 97 | 1284 | 19 | 73 | 1473 | 9 | 20 | 18 | 4 | 51 | 3190 |
| Grand Total | 40 | 3070 | 561 | 1 | 3672 | 550 | 48 | 764 | 163 | 1525 | 287 | 3913 | 50 | 216 | 4466 | 22 | 51 | 54 | 15 | 142 | 9805 |
| Apprch % | 1.1 | 83.6 | 15.3 | 0 | | 36.1 | 3.1 | 50.1 | 10.7 | | 6.4 | 87.6 | 1.1 | 4.8 | | 15.5 | 35.9 | 38 | 10.6 | | |
| Total % | 0.4 | 31.3 | 5.7 | 0 | 37.5 | 5.6 | 0.5 | 7.8 | 1.7 | 15.6 | 2.9 | 39.9 | 0.5 | 2.2 | 45.5 | 0.2 | 0.5 | 0.6 | 0.2 | 1.4 | |
| Cars | 40 | 3025 | 560 | 1 | 3626 | 549 | 48 | 763 | 162 | 1522 | 286 | 3846 | 50 | 215 | 4397 | 22 | 51 | 53 | 15 | 141 | 9686 |
| % Cars | 100 | 98.5 | 99.8 | 100 | 98.7 | 99.8 | 100 | 99.9 | 99.4 | 99.8 | 99.7 | 98.3 | 100 | 99.5 | 98.5 | 100 | 100 | 98.1 | 100 | 99.3 | 98.8 |
| Heavy Vehicles | 0 | 45 | 1 | 0 | 46 | 1 | 0 | 1 | 0 | 2 | 1 | 67 | 0 | 0 | 68 | 0 | 0 | 1 | 0 | 1 | 117 |
| % Heavy Vehicles | 0 | 1.5 | 0.2 | 0 | 1.3 | 0.2 | 0 | 0.1 | 0 | 0.1 | 0.3 | 1.7 | 0 | 0 | 1.5 | 0 | 0 | 1.9 | 0 | 0.7 | 1.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0.1 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Shopping Center
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 02 Sat
Site Code : 02
Start Date : 9/6/2014
Page No : 2

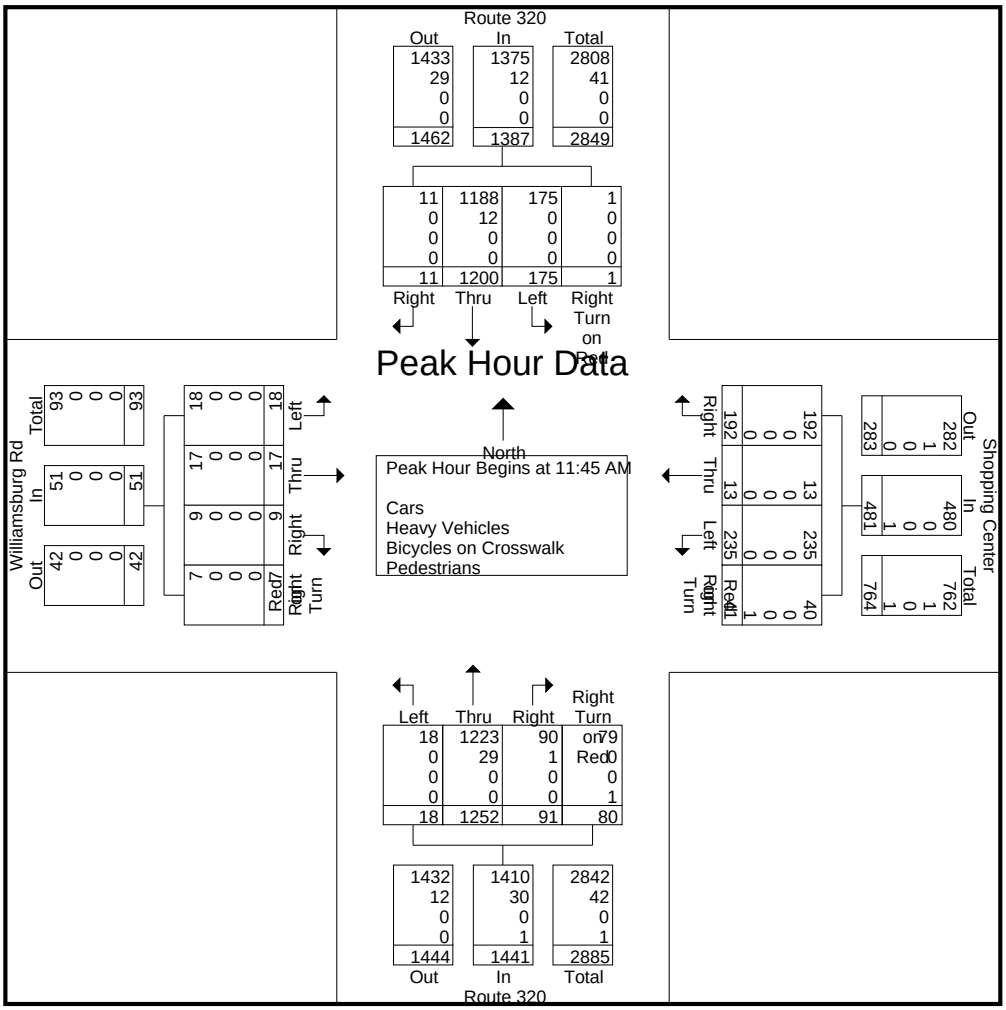


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Shopping Center
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 02 Sat
Site Code : 02
Start Date : 9/6/2014
Page No : 4

| | Route 320 Southbound | | | | | Shopping Center Westbound | | | | | Route 320 Northbound | | | | | Williamsburg Rd Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 11:45 AM | 3 | **319** | 36 | 0 | 358 | 47 | 1 | 56 | 6 | 110 | 16 | 305 | 2 | 22 | 345 | 3 | **6** | **8** | 0 | **17** | 830 |
| 12:00 PM | **4** | 279 | 44 | 0 | 327 | 47 | **5** | 49 | 11 | 112 | 24 | **333** | 3 | 14 | 374 | 1 | 1 | 4 | **4** | 10 | 823 |
| 12:15 PM | 4 | 291 | 44 | 0 | 339 | **52** | 3 | **65** | **12** | **132** | 24 | 285 | 6 | 17 | 332 | 1 | 4 | 4 | 0 | 9 | 812 |
| 12:30 PM | 0 | 311 | **51** | **1** | **363** | 46 | 4 | 65 | 12 | 127 | **27** | 329 | **7** | **27** | **390** | **4** | 6 | 2 | 3 | 15 | **895** |
| Total Volume | 11 | 1200 | 175 | 1 | 1387 | 192 | 13 | 235 | 41 | 481 | 91 | 1252 | 18 | 80 | 1441 | 9 | 17 | 18 | 7 | 51 | 3360 |
| % App. Total | 0.8 | 86.5 | 12.6 | 0.1 | | 39.9 | 2.7 | 48.9 | 8.5 | | 6.3 | 86.9 | 1.2 | 5.6 | | 17.6 | 33.3 | 35.3 | 13.7 | | |
| PHF | .688 | .940 | .858 | .250 | .955 | .923 | .650 | .904 | .854 | .911 | .843 | .940 | .643 | .741 | .924 | .563 | .708 | .563 | .438 | .750 | .939 |
| Cars | 11 | 1188 | | | | | | | | | | 1223 | | | | | | | | | |
| % Cars | 100 | 99.0 | 100 | 100 | 99.1 | 100 | 100 | 100 | 97.6 | 99.8 | 98.9 | 97.7 | 100 | 98.8 | 97.8 | 100 | 100 | 100 | 100 | 100 | 98.7 |
| Heavy Vehicles | 0 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 29 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 42 |
| % Heavy Vehicles | 0 | 1.0 | 0 | 0 | 0.9 | 0 | 0 | 0 | 0 | 0 | 1.1 | 2.3 | 0 | 0 | 2.1 | 0 | 0 | 0 | 0 | 0 | 1.3 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 0.2 | 0 | 0 | 0 | 1.3 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 |



## *SPROUL ROAD & REED ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Reed Road
Date: Tuesday, April 8, 2014
Counter: MIO

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 1

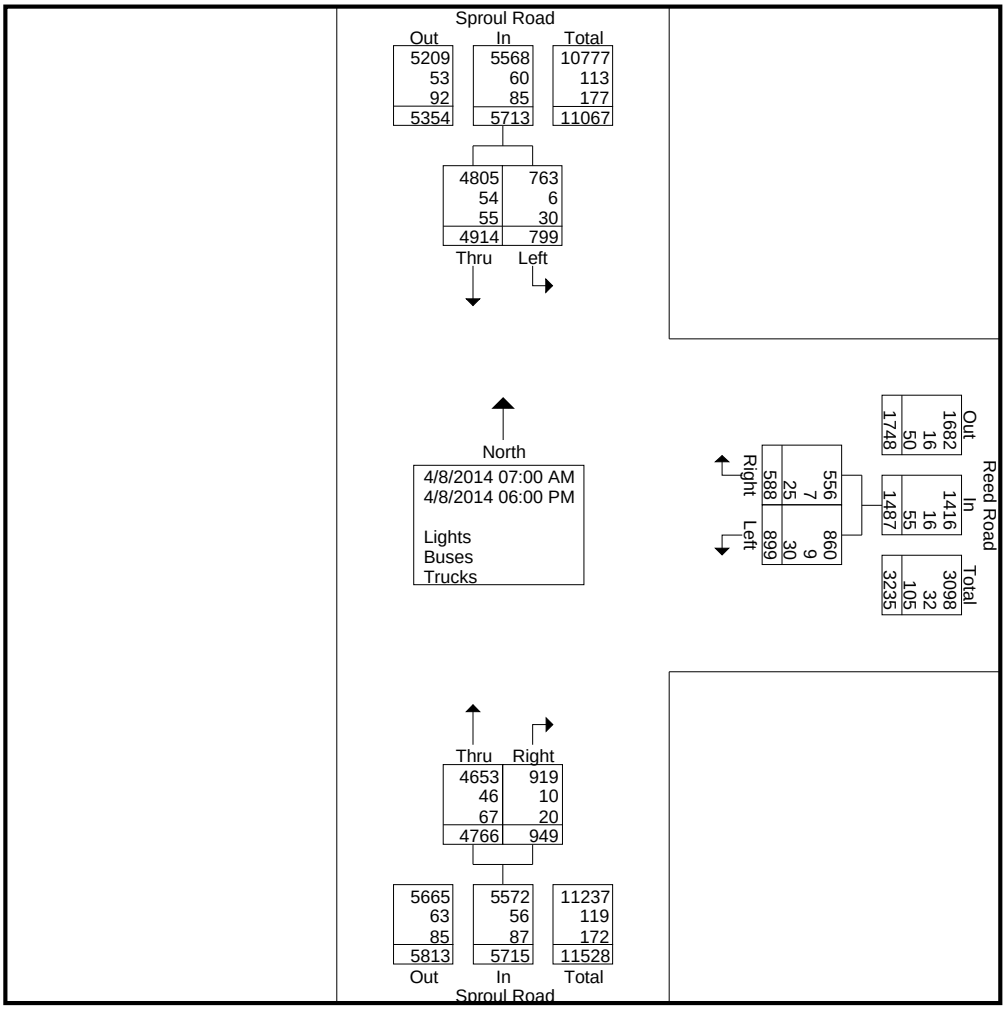
Groups Printed- Lights - Buses - Trucks

| | Reed Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 30 | 46 | 0 | 76 | 334 | 42 | 0 | 376 | 28 | 161 | 0 | 189 | 0 | 641 | 641 |
| 07:15 AM | 31 | 39 | 0 | 70 | 373 | 42 | 0 | 415 | 38 | 247 | 0 | 285 | 0 | 770 | 770 |
| 07:30 AM | 46 | 49 | 0 | 95 | 356 | 35 | 0 | 391 | 31 | 265 | 0 | 296 | 0 | 782 | 782 |
| 07:45 AM | 42 | 40 | 0 | 82 | 387 | 68 | 0 | 455 | 35 | 225 | 0 | 260 | 0 | 797 | 797 |
| Total | 149 | 174 | 0 | 323 | 1450 | 187 | 0 | 1637 | 132 | 898 | 0 | 1030 | 0 | 2990 | 2990 |
| 08:00 AM | 34 | 39 | 0 | 73 | 369 | 100 | 0 | 469 | 43 | 305 | 0 | 348 | 0 | 890 | 890 |
| 08:15 AM | 49 | 35 | 0 | 84 | 361 | 61 | 0 | 422 | 46 | 220 | 0 | 266 | 0 | 772 | 772 |
| 08:30 AM | 45 | 37 | 0 | 82 | 331 | 49 | 0 | 380 | 41 | 217 | 0 | 258 | 0 | 720 | 720 |
| 08:45 AM | 59 | 30 | 0 | 89 | 319 | 62 | 0 | 381 | 51 | 198 | 0 | 249 | 0 | 719 | 719 |
| Total | 187 | 141 | 0 | 328 | 1380 | 272 | 0 | 1652 | 181 | 940 | 0 | 1121 | 0 | 3101 | 3101 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| 04:00 PM | 80 | 30 | 0 | 110 | 210 | 61 | 0 | 271 | 55 | 369 | 0 | 424 | 0 | 805 | 805 |
| 04:15 PM | 56 | 24 | 0 | 80 | 228 | 83 | 0 | 311 | 54 | 380 | 0 | 434 | 0 | 825 | 825 |
| 04:30 PM | 74 | 34 | 0 | 108 | 272 | 60 | 0 | 332 | 62 | 365 | 0 | 427 | 0 | 867 | 867 |
| 04:45 PM | 78 | 31 | 0 | 109 | 254 | 58 | 0 | 312 | 61 | 371 | 0 | 432 | 0 | 853 | 853 |
| Total | 288 | 119 | 0 | 407 | 964 | 262 | 0 | 1226 | 232 | 1485 | 0 | 1717 | 0 | 3350 | 3350 |
| 05:00 PM | 93 | 52 | 0 | 145 | 260 | 57 | 0 | 317 | 63 | 434 | 0 | 497 | 0 | 959 | 959 |
| 05:15 PM | 69 | 42 | 0 | 111 | 243 | 59 | 0 | 302 | 62 | 385 | 0 | 447 | 0 | 860 | 860 |
| 05:30 PM | 62 | 25 | 0 | 87 | 255 | 64 | 0 | 319 | 70 | 412 | 0 | 482 | 0 | 888 | 888 |
| 05:45 PM | 51 | 35 | 0 | 86 | 214 | 48 | 0 | 262 | 58 | 359 | 0 | 417 | 0 | 765 | 765 |
| Total | 275 | 154 | 0 | 429 | 972 | 228 | 0 | 1200 | 253 | 1590 | 0 | 1843 | 0 | 3472 | 3472 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Grand Total | 899 | 588 | 0 | 1487 | 4766 | 949 | 0 | 5715 | 799 | 4914 | 0 | 5713 | 0 | 12915 | 12915 |
| Apprch % | 60.5 | 39.5 | | | 83.4 | 16.6 | | | 14 | 86 | | | | | |
| Total % | 7 | 4.6 | | 11.5 | 36.9 | 7.3 | | 44.3 | 6.2 | 38 | | 44.2 | 0 | 100 | |
| Lights | 860 | 556 | | 1416 | 4653 | 919 | | 5572 | 763 | 4805 | | 5568 | 0 | 0 | 12556 |
| % Lights | 95.7 | 94.6 | 0 | 95.2 | 97.6 | 96.8 | 0 | 97.5 | 95.5 | 97.8 | 0 | 97.5 | 0 | 0 | 97.2 |
| Buses | 9 | 7 | | 16 | 46 | 10 | | 56 | 6 | 54 | | 60 | 0 | 0 | 132 |
| % Buses | 1 | 1.2 | 0 | 1.1 | 1 | 1.1 | 0 | 1 | 0.8 | 1.1 | 0 | 1.1 | 0 | 0 | 1 |
| Trucks | 30 | 25 | | 55 | 67 | 20 | | 87 | 30 | 55 | | 85 | 0 | 0 | 227 |
| % Trucks | 3.3 | 4.3 | 0 | 3.7 | 1.4 | 2.1 | 0 | 1.5 | 3.8 | 1.1 | 0 | 1.5 | 0 | 0 | 1.8 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 2

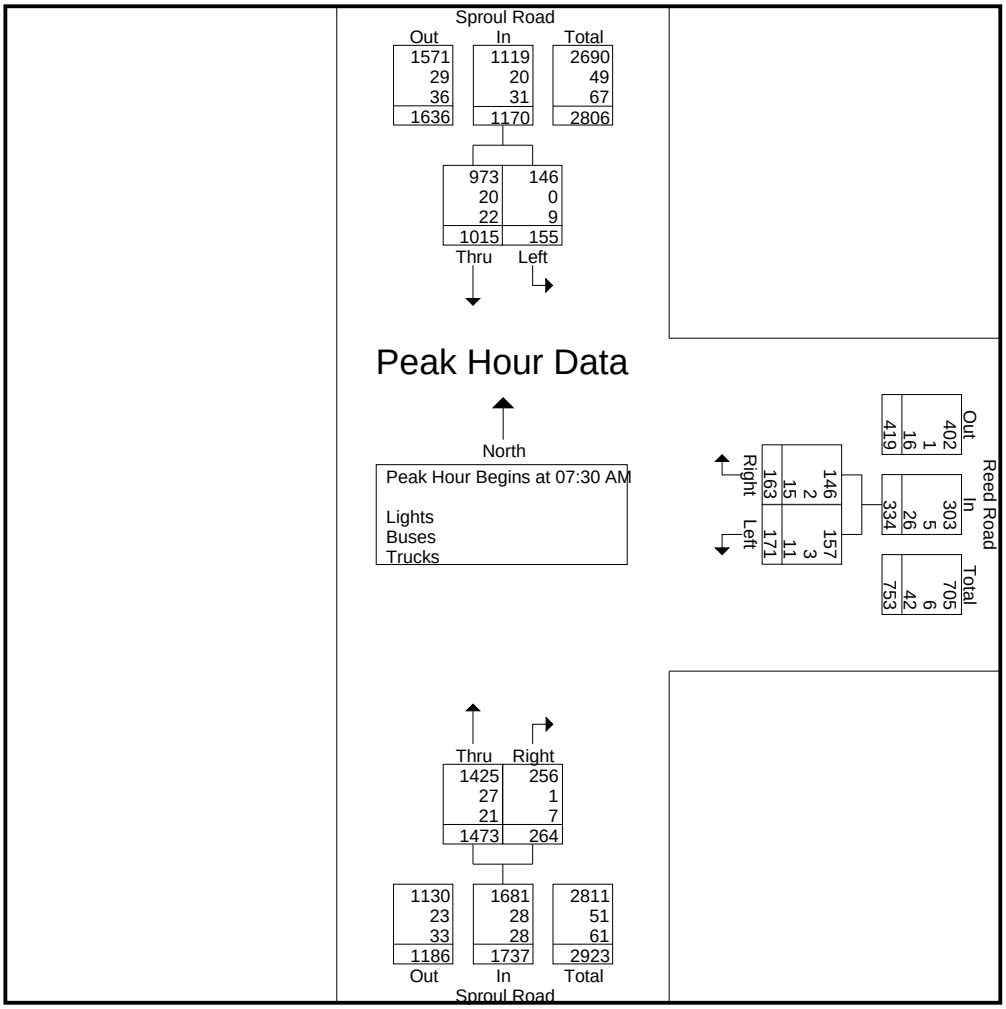


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 3

| | Reed Road Westbound | | | Sproul Road Northbound | | | Sproul Road Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 46 | **49** | **95** | 356 | 35 | 391 | 31 | 265 | 296 | 782 |
| 07:45 AM | 42 | 40 | 82 | **387** | 68 | 455 | 35 | 225 | 260 | 797 |
| 08:00 AM | 34 | 39 | 73 | 369 | **100** | **469** | 43 | **305** | **348** | **890** |
| 08:15 AM | **49** | 35 | 84 | 361 | 61 | 422 | **46** | 220 | 266 | 772 |
| Total Volume | 171 | 163 | 334 | 1473 | 264 | 1737 | 155 | 1015 | 1170 | 3241 |
| % App. Total | 51.2 | 48.8 | | 84.8 | 15.2 | | 13.2 | 86.8 | | |
| PHF | .872 | .832 | .879 | .952 | .660 | .926 | .842 | .832 | .841 | .910 |
| Lights | 157 | 146 | 303 | 1425 | 256 | 1681 | 146 | 973 | 1119 | 3103 |
| % Lights | 91.8 | 89.6 | 90.7 | 96.7 | 97.0 | 96.8 | 94.2 | 95.9 | 95.6 | 95.7 |
| Buses | 3 | 2 | 5 | 27 | 1 | 28 | 0 | 20 | 20 | 53 |
| % Buses | 1.8 | 1.2 | 1.5 | 1.8 | 0.4 | 1.6 | 0 | 2.0 | 1.7 | 1.6 |
| Trucks | 11 | 15 | 26 | 21 | 7 | 28 | 9 | 22 | 31 | 85 |
| % Trucks | 6.4 | 9.2 | 7.8 | 1.4 | 2.7 | 1.6 | 5.8 | 2.2 | 2.6 | 2.6 |

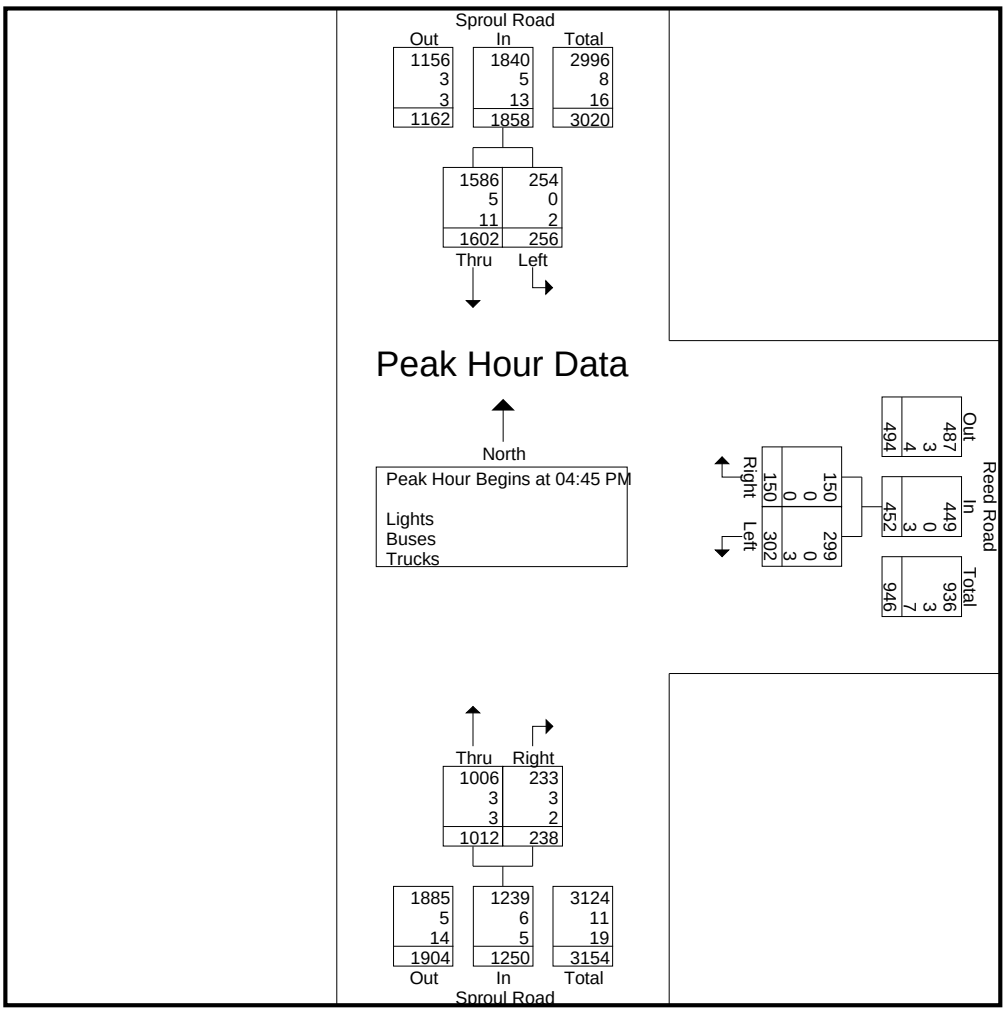


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 4

| | Reed Road Westbound | | | Sproul Road Northbound | | | Sproul Road Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | |
| 04:45 PM | 78 | 31 | 109 | 254 | 58 | 312 | 61 | 371 | 432 | 853 |
| 05:00 PM | **93** | **52** | **145** | **260** | 57 | 317 | 63 | **434** | **497** | **959** |
| 05:15 PM | 69 | 42 | 111 | 243 | 59 | 302 | 62 | 385 | 447 | 860 |
| 05:30 PM | 62 | 25 | 87 | 255 | **64** | **319** | **70** | 412 | 482 | 888 |
| Total Volume | 302 | 150 | 452 | 1012 | 238 | 1250 | 256 | 1602 | 1858 | 3560 |
| % App. Total | 66.8 | 33.2 | | 81 | 19 | | 13.8 | 86.2 | | |
| PHF | .812 | .721 | .779 | .973 | .930 | .980 | .914 | .923 | .935 | .928 |
| Lights | 299 | 150 | 449 | 1006 | 233 | 1239 | 254 | 1586 | 1840 | 3528 |
| % Lights | 99.0 | 100 | 99.3 | 99.4 | 97.9 | 99.1 | 99.2 | 99.0 | 99.0 | 99.1 |
| Buses | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 5 | 5 | 11 |
| % Buses | 0 | 0 | 0 | 0.3 | 1.3 | 0.5 | 0 | 0.3 | 0.3 | 0.3 |
| Trucks | 3 | 0 | 3 | 3 | 2 | 5 | 2 | 11 | 13 | 21 |
| % Trucks | 1.0 | 0 | 0.7 | 0.3 | 0.8 | 0.4 | 0.8 | 0.7 | 0.7 | 0.6 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Reed Road
Date: Tuesday, April 8, 2014
Counter: MIO

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 1

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Reed Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

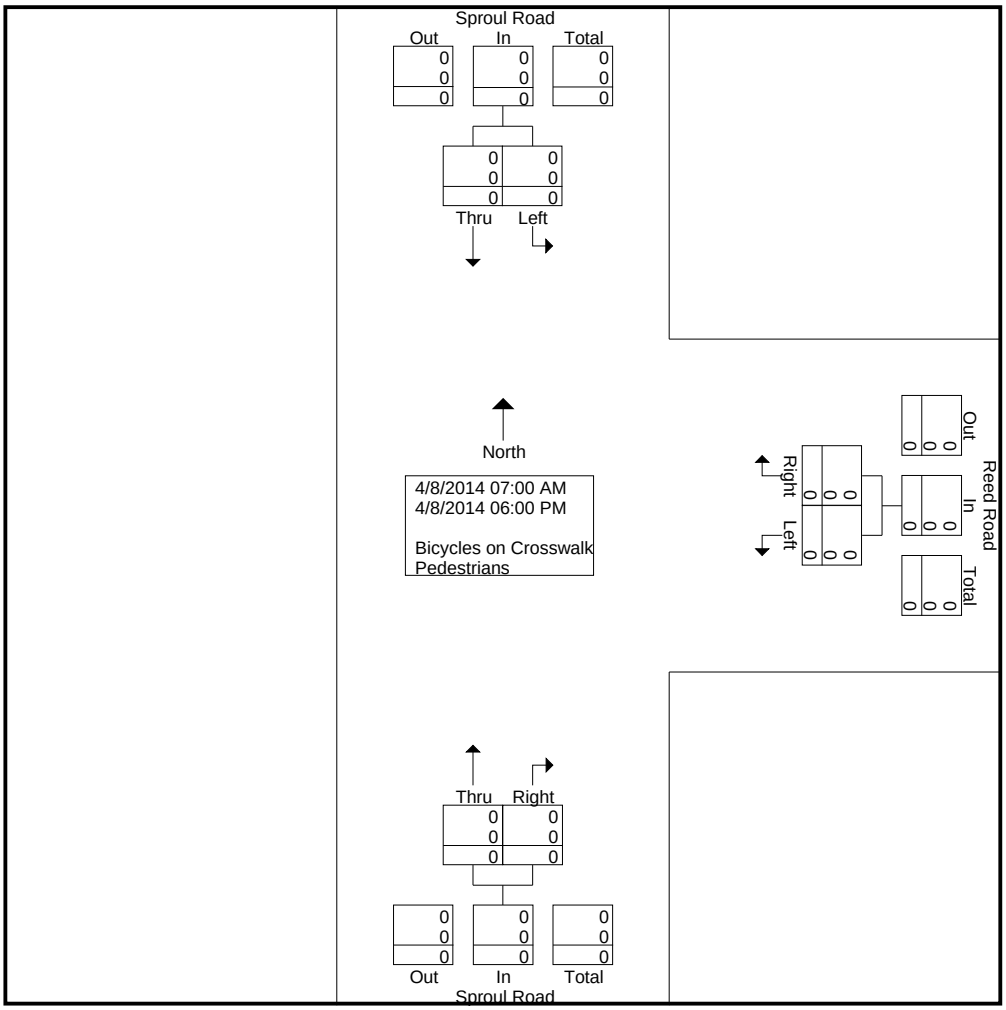
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 2

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Reed Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Apprch % | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | | | | | | | | | | | | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

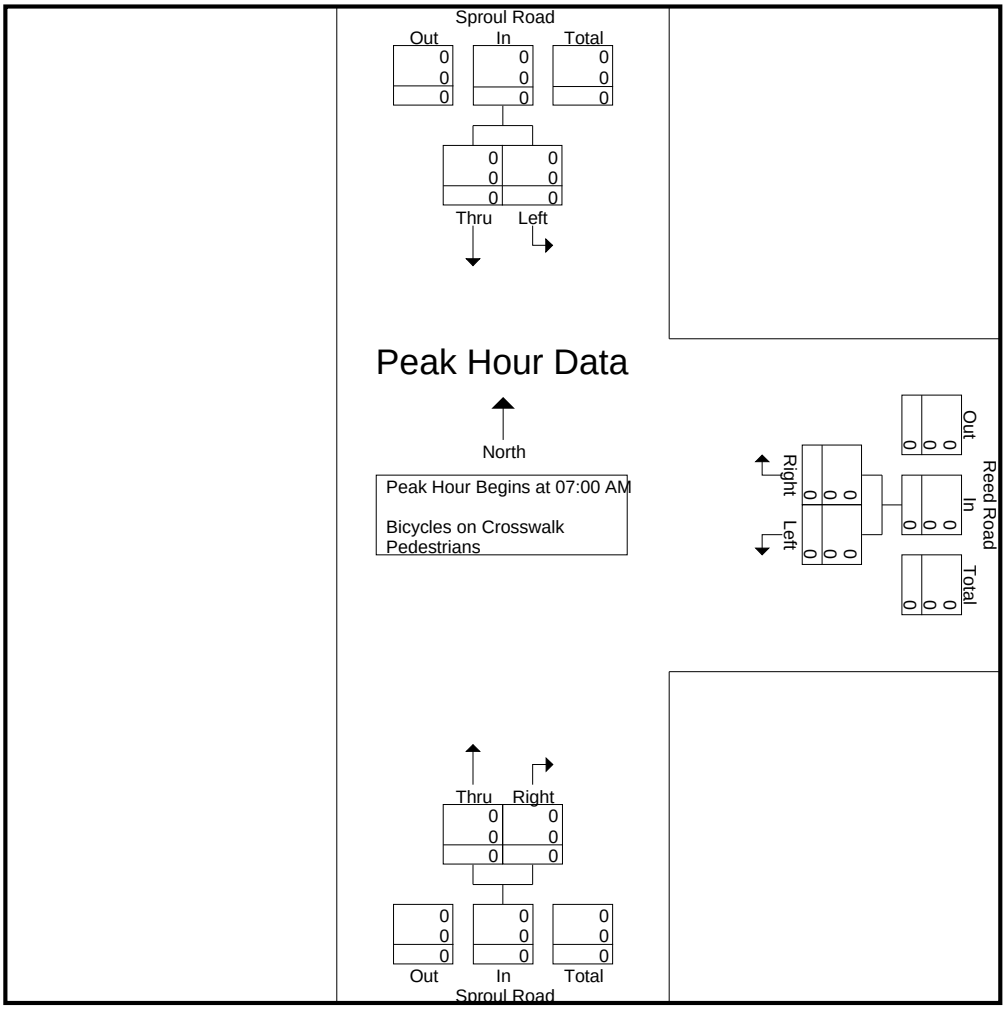


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Sproul Road & Reed Road**
**Marple Township, Delaware County**

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 3

| | Reed Road Westbound | | | Sproul Road Northbound | | | Sproul Road Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

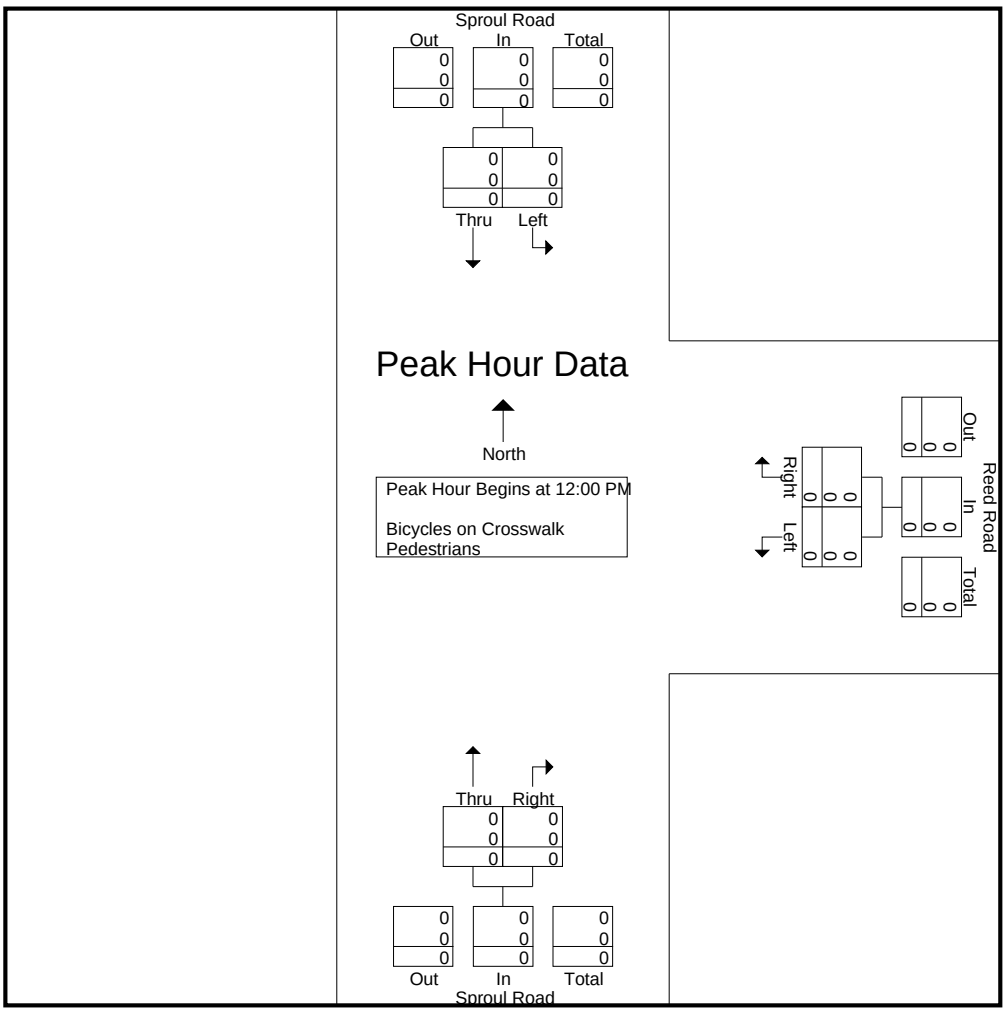


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Reed Road
# Marple Township, Delaware County

File Name : 10_MS 0408 09_Sproul & Reed
Site Code : 9
Start Date : 4/8/2014
Page No : 4

| | Reed Road Westbound | | | Sproul Road Northbound | | | Sproul Road Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Reed Road
Date: Saturday, September 13, 2014
Counter: CT

File Name : Del Co 03 Sat
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

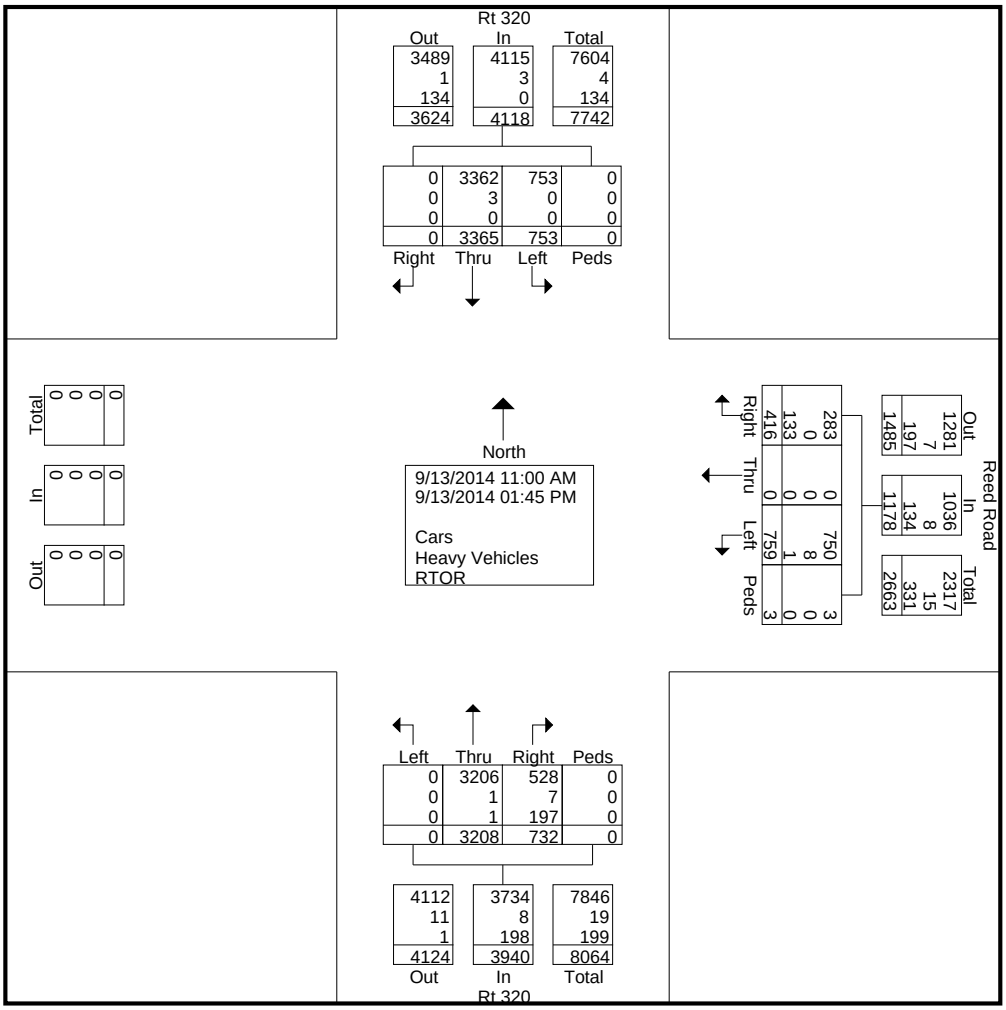
Groups Printed- Cars - Heavy Vehicles - RTOR

| | Rt 320 Southbound | | | | | Reed Road Westbound | | | | | Rt 320 Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 11:00 AM | 0 | 245 | 77 | 0 | 322 | 28 | 0 | 69 | 1 | 98 | 59 | 247 | 0 | 0 | 306 | 726 |
| 11:15 AM | 0 | 252 | 50 | 0 | 302 | 29 | 0 | 54 | 0 | 83 | 64 | 249 | 0 | 0 | 313 | 698 |
| 11:30 AM | 0 | 263 | 59 | 0 | 322 | 25 | 0 | 46 | 2 | 73 | 58 | 252 | 0 | 0 | 310 | 705 |
| 11:45 AM | 0 | 254 | 51 | 0 | 305 | 27 | 0 | 70 | 0 | 97 | 66 | 243 | 0 | 0 | 309 | 711 |
| Total | 0 | 1014 | 237 | 0 | 1251 | 109 | 0 | 239 | 3 | 351 | 247 | 991 | 0 | 0 | 1238 | 2840 |
| 12:00 PM | 0 | 285 | 79 | 0 | 364 | 35 | 0 | 53 | 0 | 88 | 48 | 252 | 0 | 0 | 300 | 752 |
| 12:15 PM | 0 | 295 | 64 | 0 | 359 | 42 | 0 | 80 | 0 | 122 | 71 | 298 | 0 | 0 | 369 | 850 |
| 12:30 PM | 0 | 290 | 58 | 0 | 348 | 53 | 0 | 82 | 0 | 135 | 35 | 256 | 0 | 0 | 291 | 774 |
| 12:45 PM | 0 | 319 | 63 | 0 | 382 | 39 | 0 | 55 | 0 | 94 | 63 | 257 | 0 | 0 | 320 | 796 |
| Total | 0 | 1189 | 264 | 0 | 1453 | 169 | 0 | 270 | 0 | 439 | 217 | 1063 | 0 | 0 | 1280 | 3172 |
| 01:00 PM | 0 | 275 | 75 | 0 | 350 | 43 | 0 | 68 | 0 | 111 | 71 | 289 | 0 | 0 | 360 | 821 |
| 01:15 PM | 0 | 323 | 55 | 0 | 378 | 29 | 0 | 67 | 0 | 96 | 67 | 293 | 0 | 0 | 360 | 834 |
| 01:30 PM | 0 | 305 | 71 | 0 | 376 | 27 | 0 | 56 | 0 | 83 | 71 | 291 | 0 | 0 | 362 | 821 |
| 01:45 PM | 0 | 259 | 51 | 0 | 310 | 39 | 0 | 59 | 0 | 98 | 59 | 281 | 0 | 0 | 340 | 748 |
| Total | 0 | 1162 | 252 | 0 | 1414 | 138 | 0 | 250 | 0 | 388 | 268 | 1154 | 0 | 0 | 1422 | 3224 |
| Grand Total | 0 | 3365 | 753 | 0 | 4118 | 416 | 0 | 759 | 3 | 1178 | 732 | 3208 | 0 | 0 | 3940 | 9236 |
| Apprch % | 0 | 81.7 | 18.3 | 0 | | 35.3 | 0 | 64.4 | 0.3 | | 18.6 | 81.4 | 0 | 0 | | |
| Total % | 0 | 36.4 | 8.2 | 0 | 44.6 | 4.5 | 0 | 8.2 | 0 | 12.8 | 7.9 | 34.7 | 0 | 0 | 42.7 | |
| Cars | 0 | 3362 | 753 | 0 | 4115 | 283 | 0 | 750 | 3 | 1036 | 528 | 3206 | 0 | 0 | 3734 | 8885 |
| % Cars | 0 | 99.9 | 100 | 0 | 99.9 | 68 | 0 | 98.8 | 100 | 87.9 | 72.1 | 99.9 | 0 | 0 | 94.8 | 96.2 |
| Heavy Vehicles | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 8 | 0 | 8 | 7 | 1 | 0 | 0 | 8 | 19 |
| % Heavy Vehicles | 0 | 0.1 | 0 | 0 | 0.1 | 0 | 0 | 1.1 | 0 | 0.7 | 1 | 0 | 0 | 0 | 0.2 | 0.2 |
| RTOR | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 1 | 0 | 134 | 197 | 1 | 0 | 0 | 198 | 332 |
| % RTOR | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0.1 | 0 | 11.4 | 26.9 | 0 | 0 | 0 | 5 | 3.6 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Reed Road
Date: Saturday, September 13, 2014
Counter: CT

File Name : Del Co 03 Sat
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

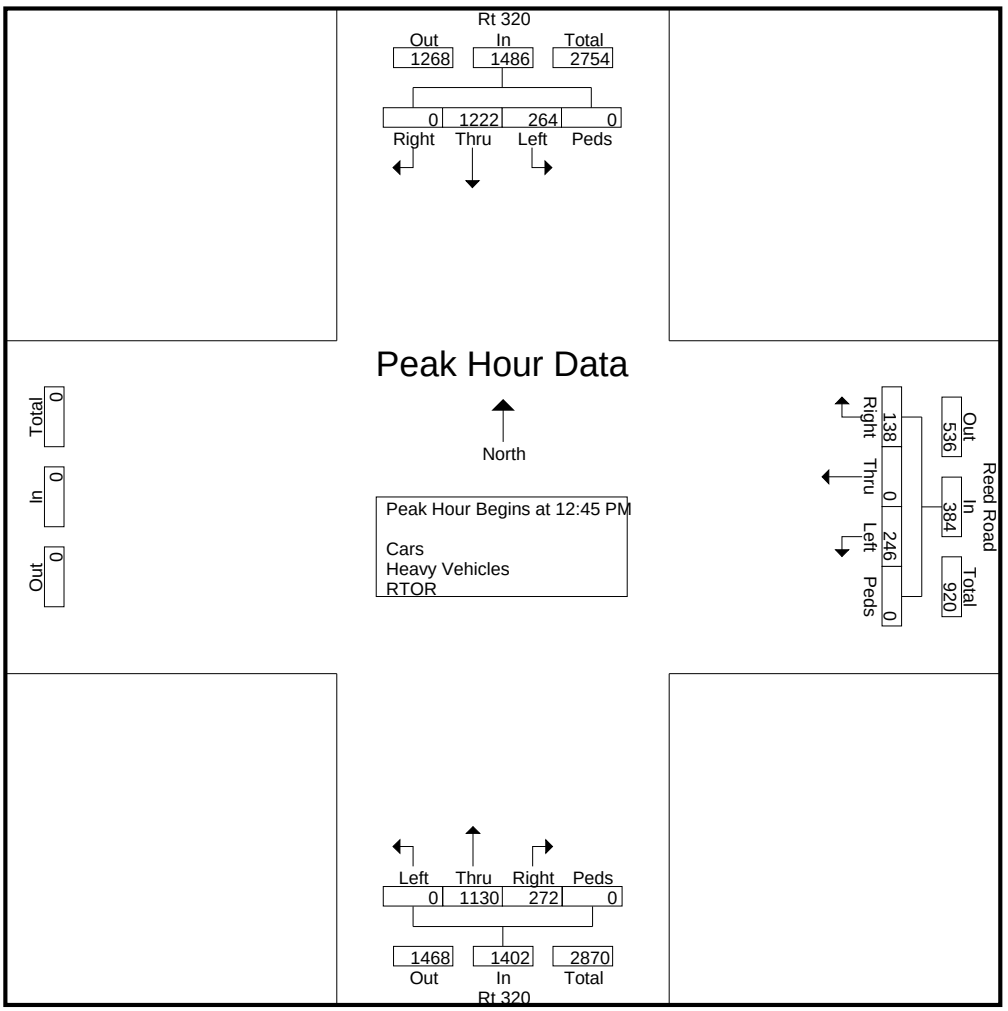


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Reed Road
Date: Saturday, September 13, 2014
Counter: CT

File Name : Del Co 03 Sat
Site Code : 00000000
Start Date : 9/13/2014
Page No : 4

| | Rt 320 Southbound | | | | | Reed Road Westbound | | | | | Rt 320 Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:45 PM | | | | | | | | | | | | | | | | |
| 12:45 PM | 0 | 319 | 63 | 0 | **382** | 39 | 0 | 55 | 0 | 94 | 63 | 257 | 0 | 0 | 320 | 796 |
| 01:00 PM | 0 | 275 | **75** | 0 | 350 | **43** | 0 | **68** | 0 | **111** | **71** | 289 | 0 | 0 | 360 | 821 |
| 01:15 PM | 0 | **323** | 55 | 0 | 378 | 29 | 0 | 67 | 0 | 96 | 67 | **293** | 0 | 0 | 360 | **834** |
| 01:30 PM | 0 | 305 | 71 | 0 | 376 | 27 | 0 | 56 | 0 | 83 | 71 | 291 | 0 | 0 | **362** | 821 |
| Total Volume | 0 | 1222 | 264 | 0 | 1486 | 138 | 0 | 246 | 0 | 384 | 272 | 1130 | 0 | 0 | 1402 | 3272 |
| % App. Total | 0 | 82.2 | 17.8 | 0 | | 35.9 | 0 | 64.1 | 0 | | 19.4 | 80.6 | 0 | 0 | | |
| PHF | .000 | .946 | .880 | .000 | .973 | .802 | .000 | .904 | .000 | .865 | .958 | .964 | .000 | .000 | .968 | .981 |



## *SPROUL ROAD & CRUM CREEK ROAD*

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Route 320/Crum Creek Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 04
Site Code : 04
Start Date : 9/9/2014
Page No : 1

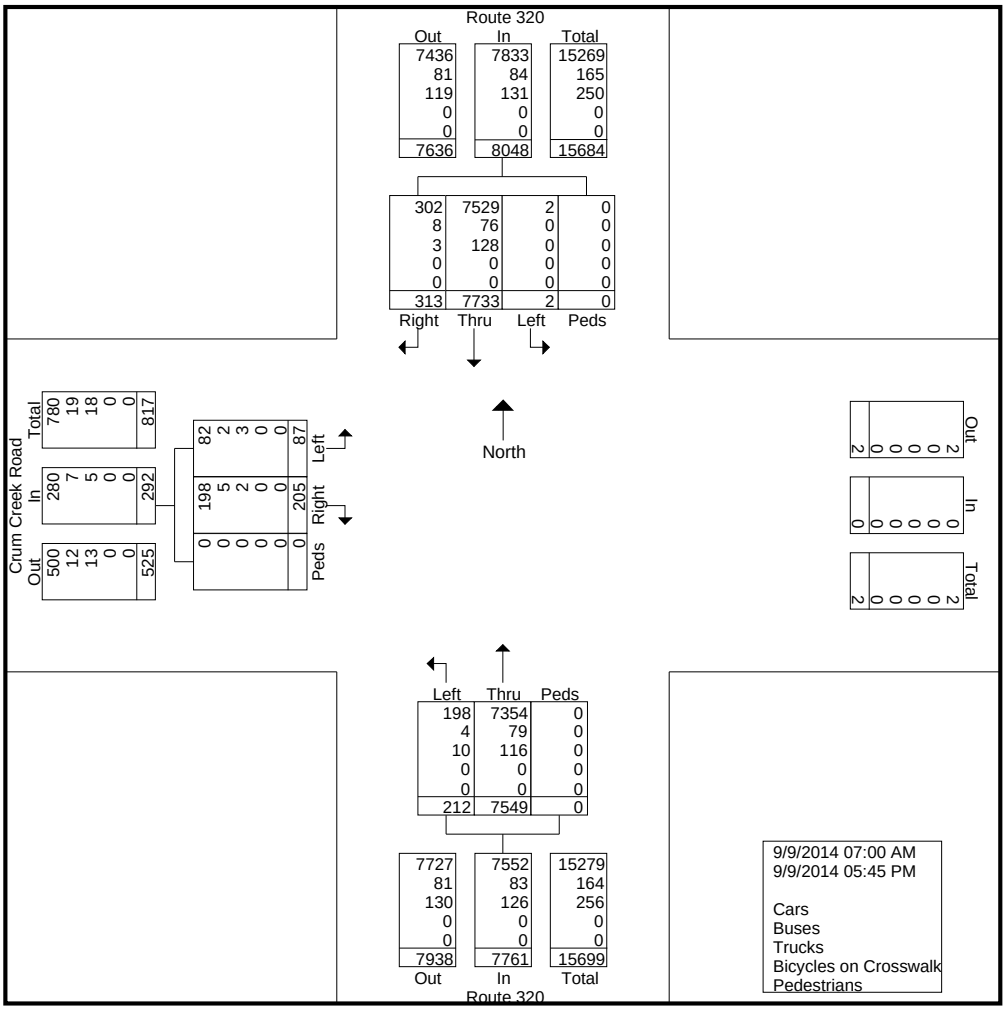
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Route 320 Southbound | | | | | Route 320 Northbound | | | | Crum Creek Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 7 | 222 | 0 | 0 | 229 | 401 | 5 | 0 | 406 | 4 | 3 | 0 | 7 | 642 |
| 07:15 AM | 9 | 251 | 0 | 0 | 260 | 421 | 9 | 0 | 430 | 11 | 6 | 0 | 17 | 707 |
| 07:30 AM | 10 | 274 | 0 | 0 | 284 | 461 | 18 | 0 | 479 | 19 | 3 | 0 | 22 | 785 |
| 07:45 AM | 15 | 256 | 0 | 0 | 271 | 539 | 20 | 0 | 559 | 10 | 6 | 0 | 16 | 846 |
| Total | 41 | 1003 | 0 | 0 | 1044 | 1822 | 52 | 0 | 1874 | 44 | 18 | 0 | 62 | 2980 |
| 08:00 AM | 2 | 275 | 1 | 0 | 278 | 536 | 14 | 0 | 550 | 10 | 3 | 0 | 13 | 841 |
| 08:15 AM | 8 | 257 | 0 | 0 | 265 | 530 | 10 | 0 | 540 | 4 | 9 | 0 | 13 | 818 |
| 08:30 AM | 8 | 255 | 0 | 0 | 263 | 501 | 13 | 0 | 514 | 9 | 8 | 0 | 17 | 794 |
| 08:45 AM | 11 | 254 | 1 | 0 | 266 | 428 | 11 | 0 | 439 | 8 | 4 | 0 | 12 | 717 |
| Total | 29 | 1041 | 2 | 0 | 1072 | 1995 | 48 | 0 | 2043 | 31 | 24 | 0 | 55 | 3170 |
| 03:00 PM | 9 | 336 | 0 | 0 | 345 | 292 | 3 | 0 | 295 | 14 | 6 | 0 | 20 | 660 |
| 03:15 PM | 12 | 362 | 0 | 0 | 374 | 281 | 6 | 0 | 287 | 11 | 4 | 0 | 15 | 676 |
| 03:30 PM | 13 | 403 | 0 | 0 | 416 | 300 | 9 | 0 | 309 | 8 | 3 | 0 | 11 | 736 |
| 03:45 PM | 24 | 441 | 0 | 0 | 465 | 328 | 5 | 0 | 333 | 8 | 2 | 0 | 10 | 808 |
| Total | 58 | 1542 | 0 | 0 | 1600 | 1201 | 23 | 0 | 1224 | 41 | 15 | 0 | 56 | 2880 |
| 04:00 PM | 17 | 441 | 0 | 0 | 458 | 293 | 13 | 0 | 306 | 7 | 6 | 0 | 13 | 777 |
| 04:15 PM | 23 | 533 | 0 | 0 | 556 | 325 | 10 | 0 | 335 | 12 | 1 | 0 | 13 | 904 |
| 04:30 PM | 21 | 500 | 0 | 0 | 521 | 320 | 11 | 0 | 331 | 19 | 3 | 0 | 22 | 874 |
| 04:45 PM | 25 | 522 | 0 | 0 | 547 | 333 | 11 | 0 | 344 | 11 | 7 | 0 | 18 | 909 |
| Total | 86 | 1996 | 0 | 0 | 2082 | 1271 | 45 | 0 | 1316 | 49 | 17 | 0 | 66 | 3464 |
| 05:00 PM | 31 | 579 | 0 | 0 | 610 | 300 | 12 | 0 | 312 | 12 | 3 | 0 | 15 | 937 |
| 05:15 PM | 27 | 558 | 0 | 0 | 585 | 349 | 12 | 0 | 361 | 6 | 3 | 0 | 9 | 955 |
| 05:30 PM | 24 | 495 | 0 | 0 | 519 | 313 | 12 | 0 | 325 | 10 | 5 | 0 | 15 | 859 |
| 05:45 PM | 17 | 519 | 0 | 0 | 536 | 298 | 8 | 0 | 306 | 12 | 2 | 0 | 14 | 856 |
| Total | 99 | 2151 | 0 | 0 | 2250 | 1260 | 44 | 0 | 1304 | 40 | 13 | 0 | 53 | 3607 |
| Grand Total | 313 | 7733 | 2 | 0 | 8048 | 7549 | 212 | 0 | 7761 | 205 | 87 | 0 | 292 | 16101 |
| Apprch % | 3.9 | 96.1 | 0 | 0 | | 97.3 | 2.7 | 0 | | 70.2 | 29.8 | 0 | | |
| Total % | 1.9 | 48 | 0 | 0 | 50 | 46.9 | 1.3 | 0 | 48.2 | 1.3 | 0.5 | 0 | 1.8 | |
| Cars | 302 | 7529 | 2 | 0 | 7833 | 7354 | 198 | 0 | 7552 | 198 | 82 | 0 | 280 | 15665 |
| % Cars | 96.5 | 97.4 | 100 | 0 | 97.3 | 97.4 | 93.4 | 0 | 97.3 | 96.6 | 94.3 | 0 | 95.9 | 97.3 |
| Buses | 8 | 76 | 0 | 0 | 84 | 79 | 4 | 0 | 83 | 5 | 2 | 0 | 7 | 174 |
| % Buses | 2.6 | 1 | 0 | 0 | 1 | 1 | 1.9 | 0 | 1.1 | 2.4 | 2.3 | 0 | 2.4 | 1.1 |
| Trucks | 3 | 128 | 0 | 0 | 131 | 116 | 10 | 0 | 126 | 2 | 3 | 0 | 5 | 262 |
| % Trucks | 1 | 1.7 | 0 | 0 | 1.6 | 1.5 | 4.7 | 0 | 1.6 | 1 | 3.4 | 0 | 1.7 | 1.6 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Route 320/Crum Creek Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 04
Site Code : 04
Start Date : 9/9/2014
Page No : 2

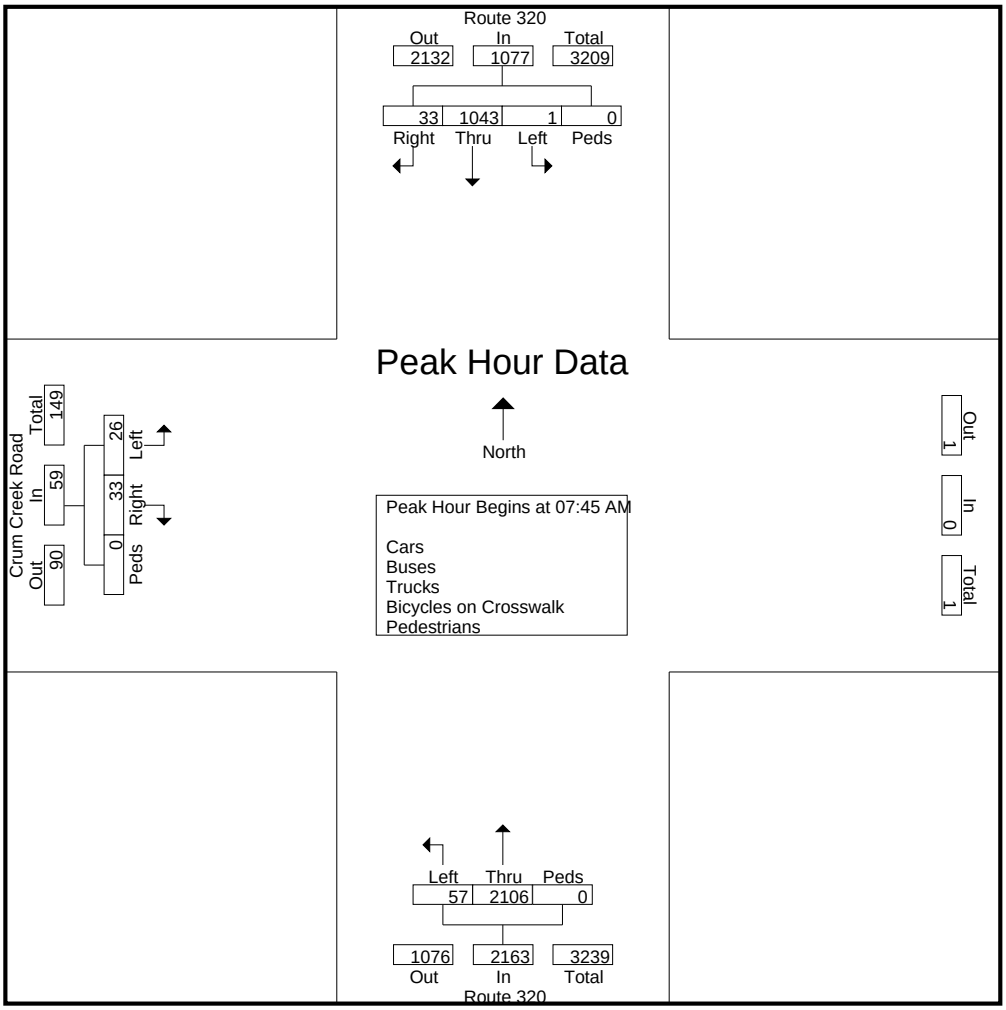


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Route 320/Crum Creek Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 04
Site Code : 04
Start Date : 9/9/2014
Page No : 4

| | Route 320 Southbound | | | | | Route 320 Northbound | | | | Crum Creek Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | |
| 07:45 AM | **15** | 256 | 0 | 0 | 271 | **539** | **20** | 0 | **559** | **10** | 6 | 0 | 16 | **846** |
| 08:00 AM | 2 | **275** | **1** | 0 | **278** | 536 | 14 | 0 | 550 | 10 | 3 | 0 | 13 | 841 |
| 08:15 AM | 8 | 257 | 0 | 0 | 265 | 530 | 10 | 0 | 540 | 4 | **9** | 0 | 13 | 818 |
| 08:30 AM | 8 | 255 | 0 | 0 | 263 | 501 | 13 | 0 | 514 | 9 | 8 | 0 | **17** | 794 |
| Total Volume | 33 | 1043 | 1 | 0 | 1077 | 2106 | 57 | 0 | 2163 | 33 | 26 | 0 | 59 | 3299 |
| % App. Total | 3.1 | 96.8 | 0.1 | 0 | | 97.4 | 2.6 | 0 | | 55.9 | 44.1 | 0 | | |
| PHF | .550 | .948 | .250 | .000 | .969 | .977 | .713 | .000 | .967 | .825 | .722 | .000 | .868 | .975 |

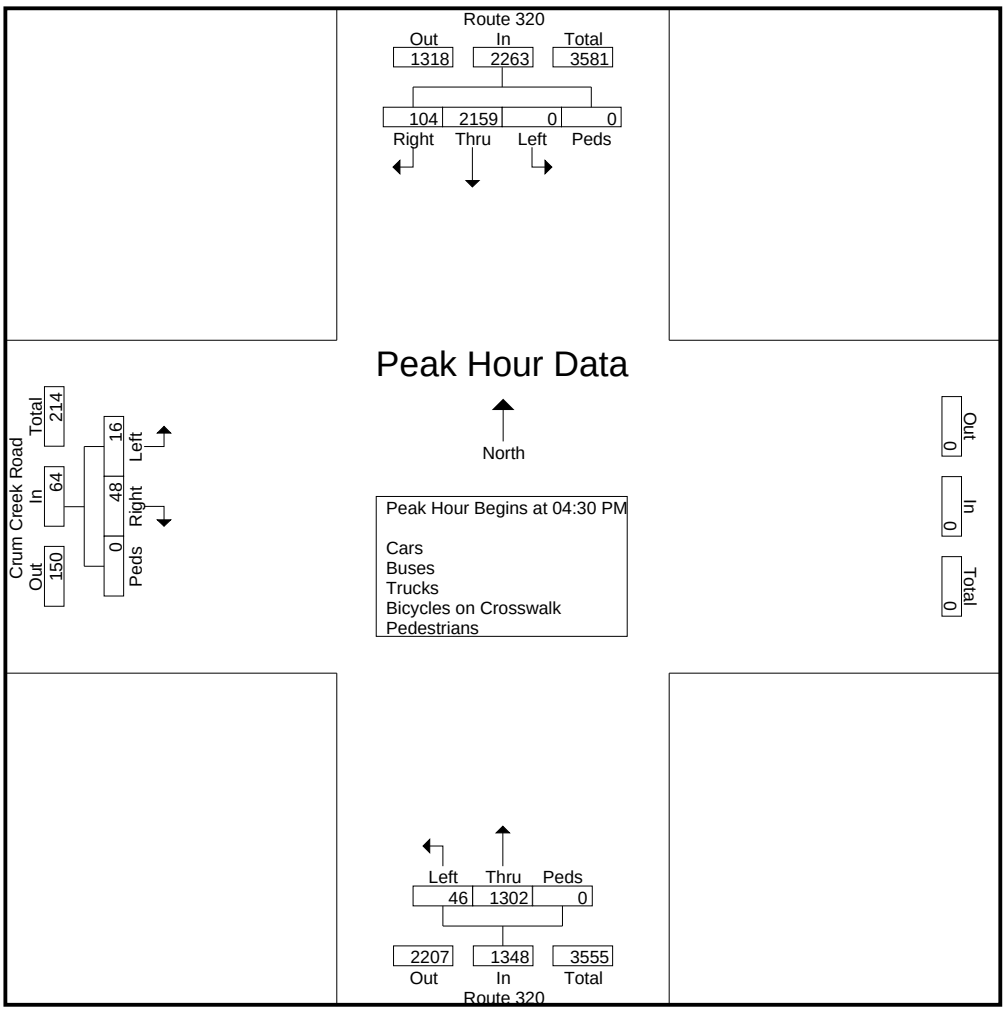


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Route 320/Crum Creek Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 04
Site Code : 04
Start Date : 9/9/2014
Page No : 5

| | Route 320 Southbound | | | | | Route 320 Northbound | | | | Crum Creek Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | |
| 04:30 PM | 21 | 500 | 0 | 0 | 521 | 320 | 11 | 0 | 331 | **19** | 3 | 0 | **22** | 874 |
| 04:45 PM | 25 | 522 | 0 | 0 | 547 | 333 | 11 | 0 | 344 | 11 | **7** | 0 | 18 | 909 |
| 05:00 PM | **31** | **579** | 0 | 0 | **610** | 300 | **12** | 0 | 312 | 12 | 3 | 0 | 15 | 937 |
| 05:15 PM | 27 | 558 | 0 | 0 | 585 | **349** | 12 | 0 | **361** | 6 | 3 | 0 | 9 | **955** |
| Total Volume | 104 | 2159 | 0 | 0 | 2263 | 1302 | 46 | 0 | 1348 | 48 | 16 | 0 | 64 | 3675 |
| % App. Total | 4.6 | 95.4 | 0 | 0 | | 96.6 | 3.4 | 0 | | 75 | 25 | 0 | | |
| PHF | .839 | .932 | .000 | .000 | .927 | .933 | .958 | .000 | .934 | .632 | .571 | .000 | .727 | .962 |



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Crum Creek Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 04 Sat
Site Code : 04
Start Date : 9/6/2014
Page No : 1

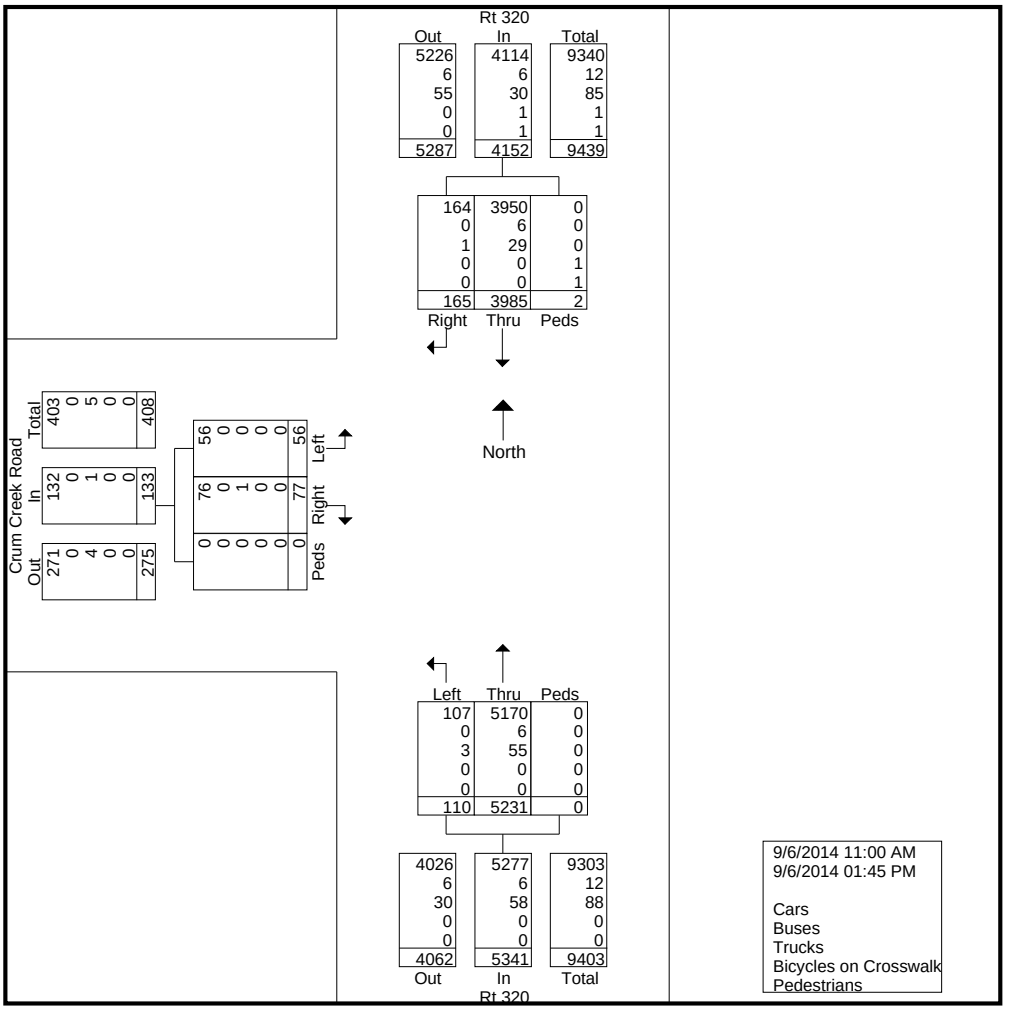
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Rt 320 Southbound | | | | Rt 320 Northbound | | | | Crum Creek Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 11:00 AM | 10 | 294 | 0 | 304 | 431 | 8 | 0 | 439 | 12 | 5 | 0 | 17 | 760 |
| 11:15 AM | 11 | 314 | 1 | 326 | 484 | 6 | 0 | 490 | 9 | 7 | 0 | 16 | 832 |
| 11:30 AM | 7 | 319 | 0 | 326 | 396 | 8 | 0 | 404 | 3 | 3 | 0 | 6 | 736 |
| 11:45 AM | 19 | 347 | 0 | 366 | 446 | 10 | 0 | 456 | 4 | 8 | 0 | 12 | 834 |
| Total | 47 | 1274 | 1 | 1322 | 1757 | 32 | 0 | 1789 | 28 | 23 | 0 | 51 | 3162 |
| 12:00 PM | 16 | 370 | 0 | 386 | 418 | 12 | 0 | 430 | 5 | 4 | 0 | 9 | 825 |
| 12:15 PM | 14 | 358 | 0 | 372 | 441 | 17 | 0 | 458 | 8 | 2 | 0 | 10 | 840 |
| 12:30 PM | 10 | 367 | 0 | 377 | 449 | 15 | 0 | 464 | 6 | 3 | 0 | 9 | 850 |
| 12:45 PM | 11 | 315 | 0 | 326 | 463 | 8 | 0 | 471 | 8 | 2 | 0 | 10 | 807 |
| Total | 51 | 1410 | 0 | 1461 | 1771 | 52 | 0 | 1823 | 27 | 11 | 0 | 38 | 3322 |
| 01:00 PM | 19 | 327 | 1 | 347 | 447 | 7 | 0 | 454 | 6 | 8 | 0 | 14 | 815 |
| 01:15 PM | 16 | 329 | 0 | 345 | 441 | 9 | 0 | 450 | 9 | 6 | 0 | 15 | 810 |
| 01:30 PM | 16 | 332 | 0 | 348 | 409 | 6 | 0 | 415 | 5 | 4 | 0 | 9 | 772 |
| 01:45 PM | 16 | 313 | 0 | 329 | 406 | 4 | 0 | 410 | 2 | 4 | 0 | 6 | 745 |
| Total | 67 | 1301 | 1 | 1369 | 1703 | 26 | 0 | 1729 | 22 | 22 | 0 | 44 | 3142 |
| Grand Total | 165 | 3985 | 2 | 4152 | 5231 | 110 | 0 | 5341 | 77 | 56 | 0 | 133 | 9626 |
| Apprch % | 4 | 96 | 0 | | 97.9 | 2.1 | 0 | | 57.9 | 42.1 | 0 | | |
| Total % | 1.7 | 41.4 | 0 | 43.1 | 54.3 | 1.1 | 0 | 55.5 | 0.8 | 0.6 | 0 | 1.4 | |
| Cars | 164 | 3950 | 0 | 4114 | 5170 | 107 | 0 | 5277 | 76 | 56 | 0 | 132 | 9523 |
| % Cars | 99.4 | 99.1 | 0 | 99.1 | 98.8 | 97.3 | 0 | 98.8 | 98.7 | 100 | 0 | 99.2 | 98.9 |
| Buses | 0 | 6 | 0 | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 12 |
| % Buses | 0 | 0.2 | 0 | 0.1 | 0.1 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |
| Trucks | 1 | 29 | 0 | 30 | 55 | 3 | 0 | 58 | 1 | 0 | 0 | 1 | 89 |
| % Trucks | 0.6 | 0.7 | 0 | 0.7 | 1.1 | 2.7 | 0 | 1.1 | 1.3 | 0 | 0 | 0.8 | 0.9 |
| Bicycles on Crosswalk | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Crum Creek Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 04 Sat
Site Code : 04
Start Date : 9/6/2014
Page No : 2

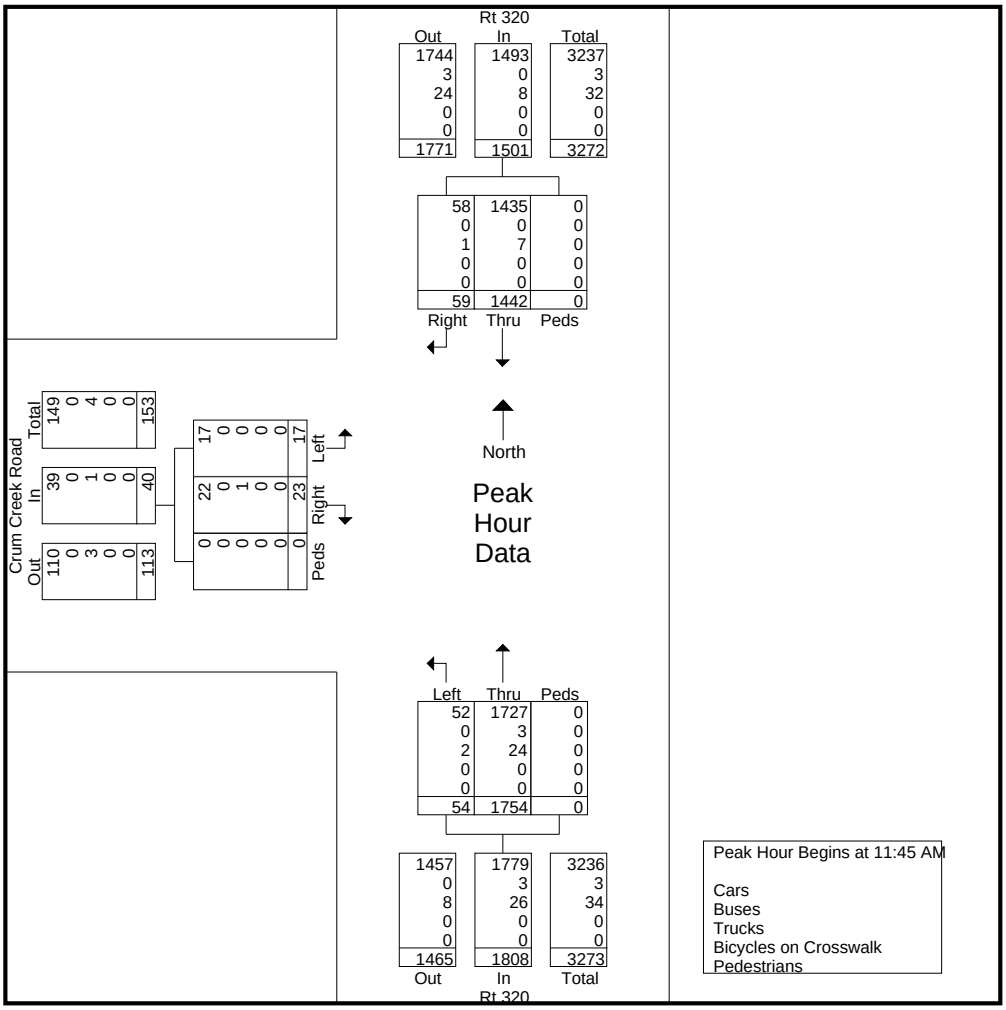


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rt 320/Crum Creek Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 04 Sat
Site Code : 04
Start Date : 9/6/2014
Page No : 4

| | Rt 320 Southbound | | | | Rt 320 Northbound | | | | Crum Creek Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | |
| 11:45 AM | **19** | 347 | 0 | 366 | 446 | 10 | 0 | 456 | 4 | **8** | 0 | **12** | 834 |
| 12:00 PM | 16 | **370** | 0 | **386** | 418 | 12 | 0 | 430 | 5 | 4 | 0 | 9 | 825 |
| 12:15 PM | 14 | 358 | 0 | 372 | 441 | **17** | 0 | 458 | **8** | 2 | 0 | 10 | 840 |
| 12:30 PM | 10 | 367 | 0 | 377 | **449** | 15 | 0 | **464** | 6 | 3 | 0 | 9 | **850** |
| Total Volume | 59 | 1442 | 0 | 1501 | 1754 | 54 | 0 | 1808 | 23 | 17 | 0 | 40 | 3349 |
| % App. Total | 3.9 | 96.1 | 0 | | 97 | 3 | 0 | | 57.5 | 42.5 | 0 | | |
| PHF | .776 | .974 | .000 | .972 | .977 | .794 | .000 | .974 | .719 | .531 | .000 | .833 | .985 |
| Cars | 58 | 1435 | 0 | 1493 | 1727 | 52 | 0 | 1779 | 22 | 17 | 0 | 39 | 3311 |
| % Cars | 98.3 | 99.5 | 0 | 99.5 | 98.5 | 96.3 | 0 | 98.4 | 95.7 | 100 | 0 | 97.5 | 98.9 |
| Buses | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| % Buses | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0.1 |
| Trucks | 1 | 7 | 0 | 8 | 24 | 2 | 0 | 26 | 1 | 0 | 0 | 1 | 35 |
| % Trucks | 1.7 | 0.5 | 0 | 0.5 | 1.4 | 3.7 | 0 | 1.4 | 4.3 | 0 | 0 | 2.5 | 1.0 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# *SPROUL ROAD & CEMETARY DRIVEWAY/ DON GUANELLA DRIVEWAY*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

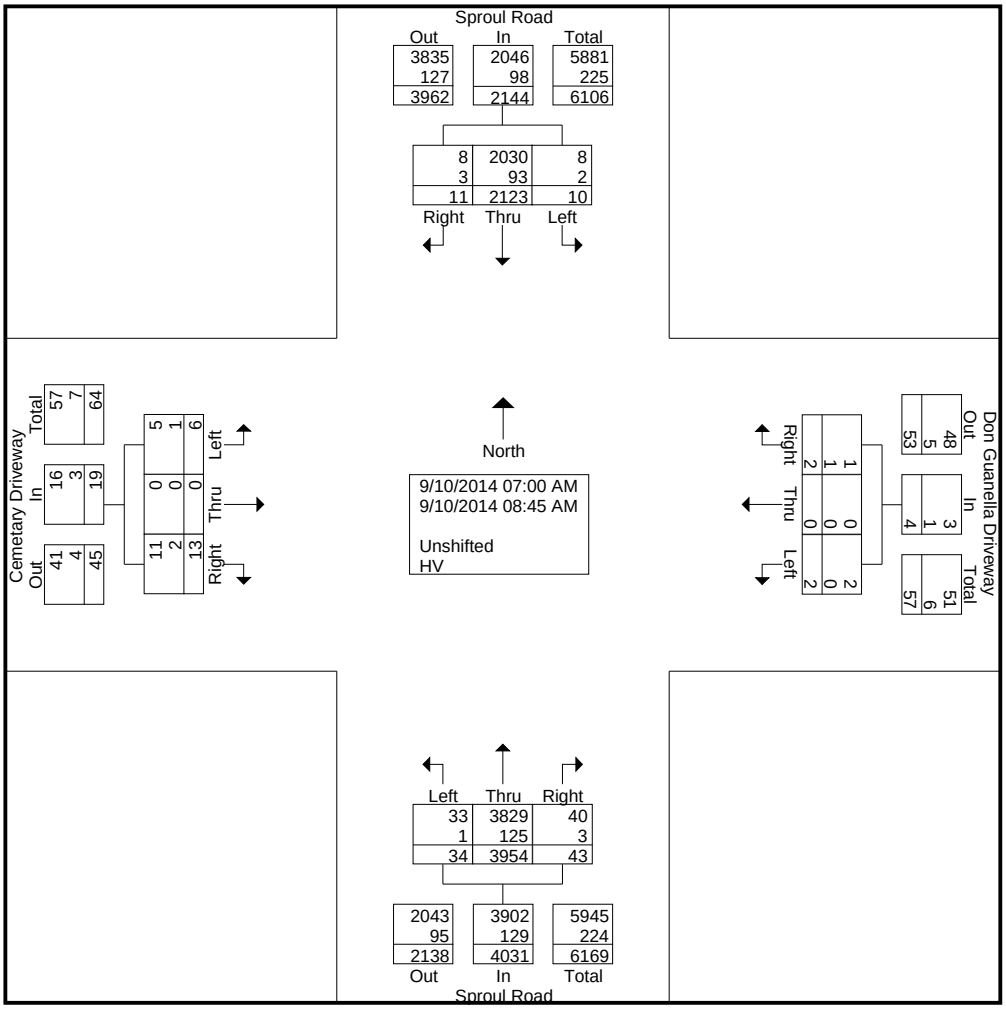
# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

Counter: 18
Counted by: RKearney
Weather: Clear

File Name : 2014-09-10 AM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Cemetary Driveway Eastbound | | | | | Don Guanella Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 368 | 6 | 0 | 376 | 0 | 191 | 1 | 0 | 192 | 0 | 569 | 569 |
| 07:15 AM | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 459 | 3 | 0 | 468 | 1 | 260 | 3 | 0 | 264 | 0 | 734 | 734 |
| 07:30 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 520 | 4 | 0 | 528 | 4 | 330 | 0 | 0 | 334 | 0 | 863 | 863 |
| 07:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 562 | 6 | 0 | 568 | 1 | 282 | 0 | 0 | 283 | 0 | 852 | 852 |
| Total | 2 | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 12 | 1909 | 19 | 0 | 1940 | 6 | 1063 | 4 | 0 | 1073 | 0 | 3018 | 3018 |
| 08:00 AM | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 500 | 7 | 0 | 511 | 0 | 278 | 2 | 0 | 280 | 0 | 794 | 794 |
| 08:15 AM | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 9 | 524 | 4 | 0 | 537 | 1 | 257 | 0 | 0 | 258 | 0 | 800 | 800 |
| 08:30 AM | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 6 | 565 | 5 | 0 | 576 | 3 | 250 | 3 | 0 | 256 | 0 | 835 | 835 |
| 08:45 AM | 1 | 0 | 4 | 0 | 5 | 1 | 0 | 1 | 0 | 2 | 3 | 456 | 8 | 0 | 467 | 0 | 275 | 2 | 0 | 277 | 0 | 751 | 751 |
| Total | 4 | 0 | 10 | 0 | 14 | 2 | 0 | 2 | 0 | 4 | 22 | 2045 | 24 | 0 | 2091 | 4 | 1060 | 7 | 0 | 1071 | 0 | 3180 | 3180 |
| Grand Total | 6 | 0 | 13 | 0 | 19 | 2 | 0 | 2 | 0 | 4 | 34 | 3954 | 43 | 0 | 4031 | 10 | 2123 | 11 | 0 | 2144 | 0 | 6198 | 6198 |
| Apprch % | 31.6 | 0 | 68.4 | | | 50 | 0 | 50 | | | 0.8 | 98.1 | 1.1 | | | 0.5 | 99 | 0.5 | | | | | |
| Total % | 0.1 | 0 | 0.2 | | 0.3 | 0 | 0 | 0 | | 0.1 | 0.5 | 63.8 | 0.7 | | 65 | 0.2 | 34.3 | 0.2 | | 34.6 | 0 | 100 | |
| Unshifted | 5 | 0 | 11 | | 16 | 2 | 0 | 1 | | 3 | 33 | 3829 | 40 | | 3902 | 8 | 2030 | 8 | | 2046 | 0 | 0 | 5967 |
| % Unshifted | 83.3 | 0 | 84.6 | 0 | 84.2 | 100 | 0 | 50 | 0 | 75 | 97.1 | 96.8 | 93 | 0 | 96.8 | 80 | 95.6 | 72.7 | 0 | 95.4 | 0 | 0 | 96.3 |
| HV | 1 | 0 | 2 | | 3 | 0 | 0 | 1 | | 1 | 1 | 125 | 3 | | 129 | 2 | 93 | 3 | | 98 | 0 | 0 | 231 |
| % HV | 16.7 | 0 | 15.4 | 0 | 15.8 | 0 | 0 | 50 | 0 | 25 | 2.9 | 3.2 | 7 | 0 | 3.2 | 20 | 4.4 | 27.3 | 0 | 4.6 | 0 | 0 | 3.7 |

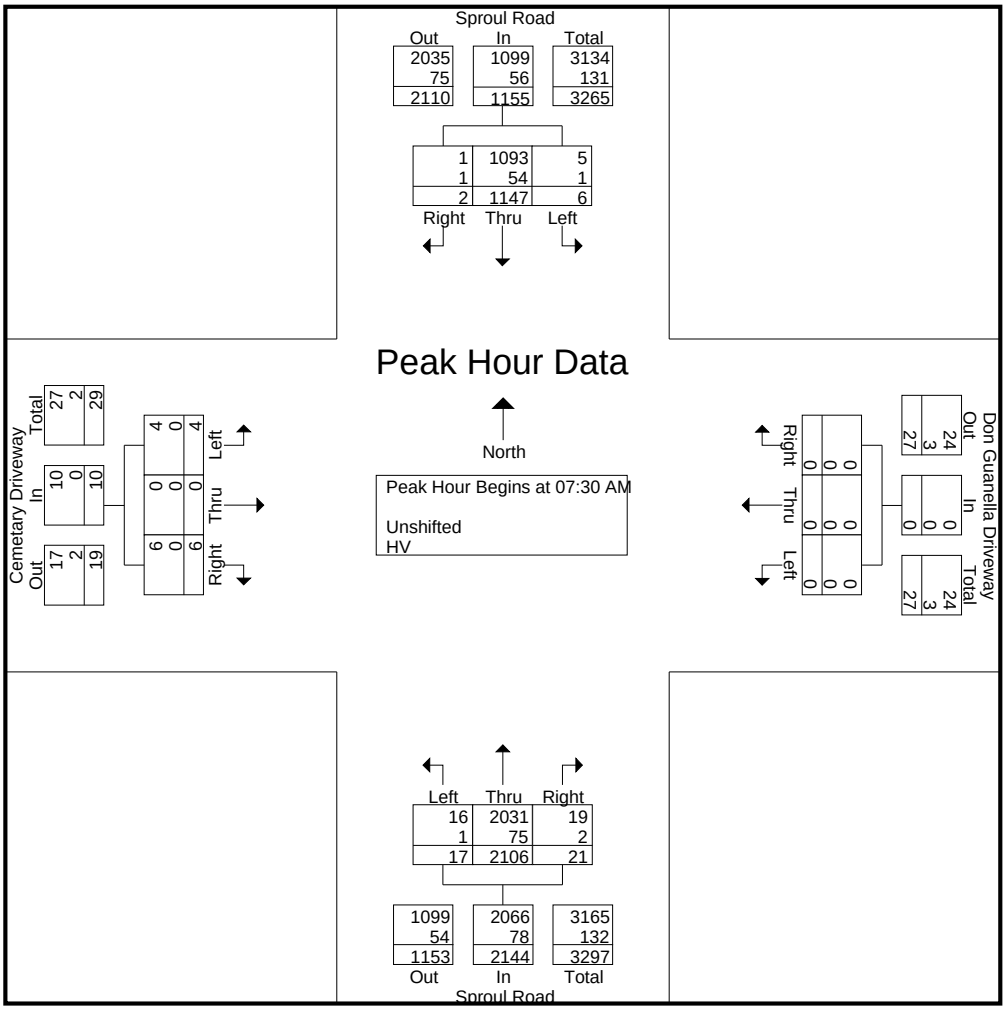


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Cemetary Driveway Eastbound | | | | Don Guanella Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 520 | 4 | 528 | **4** | **330** | 0 | **334** | **863** |
| 07:45 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **562** | 6 | **568** | 1 | 282 | 0 | 283 | 852 |
| 08:00 AM | **2** | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 500 | **7** | 511 | 0 | 278 | **2** | 280 | 794 |
| 08:15 AM | 0 | 0 | **5** | **5** | 0 | 0 | 0 | 0 | **9** | 524 | 4 | 537 | 1 | 257 | 0 | 258 | 800 |
| Total Volume | 4 | 0 | 6 | 10 | 0 | 0 | 0 | 0 | 17 | 2106 | 21 | 2144 | 6 | 1147 | 2 | 1155 | 3309 |
| % App. Total | 40 | 0 | 60 | | 0 | 0 | 0 | | 0.8 | 98.2 | 1 | | 0.5 | 99.3 | 0.2 | | |
| PHF | .500 | .000 | .300 | .500 | .000 | .000 | .000 | .000 | .472 | .937 | .750 | .944 | .375 | .869 | .250 | .865 | .959 |
| Unshifted | 4 | 0 | 6 | 10 | 0 | 0 | 0 | 0 | 16 | 2031 | 19 | 2066 | 5 | 1093 | 1 | 1099 | 3175 |
| % Unshifted | 100 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 94.1 | 96.4 | 90.5 | 96.4 | 83.3 | 95.3 | 50.0 | 95.2 | 96.0 |
| HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 75 | 2 | 78 | 1 | 54 | 1 | 56 | 134 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5.9 | 3.6 | 9.5 | 3.6 | 16.7 | 4.7 | 50.0 | 4.8 | 4.0 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

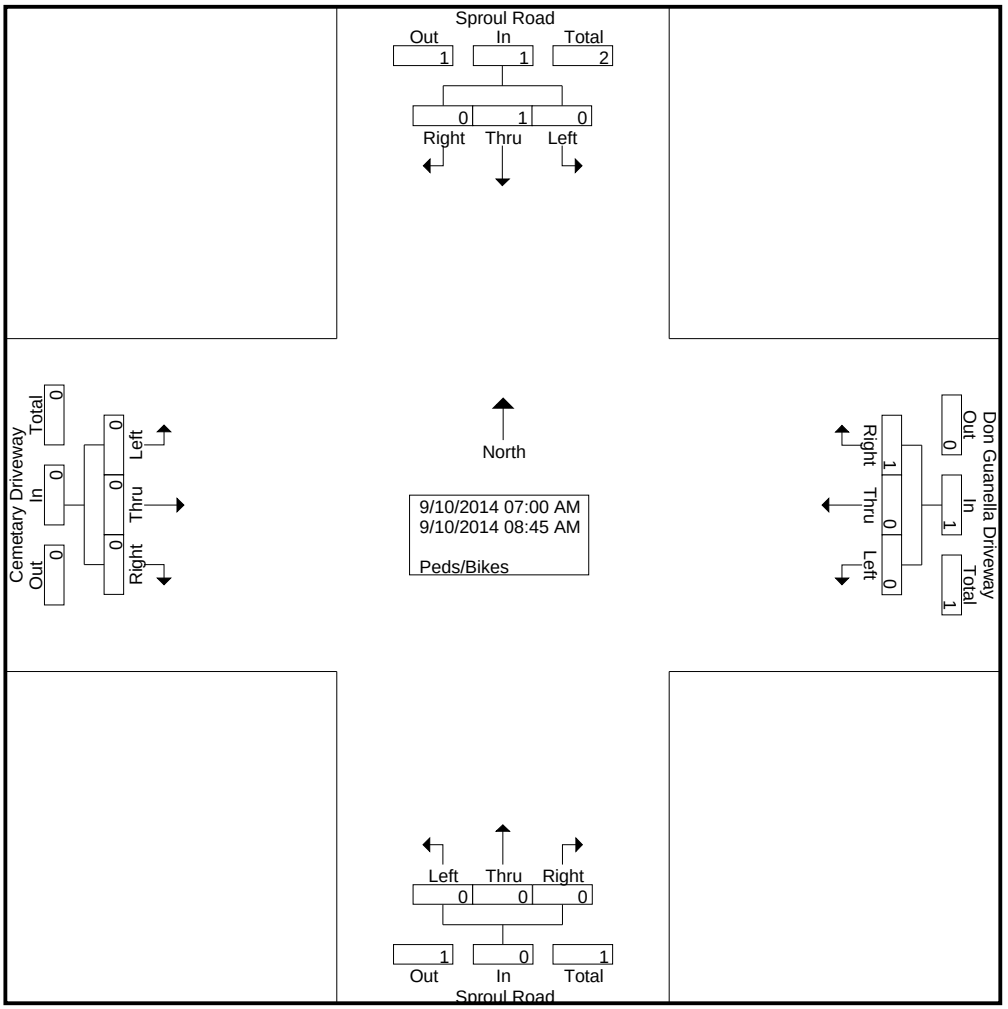
# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

Counter: 18
Counted by: RKearney
Weather: Clear

File Name : 2014-09-10 AM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Cemetary Driveway Eastbound | | | | | Don Guanella Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 100 | | | 0 | 0 | 0 | | | 0 | 100 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 50 | | 50 | 0 | 0 | 0 | | 0 | 0 | 50 | 0 | | 50 | 0 | 100 | |

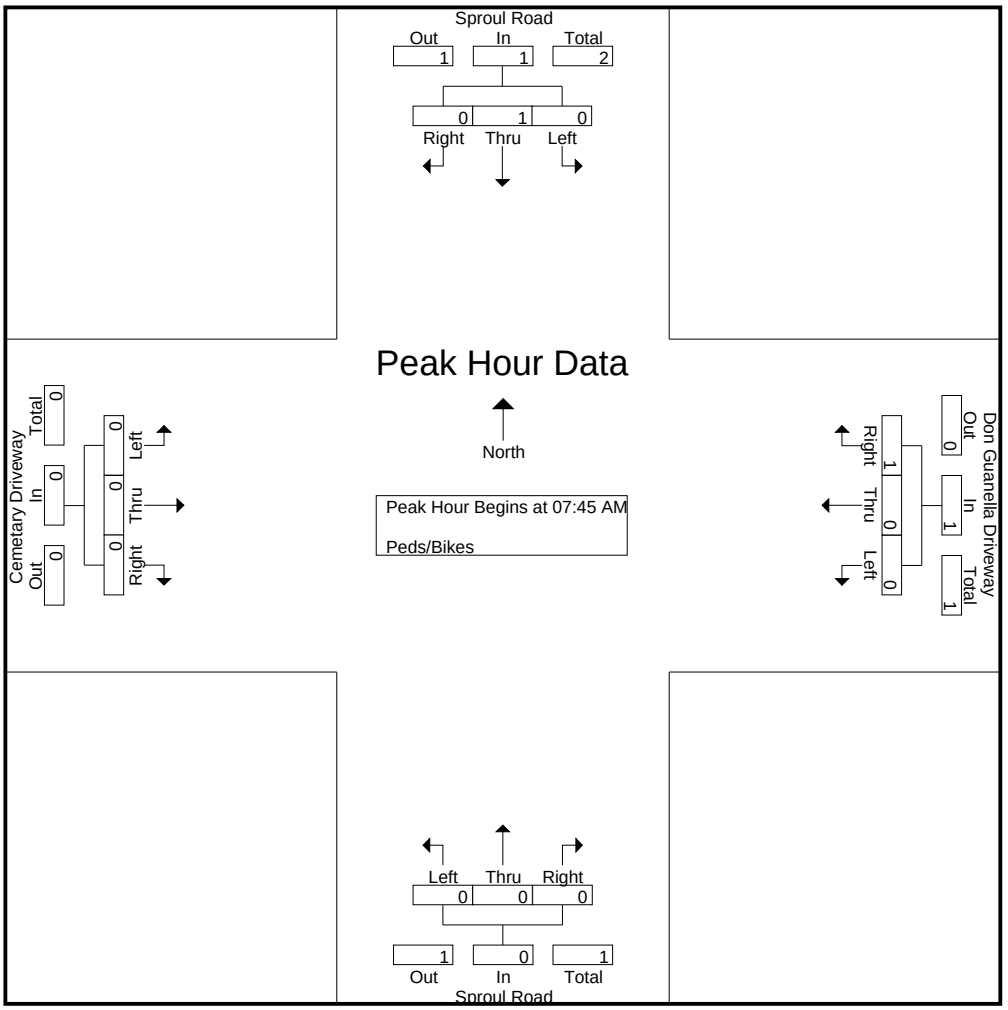


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Cemetary Driveway Eastbound | | | | Don Guanella Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 0 | **1** | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .500 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

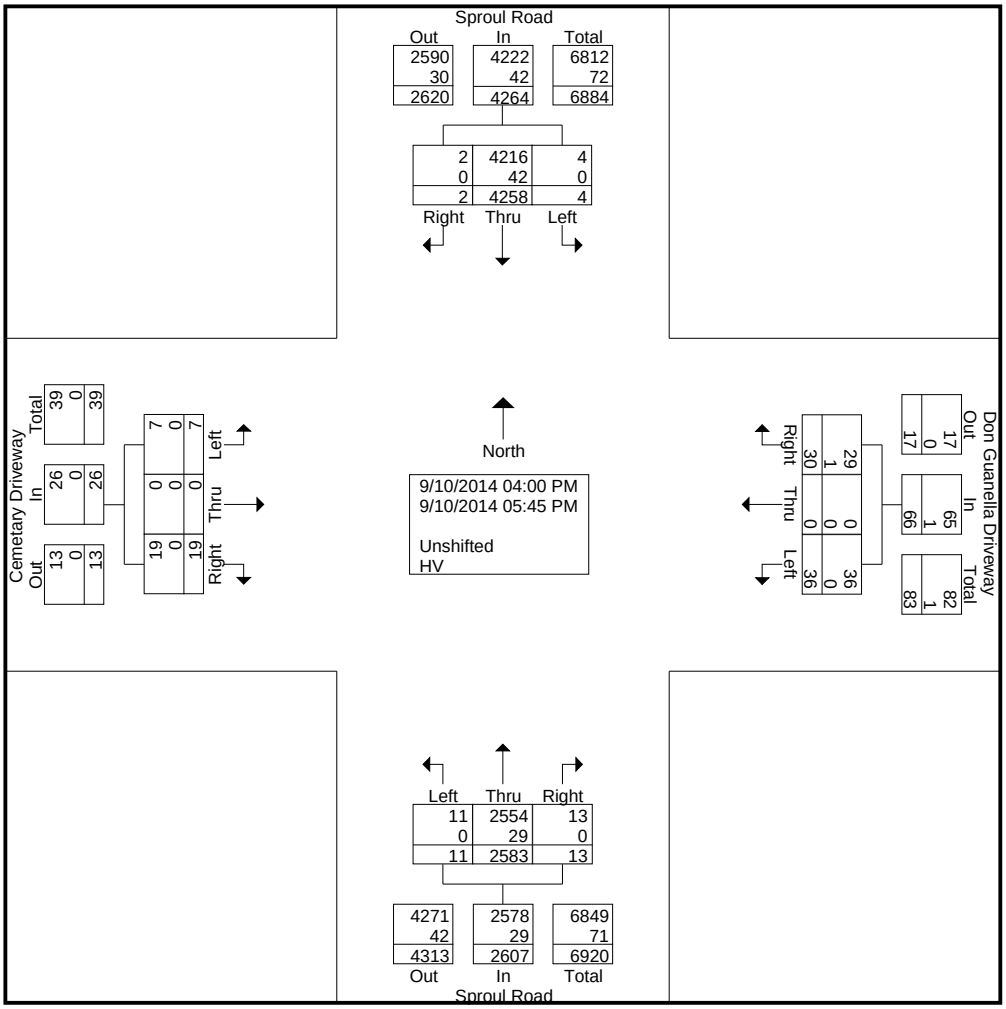
# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

Counter: 11
Counted by: SLynch
Weather: Clear

File Name : 2014-09-10 PM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Cemetary Driveway Eastbound | | | | | Don Guanella Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 3 | 0 | 11 | 0 | 14 | 6 | 0 | 5 | 0 | 11 | 8 | 324 | 2 | 0 | 334 | 0 | 483 | 2 | 0 | 485 | 0 | 844 | 844 |
| 04:15 PM | 3 | 0 | 5 | 0 | 8 | 4 | 0 | 3 | 0 | 7 | 1 | 293 | 6 | 0 | 300 | 1 | 538 | 0 | 0 | 539 | 0 | 854 | 854 |
| 04:30 PM | 1 | 0 | 3 | 0 | 4 | 8 | 0 | 2 | 0 | 10 | 0 | 312 | 1 | 0 | 313 | 1 | 544 | 0 | 0 | 545 | 0 | 872 | 872 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 5 | 0 | 11 | 1 | 341 | 2 | 0 | 344 | 1 | 544 | 0 | 0 | 545 | 0 | 900 | 900 |
| Total | 7 | 0 | 19 | 0 | 26 | 24 | 0 | 15 | 0 | 39 | 10 | 1270 | 11 | 0 | 1291 | 3 | 2109 | 2 | 0 | 2114 | 0 | 3470 | 3470 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 10 | 0 | 13 | 0 | 325 | 2 | 0 | 327 | 0 | 557 | 0 | 0 | 557 | 0 | 897 | 897 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 9 | 0 | 340 | 0 | 0 | 340 | 1 | 561 | 0 | 0 | 562 | 0 | 911 | 911 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 | 0 | 320 | 0 | 0 | 320 | 0 | 504 | 0 | 0 | 504 | 0 | 828 | 828 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 328 | 0 | 0 | 329 | 0 | 527 | 0 | 0 | 527 | 0 | 857 | 857 |
| Total | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 15 | 0 | 27 | 1 | 1313 | 2 | 0 | 1316 | 1 | 2149 | 0 | 0 | 2150 | 0 | 3493 | 3493 |
| Grand Total | 7 | 0 | 19 | 0 | 26 | 36 | 0 | 30 | 0 | 66 | 11 | 2583 | 13 | 0 | 2607 | 4 | 4258 | 2 | 0 | 4264 | 0 | 6963 | 6963 |
| Apprch % | 26.9 | 0 | 73.1 | | | 54.5 | 0 | 45.5 | | | 0.4 | 99.1 | 0.5 | | | 0.1 | 99.9 | 0 | | | | | |
| Total % | 0.1 | 0 | 0.3 | | 0.4 | 0.5 | 0 | 0.4 | | 0.9 | 0.2 | 37.1 | 0.2 | | 37.4 | 0.1 | 61.2 | 0 | | 61.2 | 0 | 100 | |
| Unshifted | 7 | 0 | 19 | | 26 | 36 | 0 | 29 | | 65 | 11 | 2554 | 13 | | 2578 | 4 | 4216 | 2 | | 4222 | 0 | 0 | 6891 |
| % Unshifted | 100 | 0 | 100 | 0 | 100 | 100 | 0 | 96.7 | 0 | 98.5 | 100 | 98.9 | 100 | 0 | 98.9 | 100 | 99 | 100 | 0 | 99 | 0 | 0 | 99 |
| HV | 0 | 0 | 0 | | 0 | 0 | 0 | 1 | | 1 | 0 | 29 | 0 | | 29 | 0 | 42 | 0 | | 42 | 0 | 0 | 72 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.3 | 0 | 1.5 | 0 | 1.1 | 0 | 0 | 1.1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |

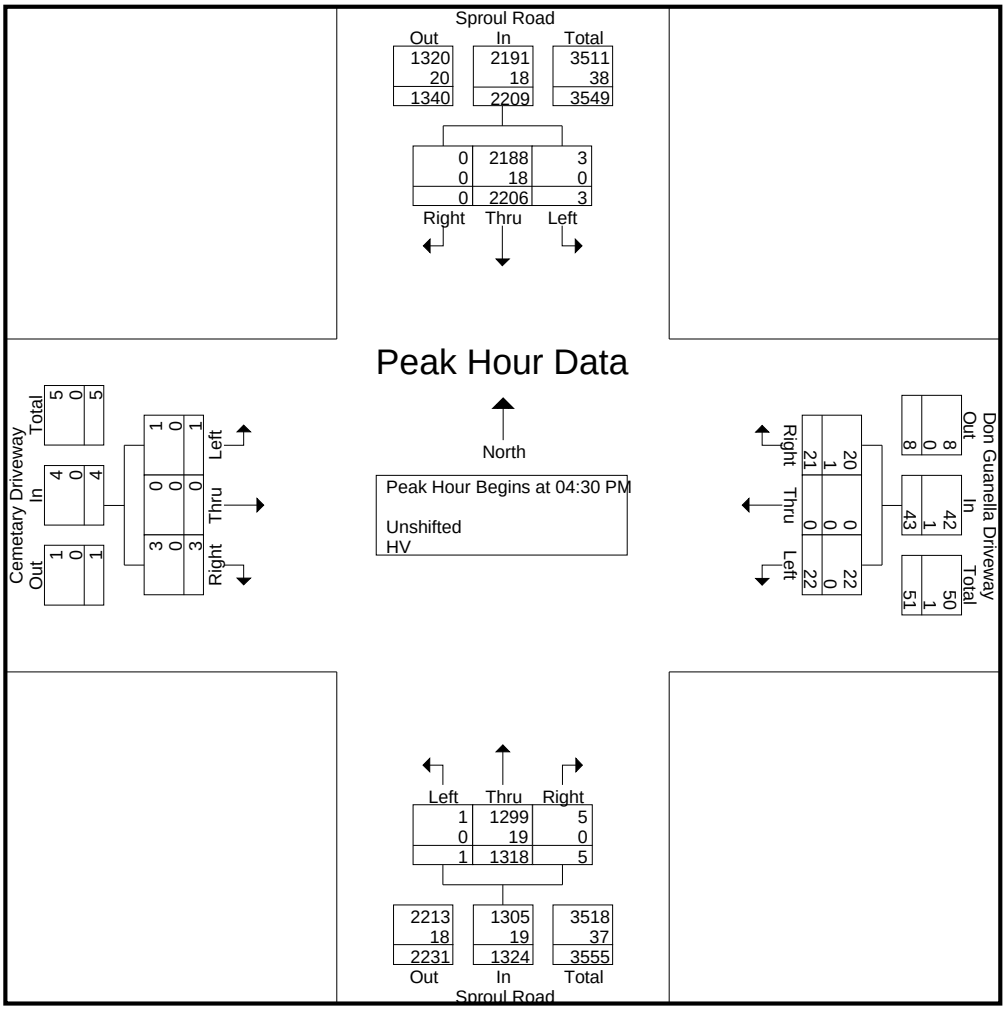


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Cemetary Driveway Eastbound | | | | Don Guanella Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | **1** | 0 | **3** | **4** | **8** | 0 | 2 | 10 | 0 | 312 | 1 | 313 | **1** | 544 | 0 | 545 | 872 |
| 04:45 PM | 0 | 0 | 0 | 0 | 6 | 0 | 5 | 11 | **1** | **341** | **2** | **344** | 1 | 544 | 0 | 545 | 900 |
| 05:00 PM | 0 | 0 | 0 | 0 | 3 | 0 | **10** | **13** | 0 | 325 | 2 | 327 | 0 | 557 | 0 | 557 | 897 |
| 05:15 PM | 0 | 0 | 0 | 0 | 5 | 0 | 4 | 9 | 0 | 340 | 0 | 340 | 1 | **561** | 0 | **562** | **911** |
| Total Volume | 1 | 0 | 3 | 4 | 22 | 0 | 21 | 43 | 1 | 1318 | 5 | 1324 | 3 | 2206 | 0 | 2209 | 3580 |
| % App. Total | 25 | 0 | 75 | | 51.2 | 0 | 48.8 | | 0.1 | 99.5 | 0.4 | | 0.1 | 99.9 | 0 | | |
| PHF | .250 | .000 | .250 | .250 | .688 | .000 | .525 | .827 | .250 | .966 | .625 | .962 | .750 | .983 | .000 | .983 | .982 |
| Unshifted | 1 | 0 | 3 | 4 | 22 | 0 | 20 | 42 | 1 | 1299 | 5 | 1305 | 3 | 2188 | 0 | 2191 | 3542 |
| % Unshifted | 100 | 0 | 100 | 100 | 100 | 0 | 95.2 | 97.7 | 100 | 98.6 | 100 | 98.6 | 100 | 99.2 | 0 | 99.2 | 98.9 |
| HV | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 19 | 0 | 19 | 0 | 18 | 0 | 18 | 38 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 | 2.3 | 0 | 1.4 | 0 | 1.4 | 0 | 0.8 | 0 | 0.8 | 1.1 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

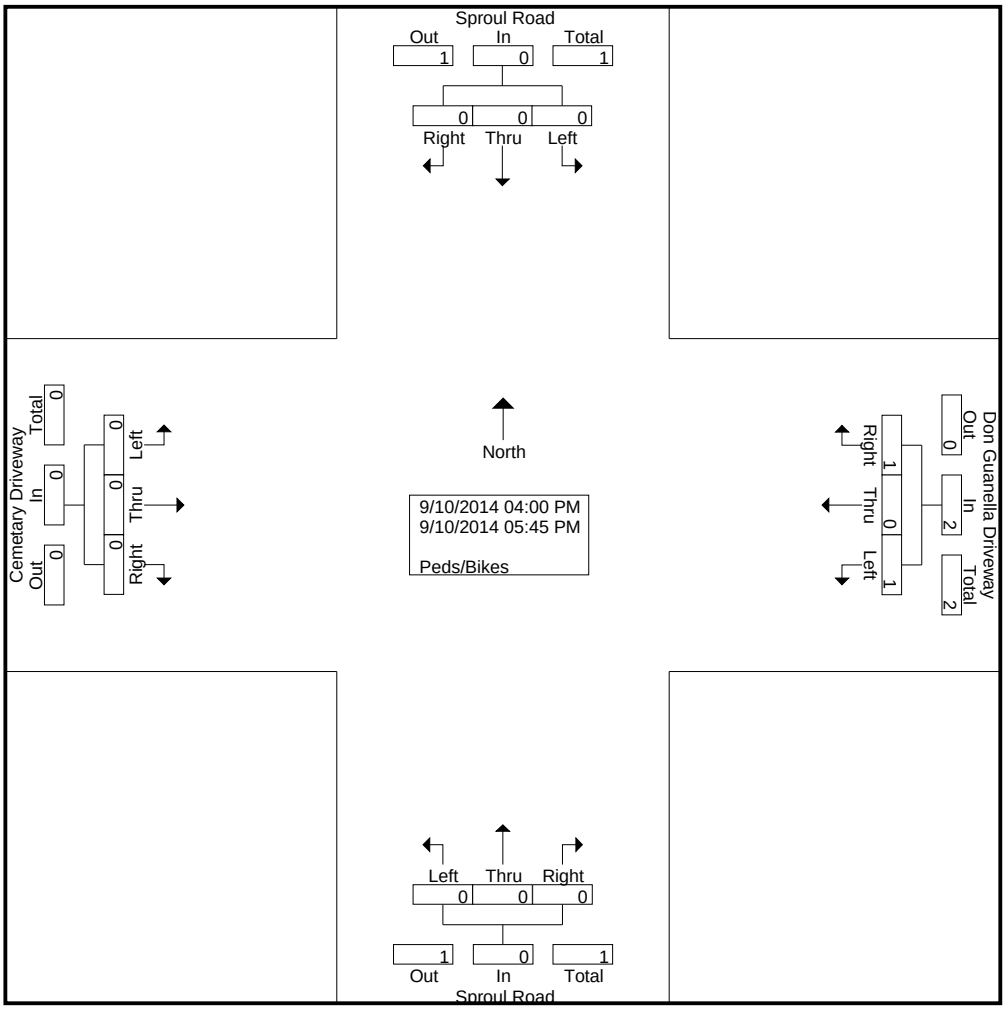
# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

Counter: 11
Counted by: SLynch
Weather: Clear

File Name : 2014-09-10 PM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Cemetary Driveway Eastbound | | | | | Don Guanella Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Apprch % | 0 | 0 | 0 | | | 50 | 0 | 50 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 50 | 0 | 50 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 100 | |

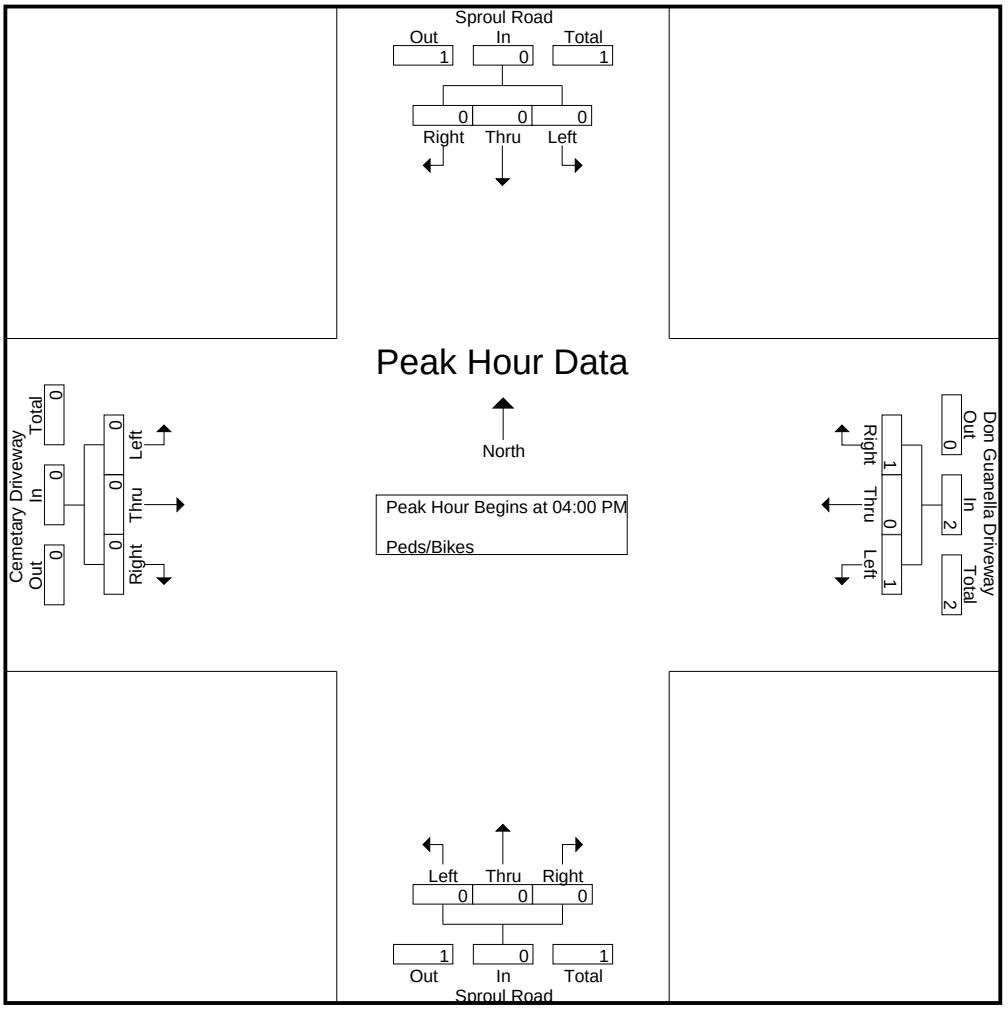


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Cemetary Driveway/Don Guanella Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Sproul Don Guanella
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Cemetary Driveway Eastbound | | | | Don Guanella Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | **1** | 0 | **1** | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % App. Total | 0 | 0 | 0 | | 50 | 0 | 50 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |



**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

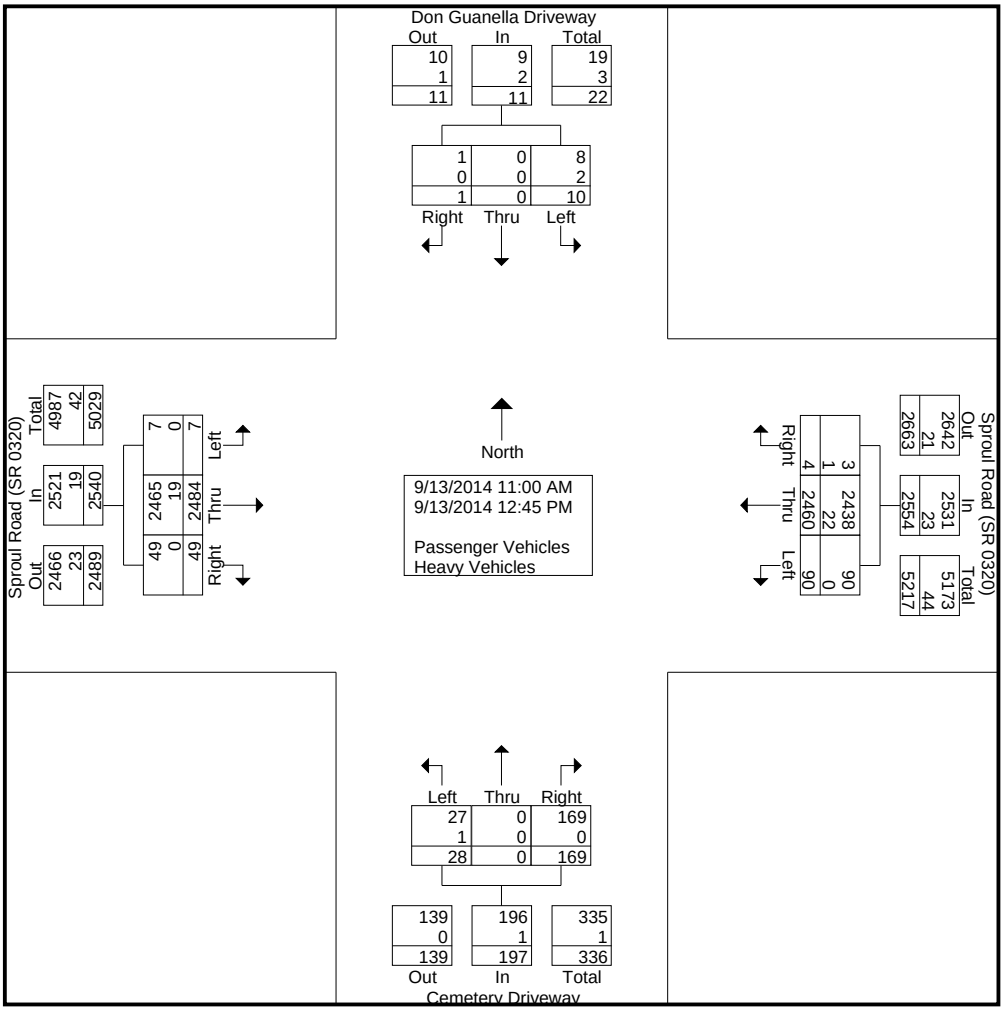
# Sproul Road (SR 0320) and Don Guanella Driveway/Cemetery Driveway

Counter: 25
Counted by: BP
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320DG
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Passenger Vehicles - Heavy Vehicles**

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Cemetery Driveway Northbound | | | | Don Guanella Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 11:00 AM | 4 | 286 | 9 | 299 | 17 | 269 | 0 | 286 | 3 | 0 | 8 | 11 | 3 | 0 | 0 | 3 | 599 |
| 11:15 AM | 0 | 282 | 8 | 290 | 22 | 345 | 0 | 367 | 3 | 0 | 9 | 12 | 0 | 0 | 0 | 0 | 669 |
| 11:30 AM | 2 | 312 | 7 | 321 | 15 | 311 | 2 | 328 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 657 |
| 11:45 AM | 0 | 325 | 12 | 337 | 8 | 291 | 2 | 301 | 3 | 0 | 11 | 14 | 5 | 0 | 0 | 5 | 657 |
| Total | 6 | 1205 | 36 | 1247 | 62 | 1216 | 4 | 1282 | 9 | 0 | 36 | 45 | 8 | 0 | 0 | 8 | 2582 |
| 12:00 PM | 1 | 307 | 4 | 312 | 4 | 369 | 0 | 373 | 2 | 0 | 5 | 7 | 1 | 0 | 1 | 2 | 694 |
| 12:15 PM | 0 | 325 | 5 | 330 | 11 | 303 | 0 | 314 | 5 | 0 | 10 | 15 | 1 | 0 | 0 | 1 | 660 |
| 12:30 PM | 0 | 292 | 3 | 295 | 11 | 283 | 0 | 294 | 6 | 0 | 38 | 44 | 0 | 0 | 0 | 0 | 633 |
| 12:45 PM | 0 | 355 | 1 | 356 | 2 | 289 | 0 | 291 | 6 | 0 | 80 | 86 | 0 | 0 | 0 | 0 | 733 |
| Total | 1 | 1279 | 13 | 1293 | 28 | 1244 | 0 | 1272 | 19 | 0 | 133 | 152 | 2 | 0 | 1 | 3 | 2720 |
| Grand Total | 7 | 2484 | 49 | 2540 | 90 | 2460 | 4 | 2554 | 28 | 0 | 169 | 197 | 10 | 0 | 1 | 11 | 5302 |
| Apprch % | 0.3 | 97.8 | 1.9 | | 3.5 | 96.3 | 0.2 | | 14.2 | 0 | 85.8 | | 90.9 | 0 | 9.1 | | |
| Total % | 0.1 | 46.9 | 0.9 | 47.9 | 1.7 | 46.4 | 0.1 | 48.2 | 0.5 | 0 | 3.2 | 3.7 | 0.2 | 0 | 0 | 0.2 | |
| Passenger Vehicles | 7 | 2465 | 49 | 2521 | 90 | 2438 | 3 | 2531 | 27 | 0 | 169 | 196 | 8 | 0 | 1 | 9 | 5257 |
| % Passenger Vehicles | 100 | 99.2 | 100 | 99.3 | 100 | 99.1 | 75 | 99.1 | 96.4 | 0 | 100 | 99.5 | 80 | 0 | 100 | 81.8 | 99.2 |
| Heavy Vehicles | 0 | 19 | 0 | 19 | 0 | 22 | 1 | 23 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 45 |
| % Heavy Vehicles | 0 | 0.8 | 0 | 0.7 | 0 | 0.9 | 25 | 0.9 | 3.6 | 0 | 0 | 0.5 | 20 | 0 | 0 | 18.2 | 0.8 |



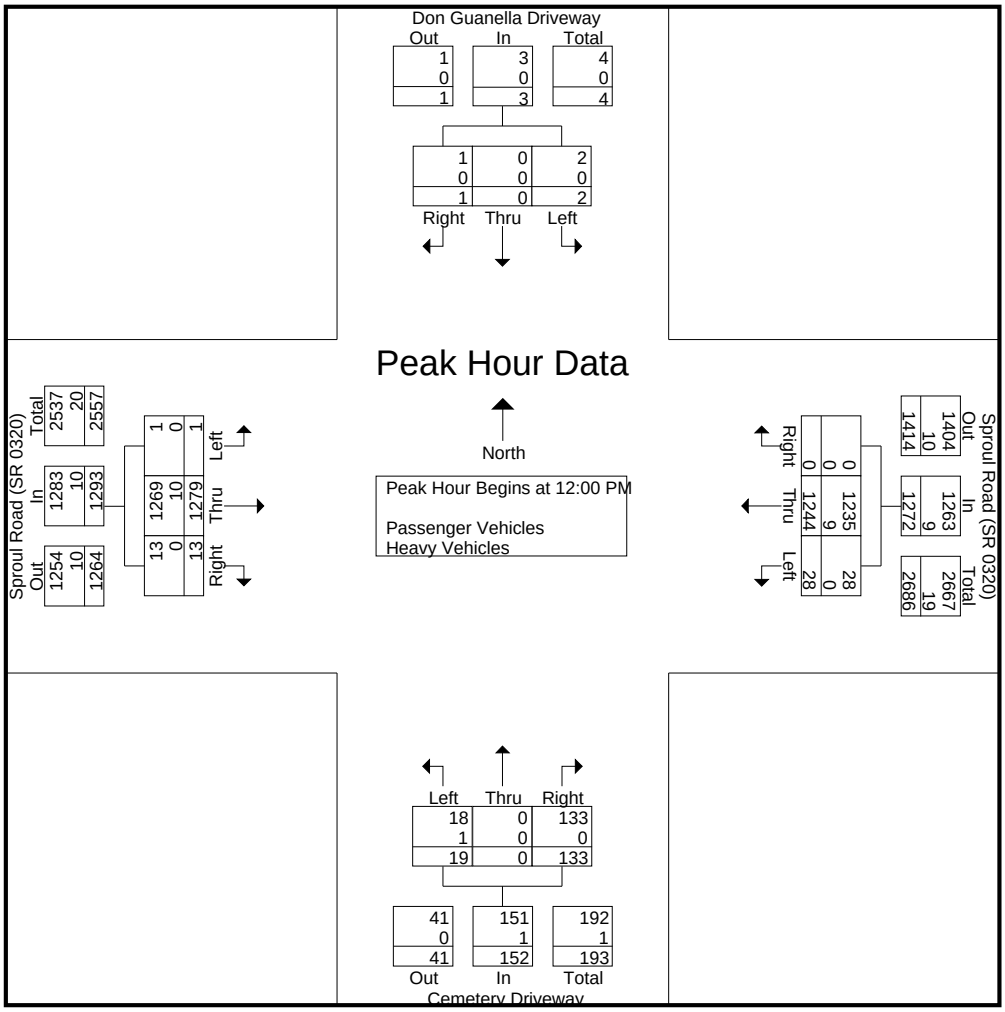
**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

# Sproul Road (SR 0320) and Don Guanella Driveway/Cemetery Driveway

Counter: 25
Counted by: BP
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320DG
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Cemetery Driveway Northbound | | | | Don Guanella Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 1 | 307 | 4 | 312 | 4 | 369 | 0 | 373 | 2 | 0 | 5 | 7 | 1 | 0 | 1 | 2 | 694 |
| 12:15 PM | 0 | 325 | 5 | 330 | 11 | 303 | 0 | 314 | 5 | 0 | 10 | 15 | 1 | 0 | 0 | 1 | 660 |
| 12:30 PM | 0 | 292 | 3 | 295 | 11 | 283 | 0 | 294 | 6 | 0 | 38 | 44 | 0 | 0 | 0 | 0 | 633 |
| 12:45 PM | 0 | 355 | 1 | 356 | 2 | 289 | 0 | 291 | 6 | 0 | 80 | 86 | 0 | 0 | 0 | 0 | 733 |
| Total Volume | 1 | 1279 | 13 | 1293 | 28 | 1244 | 0 | 1272 | 19 | 0 | 133 | 152 | 2 | 0 | 1 | 3 | 2720 |
| % App. Total | 0.1 | 98.9 | 1 | | 2.2 | 97.8 | 0 | | 12.5 | 0 | 87.5 | | 66.7 | 0 | 33.3 | | |
| PHF | .250 | .901 | .650 | .908 | .636 | .843 | .000 | .853 | .792 | .000 | .416 | .442 | .500 | .000 | .250 | .375 | .928 |
| Passenger Vehicles | 1 | 1269 | 13 | 1283 | 28 | 1235 | 0 | 1263 | 18 | 0 | 133 | 151 | 2 | 0 | 1 | 3 | 2700 |
| % Passenger Vehicles | 100 | 99.2 | 100 | 99.2 | 100 | 99.3 | 0 | 99.3 | 94.7 | 0 | 100 | 99.3 | 100 | 0 | 100 | 100 | 99.3 |
| Heavy Vehicles | 0 | 10 | 0 | 10 | 0 | 9 | 0 | 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 20 |
| % Heavy Vehicles | 0 | 0.8 | 0 | 0.8 | 0 | 0.7 | 0 | 0.7 | 5.3 | 0 | 0 | 0.7 | 0 | 0 | 0 | 0 | 0.7 |



# *SPROUL ROAD & SOUTHERN CEMETARY DRIVEWAY*

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014

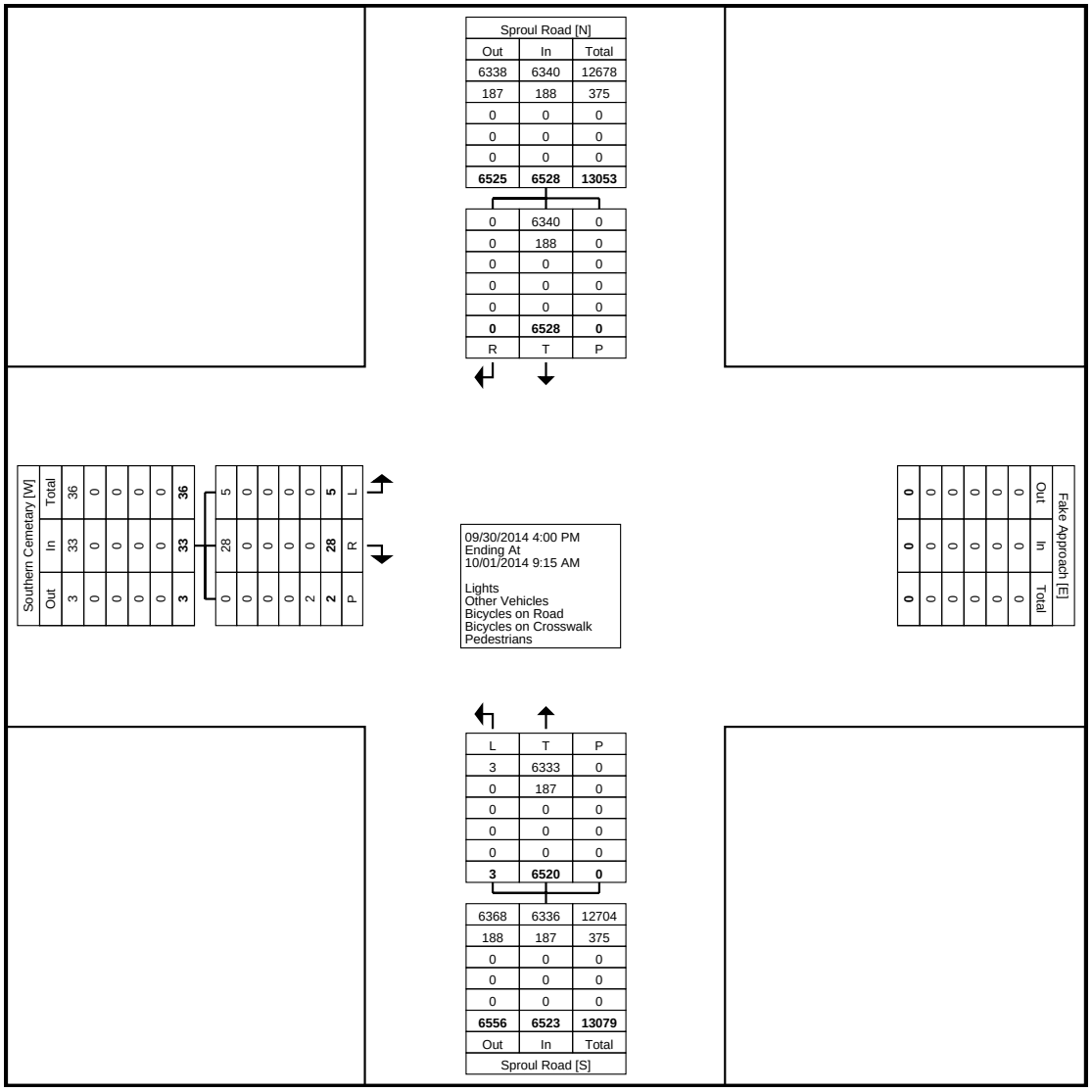

# Turning Movement Data

| Start Time | Southern Cemetary Eastbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 4:00 PM | 1 | 5 | 0 | 6 | 0 | 285 | 0 | 285 | 505 | 0 | 0 | 505 | 796 |
| 4:15 PM | 2 | 12 | 0 | 14 | 0 | 333 | 0 | 333 | 480 | 0 | 0 | 480 | 827 |
| 4:30 PM | 1 | 2 | 1 | 3 | 0 | 352 | 0 | 352 | 540 | 0 | 0 | 540 | 895 |
| 4:45 PM | 0 | 2 | 0 | 2 | 2 | 342 | 0 | 344 | 520 | 0 | 0 | 520 | 866 |
| Hourly Total | 4 | 21 | 1 | 25 | 2 | 1312 | 0 | 1314 | 2045 | 0 | 0 | 2045 | 3384 |
| 5:00 PM | 0 | 3 | 1 | 3 | 0 | 333 | 0 | 333 | 522 | 0 | 0 | 522 | 858 |
| 5:15 PM | 0 | 2 | 0 | 2 | 0 | 325 | 0 | 325 | 518 | 0 | 0 | 518 | 845 |
| 5:30 PM | 1 | 0 | 0 | 1 | 0 | 297 | 0 | 297 | 531 | 0 | 0 | 531 | 829 |
| 5:45 PM | 0 | 2 | 0 | 2 | 0 | 276 | 0 | 276 | 488 | 0 | 0 | 488 | 766 |
| Hourly Total | 1 | 7 | 1 | 8 | 0 | 1231 | 0 | 1231 | 2059 | 0 | 0 | 2059 | 3298 |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 5 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 5 |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 470 | 0 | 470 | 264 | 0 | 0 | 264 | 734 |
| 7:15 AM | 0 | 0 | 0 | 0 | 1 | 464 | 0 | 465 | 324 | 0 | 0 | 324 | 789 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 521 | 0 | 521 | 386 | 0 | 0 | 386 | 907 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 514 | 0 | 514 | 342 | 0 | 0 | 342 | 856 |
| Hourly Total | 0 | 0 | 0 | 0 | 1 | 1969 | 0 | 1970 | 1316 | 0 | 0 | 1316 | 3286 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 480 | 0 | 480 | 308 | 0 | 0 | 308 | 788 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 542 | 0 | 542 | 277 | 0 | 0 | 277 | 819 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 550 | 259 | 0 | 0 | 259 | 809 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 436 | 0 | 436 | 259 | 0 | 0 | 259 | 695 |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 2008 | 0 | 2008 | 1103 | 0 | 0 | 1103 | 3111 |
| 9:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 5 | 28 | 2 | 33 | 3 | 6520 | 0 | 6523 | 6528 | 0 | 0 | 6528 | 13084 |
| Approach % | 15.2 | 84.8 | - | - | 0.0 | 100.0 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.0 | 0.2 | - | 0.3 | 0.0 | 49.8 | - | 49.9 | 49.9 | 0.0 | - | 49.9 | - |
| Lights | 5 | 28 | - | 33 | 3 | 6333 | - | 6336 | 6340 | 0 | - | 6340 | 12709 |
| % Lights | 100.0 | 100.0 | - | 100.0 | 100.0 | 97.1 | - | 97.1 | 97.1 | - | - | 97.1 | 97.1 |
| Other Vehicles | 0 | 0 | - | 0 | 0 | 187 | - | 187 | 188 | 0 | - | 188 | 375 |
| % Other Vehicles | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.9 | - | 2.9 | 2.9 | - | - | 2.9 | 2.9 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 2 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014

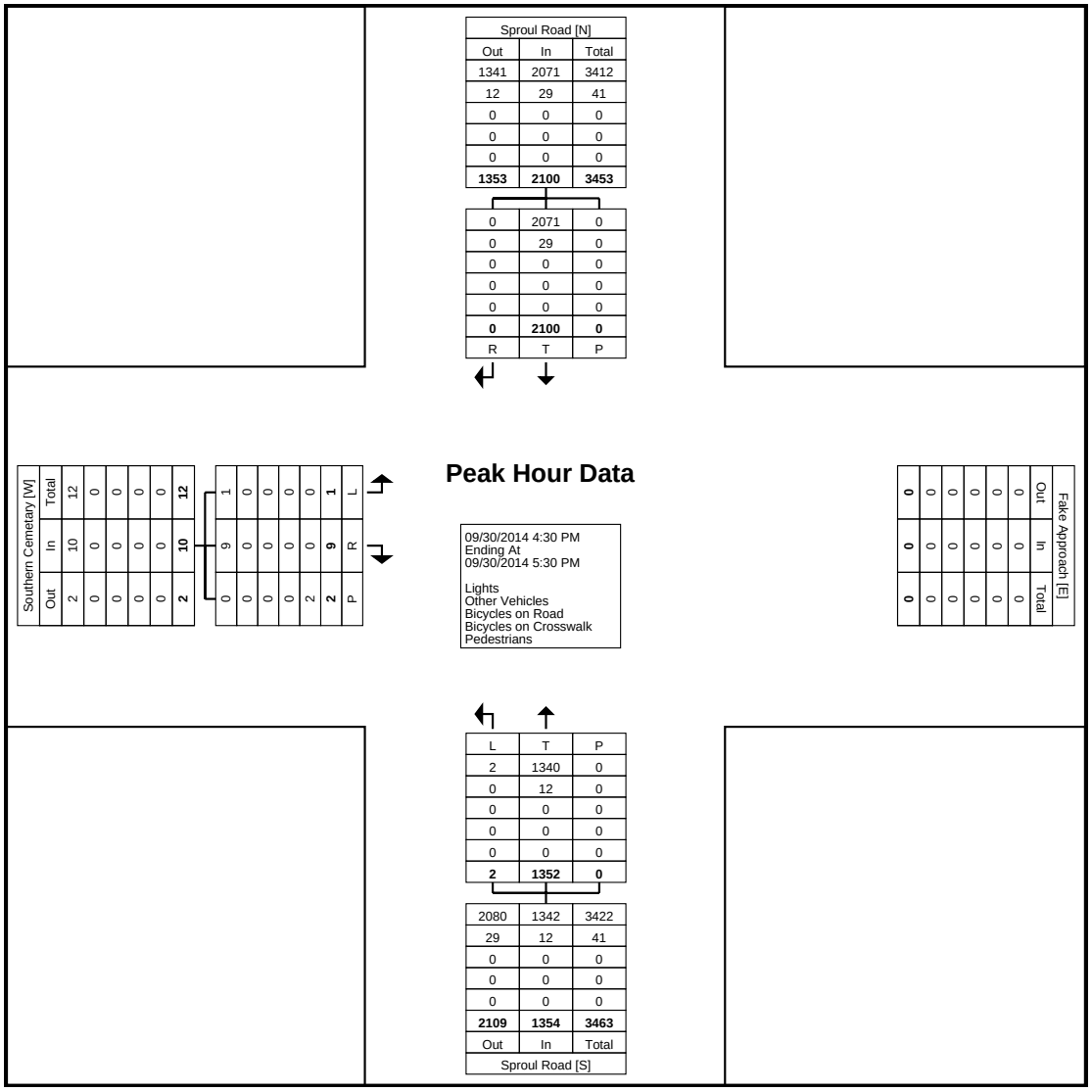

# Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Southern Cemetary Eastbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 4:30 PM | 1 | 2 | 1 | 3 | 0 | 352 | 0 | 352 | 540 | 0 | 0 | 540 | 895 |
| 4:45 PM | 0 | 2 | 0 | 2 | 2 | 342 | 0 | 344 | 520 | 0 | 0 | 520 | 866 |
| 5:00 PM | 0 | 3 | 1 | 3 | 0 | 333 | 0 | 333 | 522 | 0 | 0 | 522 | 858 |
| 5:15 PM | 0 | 2 | 0 | 2 | 0 | 325 | 0 | 325 | 518 | 0 | 0 | 518 | 845 |
| Total | 1 | 9 | 2 | 10 | 2 | 1352 | 0 | 1354 | 2100 | 0 | 0 | 2100 | 3464 |
| Approach % | 10.0 | 90.0 | - | - | 0.1 | 99.9 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.0 | 0.3 | - | 0.3 | 0.1 | 39.0 | - | 39.1 | 60.6 | 0.0 | - | 60.6 | - |
| PHF | 0.250 | 0.750 | - | 0.833 | 0.250 | 0.960 | - | 0.962 | 0.972 | 0.000 | - | 0.972 | 0.968 |
| Lights | 1 | 9 | - | 10 | 2 | 1340 | - | 1342 | 2071 | 0 | - | 2071 | 3423 |
| % Lights | 100.0 | 100.0 | - | 100.0 | 100.0 | 99.1 | - | 99.1 | 98.6 | - | - | 98.6 | 98.8 |
| Other Vehicles | 0 | 0 | - | 0 | 0 | 12 | - | 12 | 29 | 0 | - | 29 | 41 |
| % Other Vehicles | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.9 | - | 0.9 | 1.4 | - | - | 1.4 | 1.2 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 2 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014


Turning Movement Peak Hour Data Plot (4:30 PM)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014

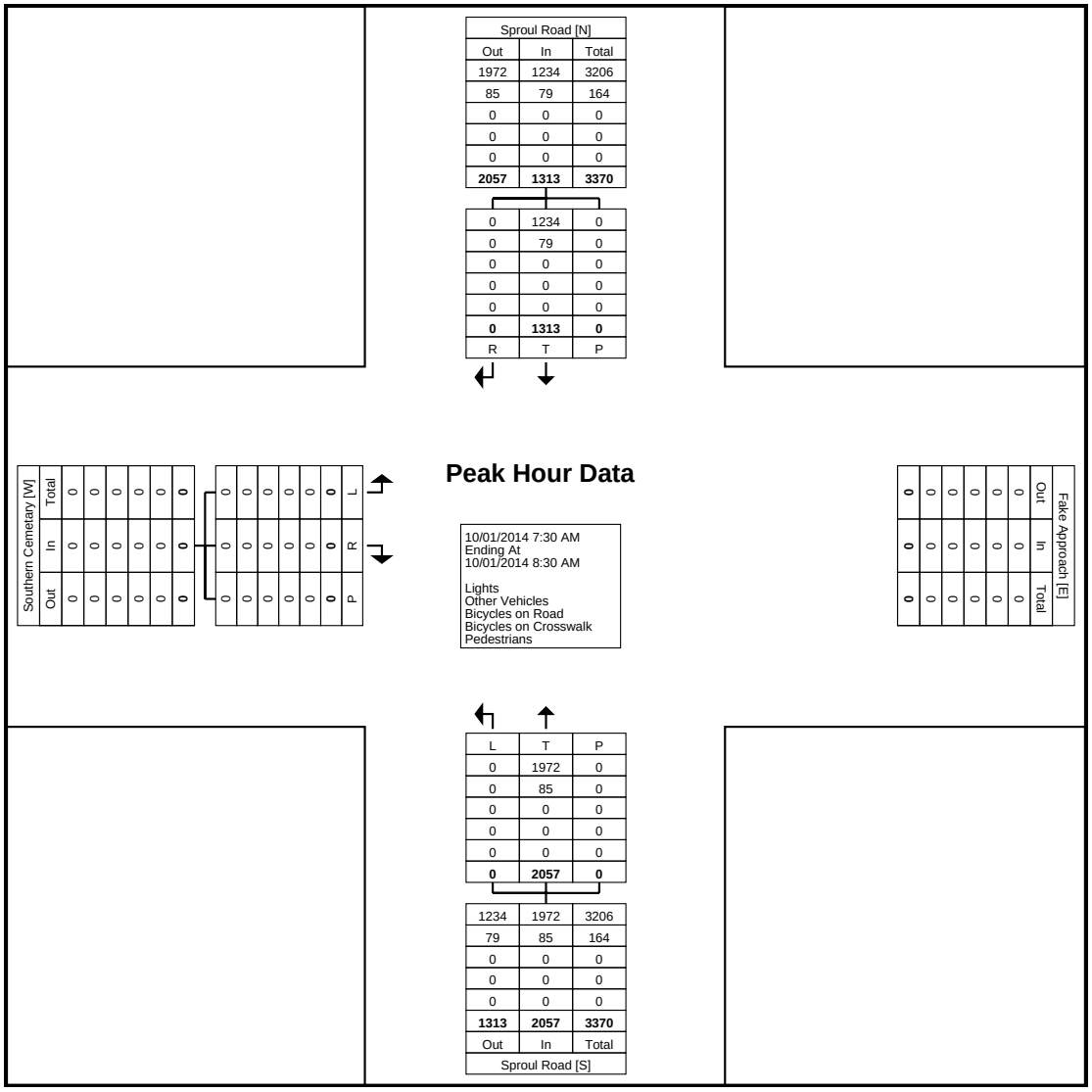

# Turning Movement Peak Hour Data (7:30 AM)

| Start Time | Southern Cemetary Eastbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 521 | 0 | 521 | 386 | 0 | 0 | 386 | 907 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 514 | 0 | 514 | 342 | 0 | 0 | 342 | 856 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 480 | 0 | 480 | 308 | 0 | 0 | 308 | 788 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 542 | 0 | 542 | 277 | 0 | 0 | 277 | 819 |
| Total | 0 | 0 | 0 | 0 | 0 | 2057 | 0 | 2057 | 1313 | 0 | 0 | 1313 | 3370 |
| Approach % | NaN | NaN | - | - | 0.0 | 100.0 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.0 | 0.0 | - | 0.0 | 0.0 | 61.0 | - | 61.0 | 39.0 | 0.0 | - | 39.0 | - |
| PHF | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.949 | - | 0.949 | 0.850 | 0.000 | - | 0.850 | 0.929 |
| Lights | 0 | 0 | - | 0 | 0 | 1972 | - | 1972 | 1234 | 0 | - | 1234 | 3206 |
| % Lights | - | - | - | - | - | 95.9 | - | 95.9 | 94.0 | - | - | 94.0 | 95.1 |
| Other Vehicles | 0 | 0 | - | 0 | 0 | 85 | - | 85 | 79 | 0 | - | 79 | 164 |
| % Other Vehicles | - | - | - | - | - | 4.1 | - | 4.1 | 6.0 | - | - | 6.0 | 4.9 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | - | - | - | - | 0.0 | - | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: RK
Weather:: Clear

Count Name: Sproul Road & Southern Cemetary Driveway - AM & PM
Site Code:
Start Date: 09/30/2014
Page No: 6




Turning Movement Peak Hour Data Plot (7:30 AM)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - SAT
Site Code:
Start Date: 10/04/2014

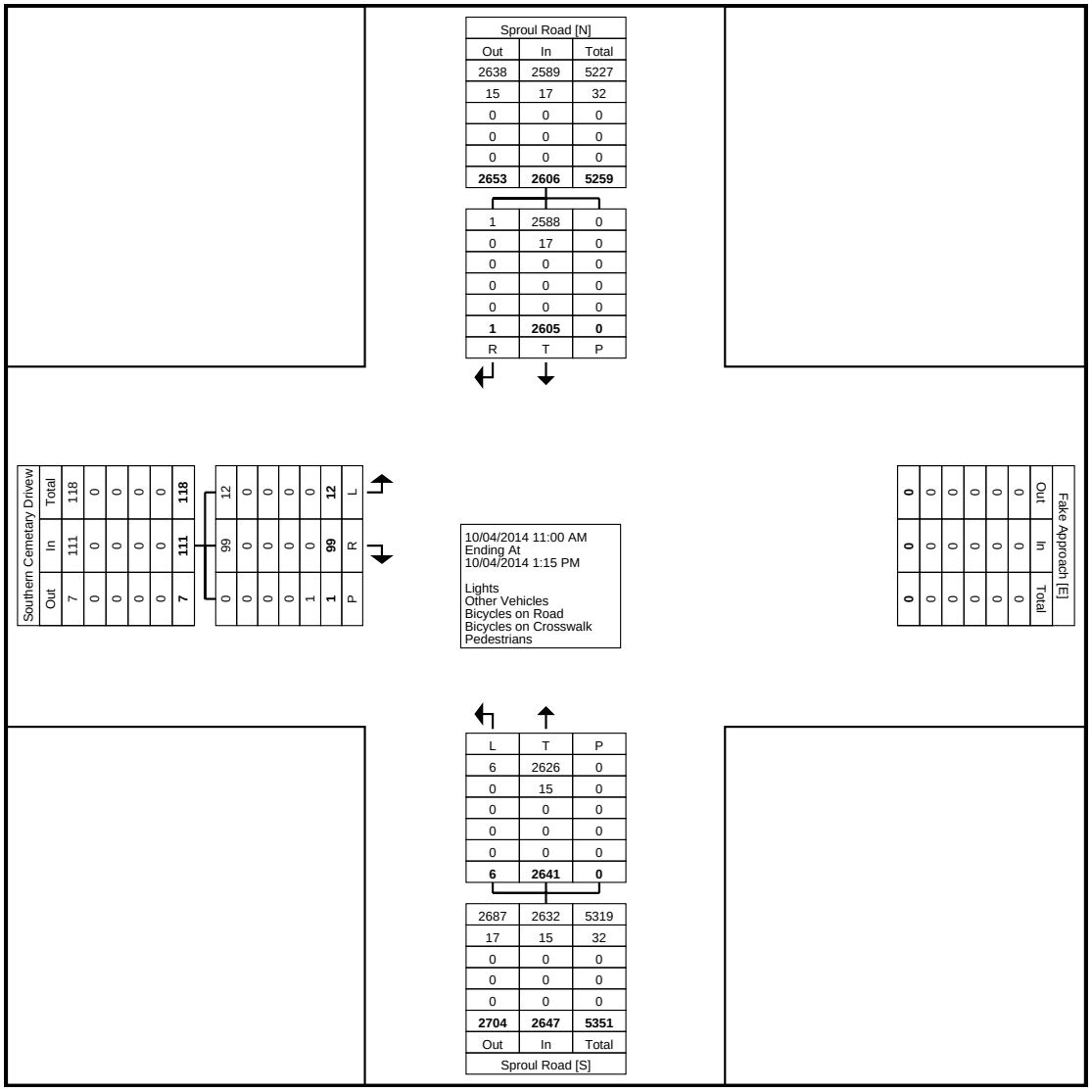

# Turning Movement Data

| Start Time | Southern Cemetary Driveway Eastbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 0 | 6 | 0 | 6 | 1 | 293 | 0 | 294 | 285 | 0 | 0 | 285 | 585 |
| 11:15 AM | 0 | 8 | 0 | 8 | 1 | 322 | 0 | 323 | 306 | 0 | 0 | 306 | 637 |
| 11:30 AM | 0 | 10 | 0 | 10 | 0 | 331 | 0 | 331 | 344 | 0 | 0 | 344 | 685 |
| 11:45 AM | 0 | 7 | 0 | 7 | 0 | 305 | 0 | 305 | 336 | 0 | 0 | 336 | 648 |
| Hourly Total | 0 | 31 | 0 | 31 | 2 | 1251 | 0 | 1253 | 1271 | 0 | 0 | 1271 | 2555 |
| 12:00 PM | 2 | 4 | 0 | 6 | 0 | 312 | 0 | 312 | 303 | 0 | 0 | 303 | 621 |
| 12:15 PM | 0 | 22 | 0 | 22 | 0 | 334 | 0 | 334 | 348 | 0 | 0 | 348 | 704 |
| 12:30 PM | 6 | 34 | 0 | 40 | 0 | 317 | 0 | 317 | 367 | 0 | 0 | 367 | 724 |
| 12:45 PM | 4 | 8 | 1 | 12 | 4 | 426 | 0 | 430 | 316 | 1 | 0 | 317 | 759 |
| Hourly Total | 12 | 68 | 1 | 80 | 4 | 1389 | 0 | 1393 | 1334 | 1 | 0 | 1335 | 2808 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 12 | 99 | 1 | 111 | 6 | 2641 | 0 | 2647 | 2605 | 1 | 0 | 2606 | 5364 |
| Approach % | 10.8 | 89.2 | - | - | 0.2 | 99.8 | - | - | 100.0 | 0.0 | - | - | - |
| Total % | 0.2 | 1.8 | - | 2.1 | 0.1 | 49.2 | - | 49.3 | 48.6 | 0.0 | - | 48.6 | - |
| Lights | 12 | 99 | - | 111 | 6 | 2626 | - | 2632 | 2588 | 1 | - | 2589 | 5332 |
| % Lights | 100.0 | 100.0 | - | 100.0 | 100.0 | 99.4 | - | 99.4 | 99.3 | 100.0 | - | 99.3 | 99.4 |
| Other Vehicles | 0 | 0 | - | 0 | 0 | 15 | - | 15 | 17 | 0 | - | 17 | 32 |
| % Other Vehicles | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.6 | - | 0.6 | 0.7 | 0.0 | - | 0.7 | 0.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - SAT
Site Code:
Start Date: 10/04/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Sproul Road & Southern Cemetary Driveway - SAT
Site Code:
Start Date: 10/04/2014

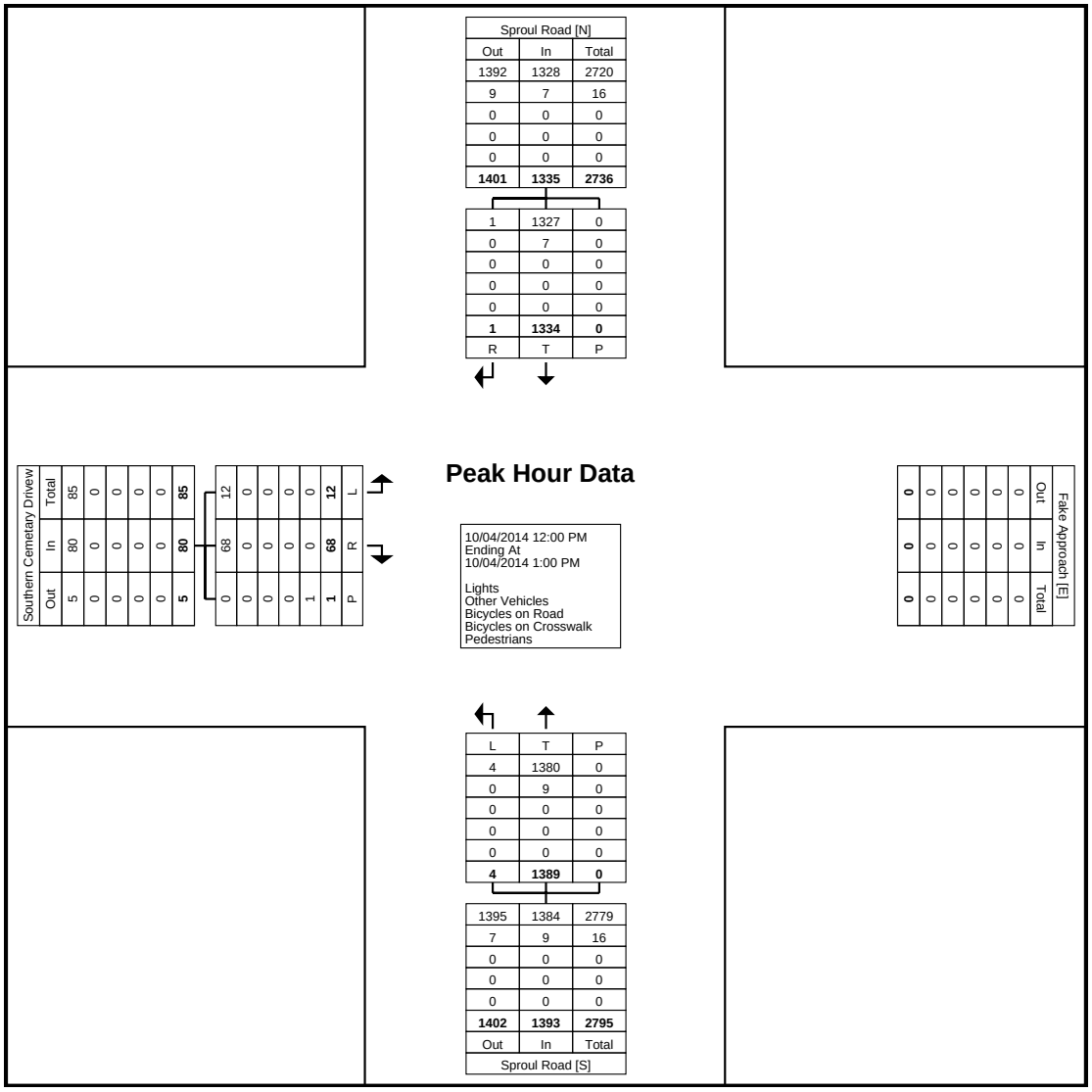

# Turning Movement Peak Hour Data (12:00 PM)

| Start Time | Southern Cemetary Driveway Eastbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 12:00 PM | 2 | 4 | 0 | 6 | 0 | 312 | 0 | 312 | 303 | 0 | 0 | 303 | 621 |
| 12:15 PM | 0 | 22 | 0 | 22 | 0 | 334 | 0 | 334 | 348 | 0 | 0 | 348 | 704 |
| 12:30 PM | 6 | 34 | 0 | 40 | 0 | 317 | 0 | 317 | 367 | 0 | 0 | 367 | 724 |
| 12:45 PM | 4 | 8 | 1 | 12 | 4 | 426 | 0 | 430 | 316 | 1 | 0 | 317 | 759 |
| Total | 12 | 68 | 1 | 80 | 4 | 1389 | 0 | 1393 | 1334 | 1 | 0 | 1335 | 2808 |
| Approach % | 15.0 | 85.0 | - | - | 0.3 | 99.7 | - | - | 99.9 | 0.1 | - | - | - |
| Total % | 0.4 | 2.4 | - | 2.8 | 0.1 | 49.5 | - | 49.6 | 47.5 | 0.0 | - | 47.5 | - |
| PHF | 0.500 | 0.500 | - | 0.500 | 0.250 | 0.815 | - | 0.810 | 0.909 | 0.250 | - | 0.909 | 0.925 |
| Lights | 12 | 68 | - | 80 | 4 | 1380 | - | 1384 | 1327 | 1 | - | 1328 | 2792 |
| % Lights | 100.0 | 100.0 | - | 100.0 | 100.0 | 99.4 | - | 99.4 | 99.5 | 100.0 | - | 99.5 | 99.4 |
| Other Vehicles | 0 | 0 | - | 0 | 0 | 9 | - | 9 | 7 | 0 | - | 7 | 16 |
| % Other Vehicles | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.6 | - | 0.6 | 0.5 | 0.0 | - | 0.5 | 0.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: RK
Weather:: Clear

Count Name: Sproul Road & Southern Cemetary Driveway - SAT
Site Code:
Start Date: 10/04/2014


Turning Movement Peak Hour Data Plot (12:00 PM)

## *SPROUL ROAD & HS DRIVEWAY*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

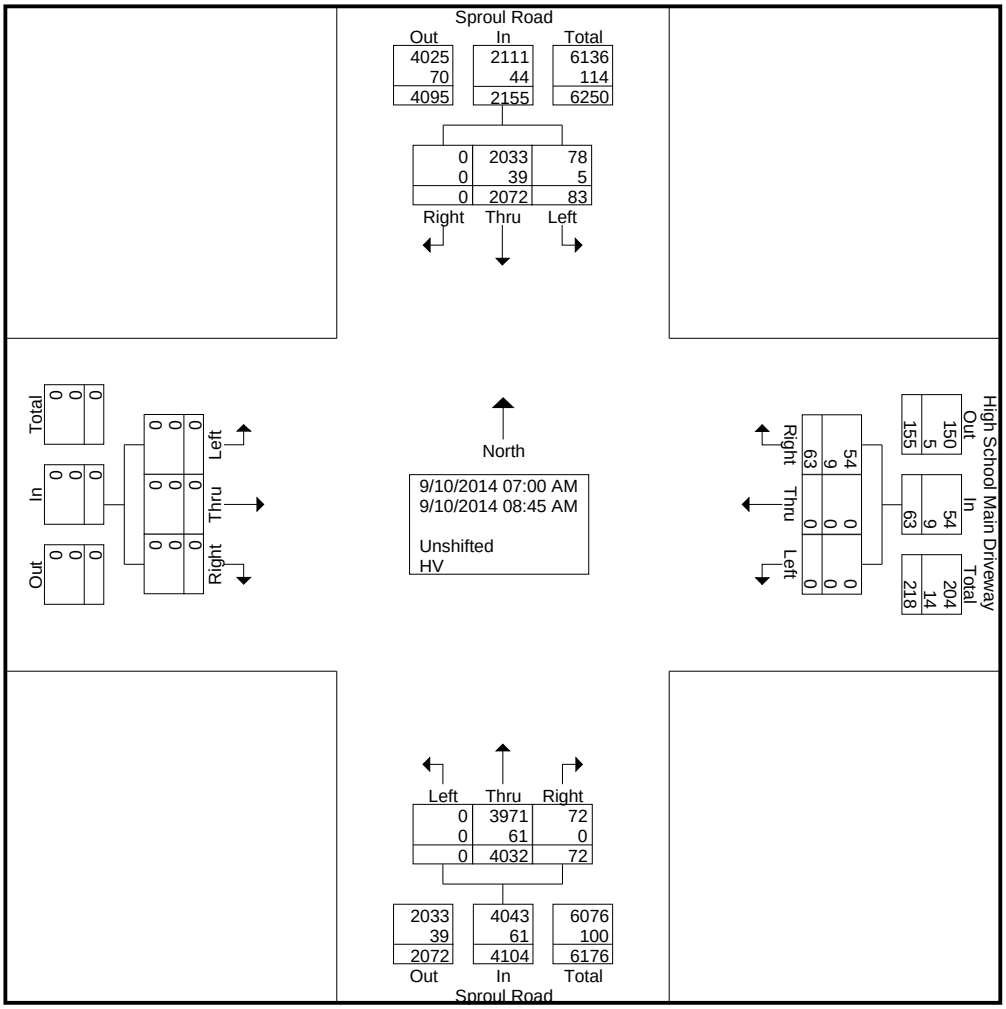
# Sproul Road & High School Driveway
# Marple Township, Delaware County

Counter: 26
Counted by: MDao
Weather: Clear

File Name : 2014-09-10 AM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eastbound | | | | | High School Main Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 428 | 7 | 0 | 435 | 16 | 204 | 0 | 0 | 220 | 0 | 663 | 663 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 478 | 13 | 0 | 491 | 20 | 270 | 0 | 0 | 290 | 0 | 791 | 791 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 552 | 37 | 0 | 589 | 36 | 286 | 0 | 0 | 322 | 0 | 935 | 935 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 574 | 3 | 0 | 577 | 7 | 283 | 0 | 0 | 290 | 0 | 878 | 878 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 53 | 0 | 2032 | 60 | 0 | 2092 | 79 | 1043 | 0 | 0 | 1122 | 0 | 3267 | 3267 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 500 | 1 | 0 | 501 | 1 | 264 | 0 | 0 | 265 | 0 | 767 | 767 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 529 | 3 | 0 | 532 | 1 | 251 | 0 | 0 | 252 | 0 | 786 | 786 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 555 | 4 | 0 | 559 | 1 | 228 | 0 | 0 | 229 | 0 | 792 | 792 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 416 | 4 | 0 | 420 | 1 | 286 | 0 | 0 | 287 | 0 | 710 | 710 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 2000 | 12 | 0 | 2012 | 4 | 1029 | 0 | 0 | 1033 | 0 | 3055 | 3055 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 63 | 0 | 4032 | 72 | 0 | 4104 | 83 | 2072 | 0 | 0 | 2155 | 0 | 6322 | 6322 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 100 | | | 0 | 98.2 | 1.8 | | | 3.9 | 96.1 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 1 | | 1 | 0 | 63.8 | 1.1 | | 64.9 | 1.3 | 32.8 | 0 | | 34.1 | 0 | 100 | |
| Unshifted | 0 | 0 | 0 | | 0 | 0 | 0 | 54 | | 54 | 0 | 3971 | 72 | | 4043 | 78 | 2033 | 0 | | 2111 | 0 | 0 | 6208 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85.7 | 0 | 85.7 | 0 | 98.5 | 100 | 0 | 98.5 | 94 | 98.1 | 0 | 0 | 98 | 0 | 0 | 98.2 |
| HV | 0 | 0 | 0 | | 0 | 0 | 0 | 9 | | 9 | 0 | 61 | 0 | | 61 | 5 | 39 | 0 | | 44 | 0 | 0 | 114 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14.3 | 0 | 14.3 | 0 | 1.5 | 0 | 0 | 1.5 | 6 | 1.9 | 0 | 0 | 2 | 0 | 0 | 1.8 |

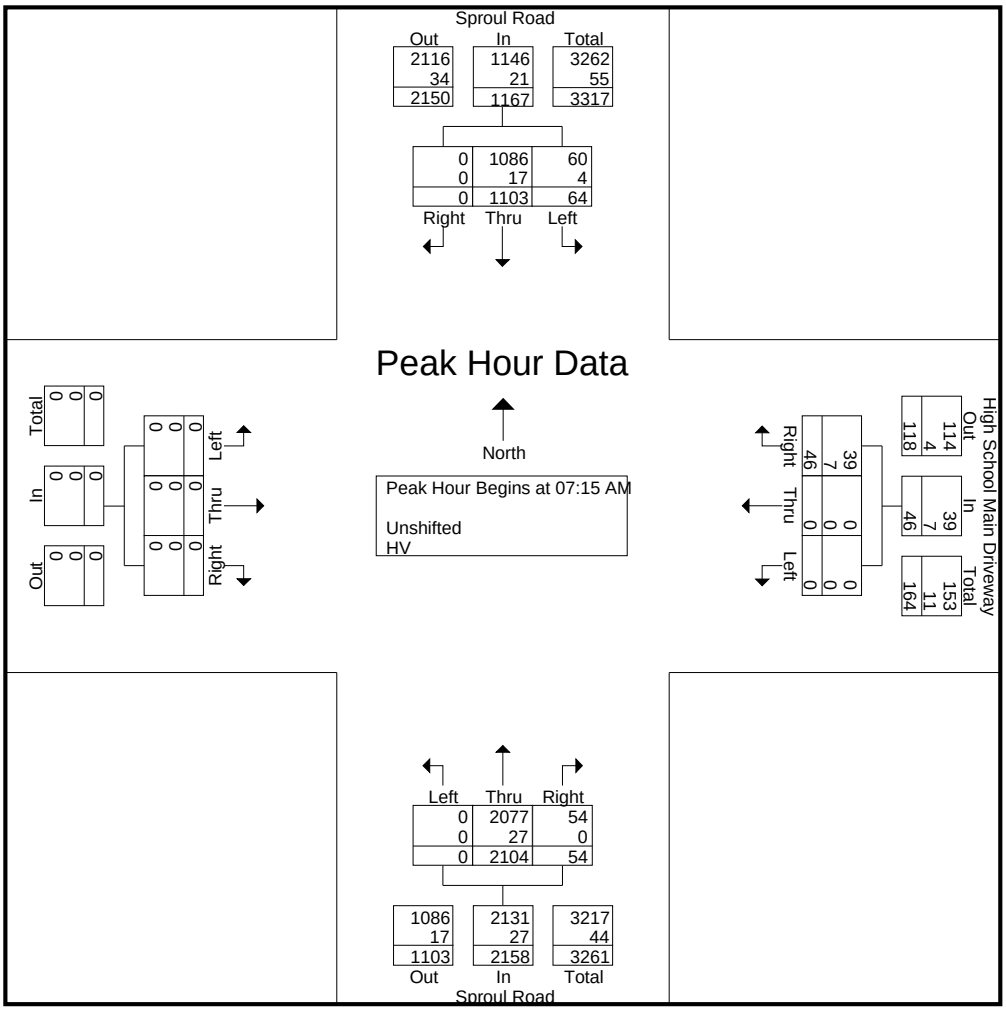


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eastbound | | | | High School Main Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 478 | 13 | 491 | 20 | 270 | 0 | 290 | 791 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | **24** | **24** | 0 | 552 | **37** | **589** | **36** | **286** | 0 | **322** | **935** |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0 | **574** | 3 | 577 | 7 | 283 | 0 | 290 | 878 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 500 | 1 | 501 | 1 | 264 | 0 | 265 | 767 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 46 | 0 | 2104 | 54 | 2158 | 64 | 1103 | 0 | 1167 | 3371 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 97.5 | 2.5 | | 5.5 | 94.5 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .479 | .479 | .000 | .916 | .365 | .916 | .444 | .964 | .000 | .906 | .901 |
| Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 39 | 0 | 2077 | 54 | 2131 | 60 | 1086 | 0 | 1146 | 3316 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 84.8 | 84.8 | 0 | 98.7 | 100 | 98.7 | 93.8 | 98.5 | 0 | 98.2 | 98.4 |
| HV | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 27 | 0 | 27 | 4 | 17 | 0 | 21 | 55 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 15.2 | 15.2 | 0 | 1.3 | 0 | 1.3 | 6.3 | 1.5 | 0 | 1.8 | 1.6 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

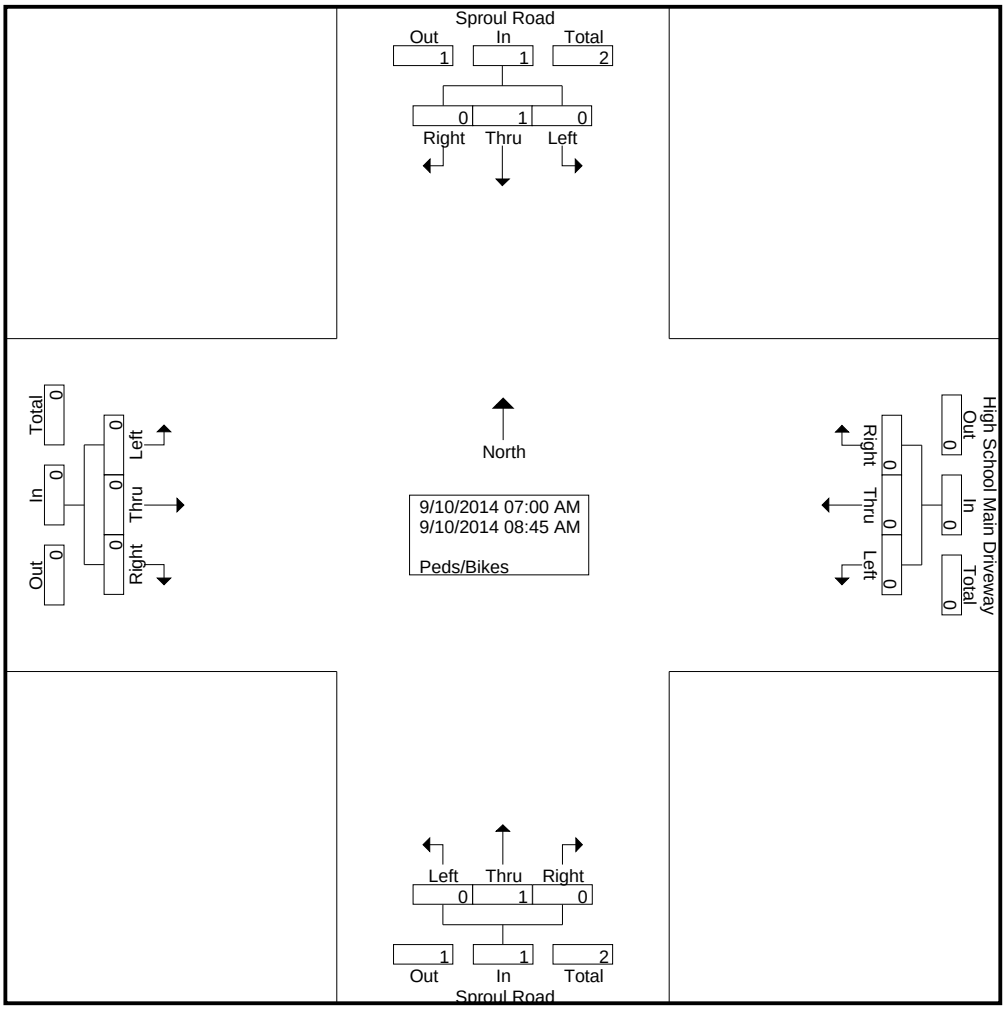
# Sproul Road & High School Driveway
# Marple Township, Delaware County

Counter: 26
Counted by: MDao
Weather: Clear

File Name : 2014-09-10 AM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eastbound | | | | | High School Main Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 100 | 0 | | | 0 | 100 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 50 | 0 | | 50 | 0 | 50 | 0 | | 50 | 0 | 100 | |

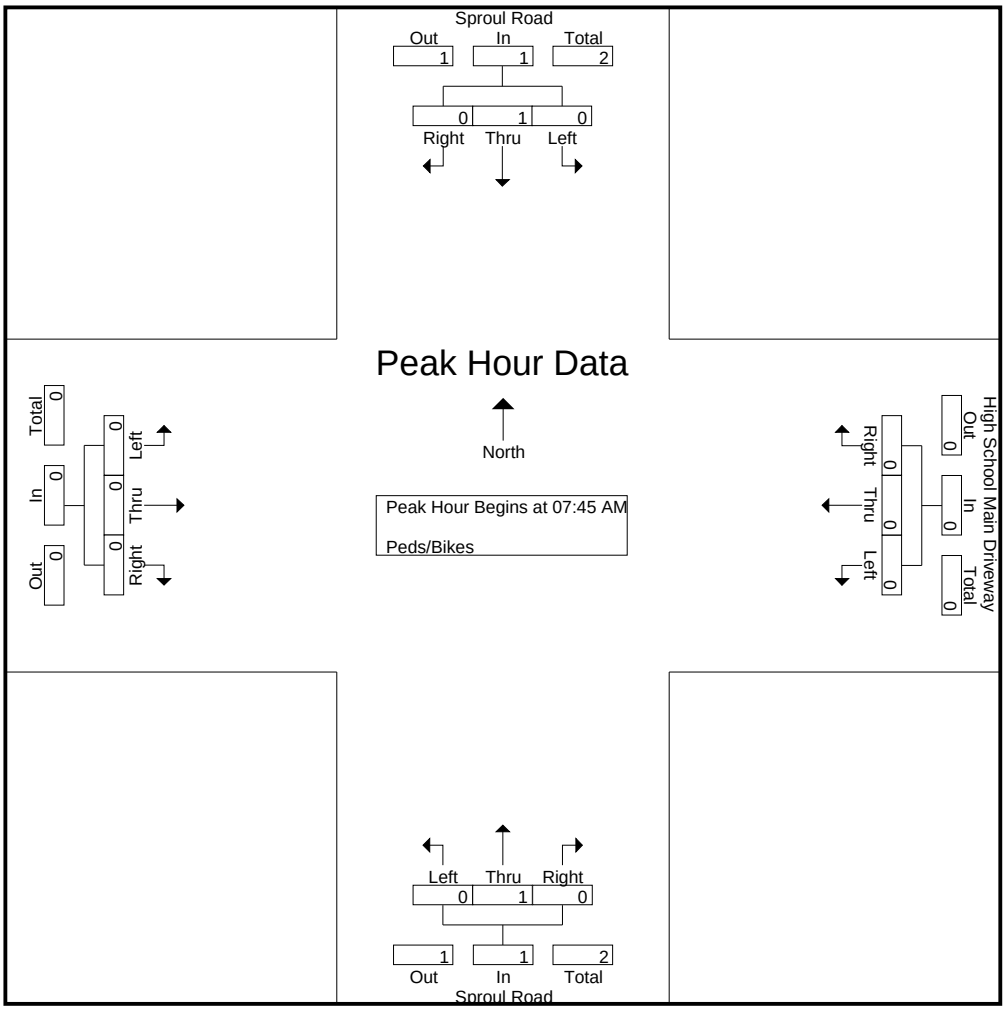


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eastbound | | | | High School Main Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 0 | **1** | 0 | 0 | 0 | 0 | **1** |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 0 | **1** | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .250 | .000 | .250 | .500 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

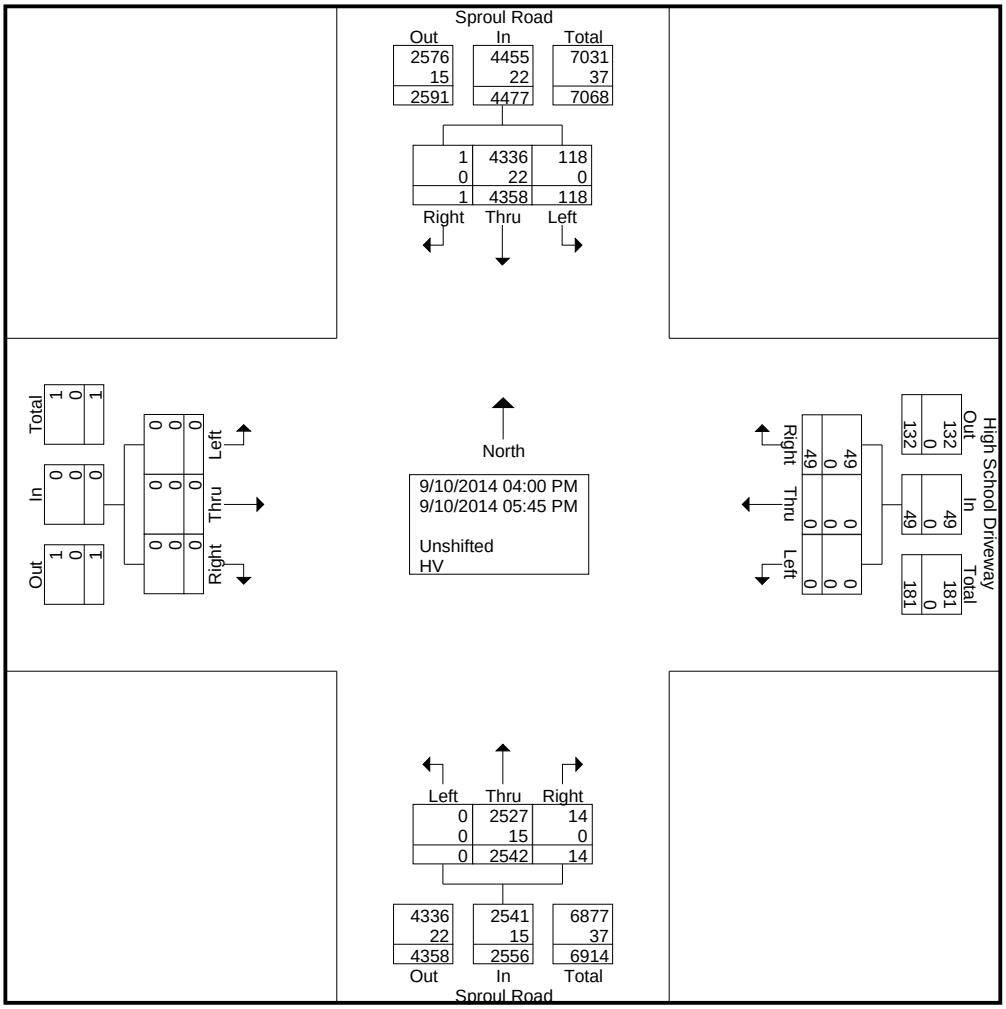
# Sproul Road & High School Driveway
# Marple Township, Delaware County

Counter: 26
Counted by: MDao
Weather: Clear

File Name : 2014-09-10 PM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eastbound | | | | | High School Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 326 | 3 | 0 | 329 | 6 | 494 | 0 | 0 | 500 | 0 | 836 | 836 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 306 | 1 | 0 | 307 | 11 | 555 | 0 | 0 | 566 | 0 | 880 | 880 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 293 | 0 | 0 | 293 | 17 | 557 | 0 | 0 | 574 | 0 | 870 | 870 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 315 | 2 | 0 | 317 | 12 | 593 | 1 | 0 | 606 | 0 | 930 | 930 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0 | 1240 | 6 | 0 | 1246 | 46 | 2199 | 1 | 0 | 2246 | 0 | 3516 | 3516 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 308 | 0 | 0 | 308 | 10 | 554 | 0 | 0 | 564 | 0 | 879 | 879 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 320 | 0 | 0 | 320 | 27 | 562 | 0 | 0 | 589 | 0 | 911 | 911 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 347 | 1 | 0 | 348 | 21 | 526 | 0 | 0 | 547 | 0 | 904 | 904 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 327 | 7 | 0 | 334 | 14 | 517 | 0 | 0 | 531 | 0 | 872 | 872 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 1302 | 8 | 0 | 1310 | 72 | 2159 | 0 | 0 | 2231 | 0 | 3566 | 3566 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 49 | 0 | 2542 | 14 | 0 | 2556 | 118 | 4358 | 1 | 0 | 4477 | 0 | 7082 | 7082 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 100 | | | 0 | 99.5 | 0.5 | | | 2.6 | 97.3 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 0.7 | | 0.7 | 0 | 35.9 | 0.2 | | 36.1 | 1.7 | 61.5 | 0 | | 63.2 | 0 | 100 | |
| Unshifted | 0 | 0 | 0 | | 0 | 0 | 0 | 49 | | 49 | 0 | 2527 | 14 | | 2541 | 118 | 4336 | 1 | | 4455 | 0 | 0 | 7045 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 99.4 | 100 | 0 | 99.4 | 100 | 99.5 | 100 | 0 | 99.5 | 0 | 0 | 99.5 |
| HV | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 15 | 0 | | 15 | 0 | 22 | 0 | | 22 | 0 | 0 | 37 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0.6 | 0 | 0.5 | 0 | 0 | 0.5 | 0 | 0 | 0.5 |

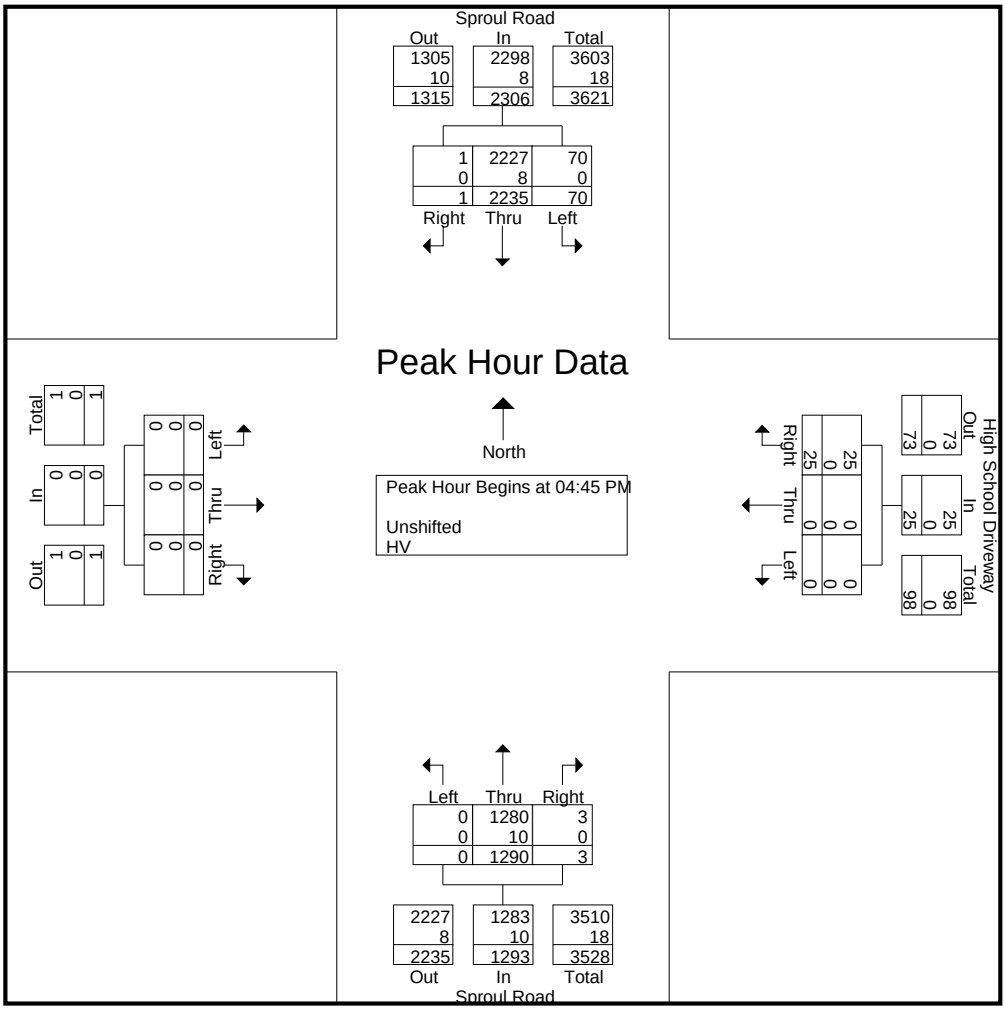


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eastbound | | | | High School Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 315 | **2** | 317 | 12 | **593** | **1** | **606** | **930** |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 308 | 0 | 308 | 10 | 554 | 0 | 564 | 879 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 320 | 0 | 320 | **27** | 562 | 0 | 589 | 911 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | **9** | **9** | 0 | **347** | 1 | **348** | 21 | 526 | 0 | 547 | 904 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 0 | 1290 | 3 | 1293 | 70 | 2235 | 1 | 2306 | 3624 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 99.8 | 0.2 | | 3 | 96.9 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .694 | .694 | .000 | .929 | .375 | .929 | .648 | .942 | .250 | .951 | .974 |
| Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 0 | 1280 | 3 | 1283 | 70 | 2227 | 1 | 2298 | 3606 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 99.2 | 100 | 99.2 | 100 | 99.6 | 100 | 99.7 | 99.5 |
| HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 8 | 0 | 8 | 18 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0.8 | 0 | 0.4 | 0 | 0.3 | 0.5 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

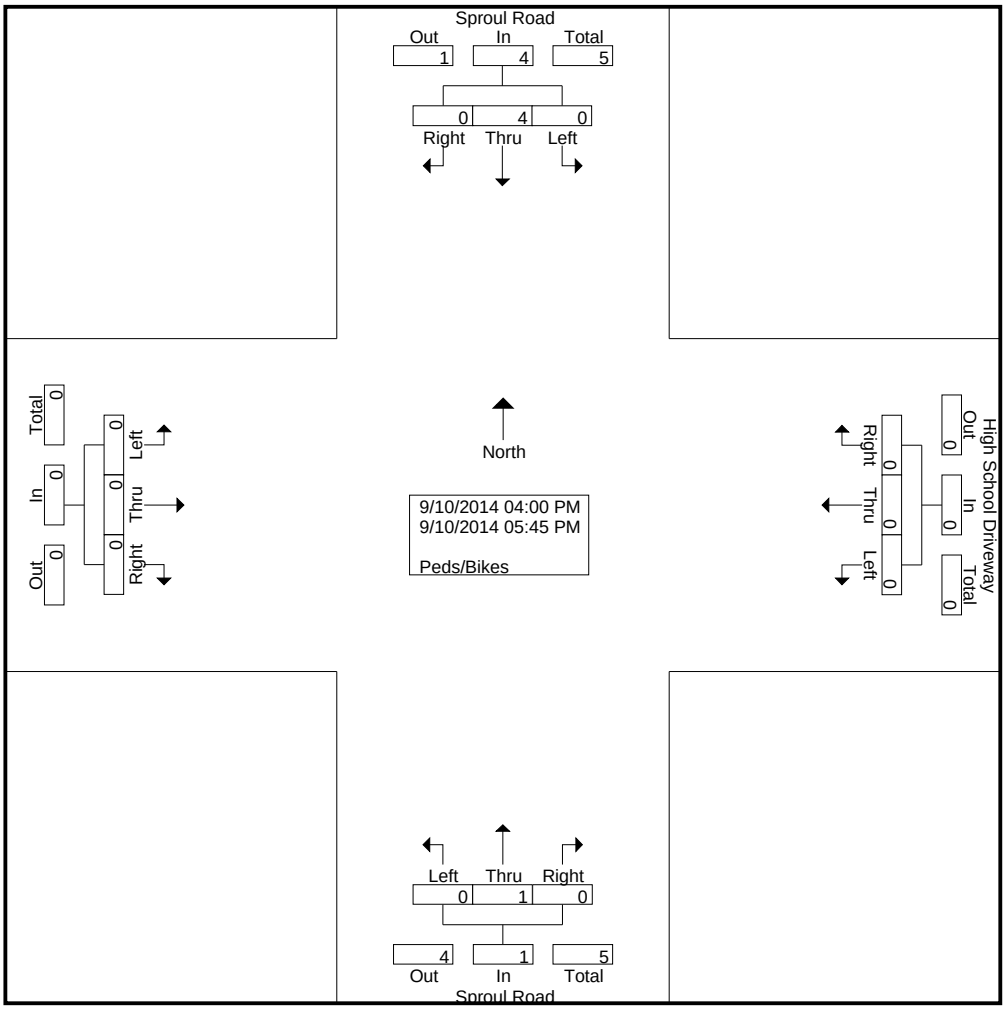
# Sproul Road & High School Driveway
# Marple Township, Delaware County

Counter: 26
Counted by: MDao
Weather: Clear

File Name : 2014-09-10 PM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eastbound | | | | | High School Driveway Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 2 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 4 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 4 | 0 | 5 | 5 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 100 | 0 | | | 0 | 100 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 20 | 0 | | 20 | 0 | 80 | 0 | | 80 | 0 | 100 | |

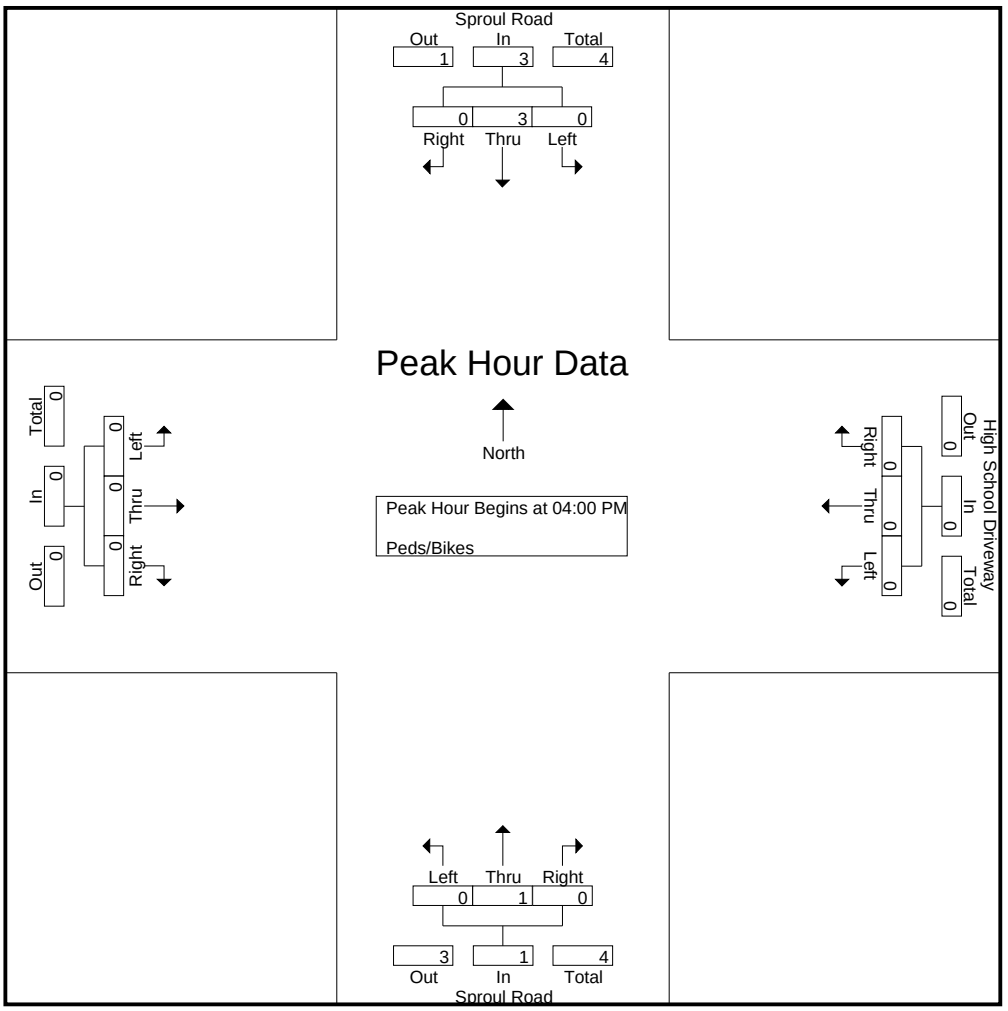


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Sproul High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eastbound | | | | High School Driveway Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** | 0 | **2** | **2** |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 0 | **1** | 0 | 1 | 0 | 1 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 | 4 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .375 | .000 | .375 | .500 |



**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

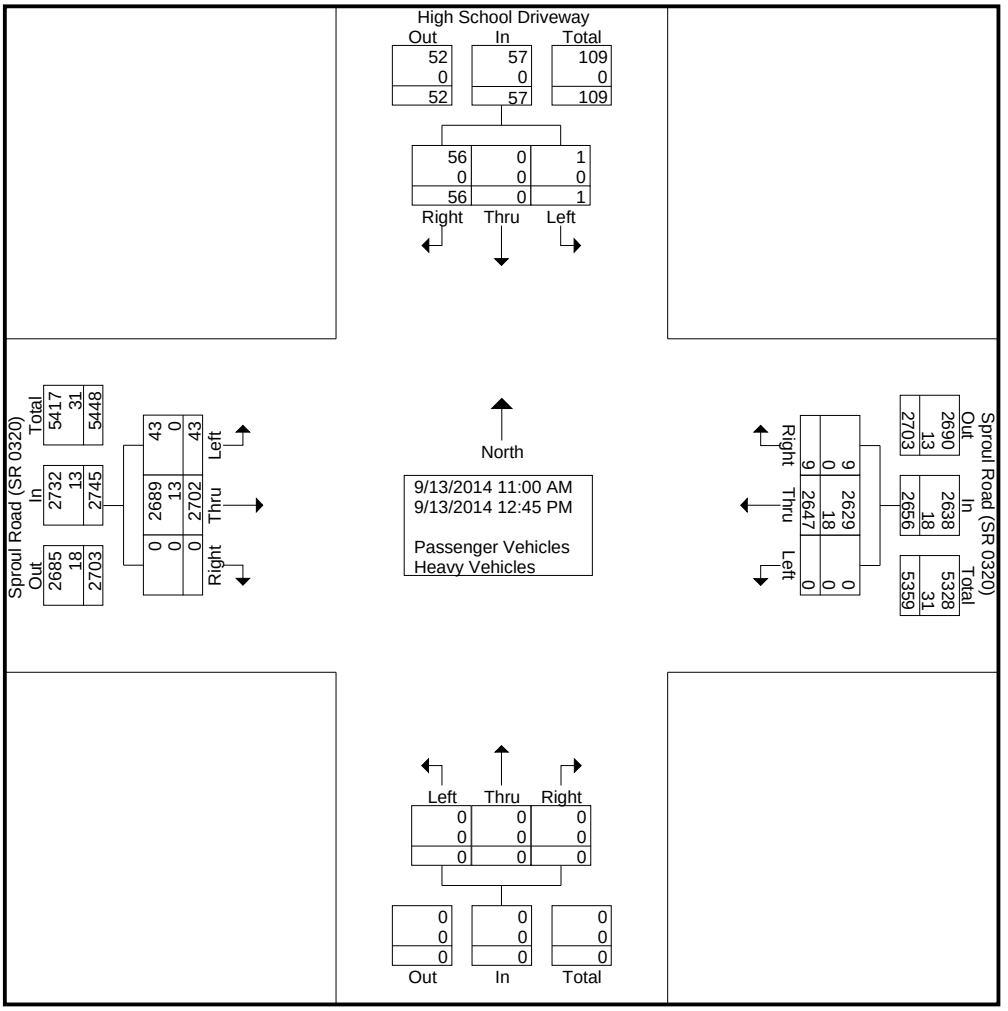
# Sproul Road (SR 0320) and High School Driveway

Counter: 6
Counted by: CJ
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320HS
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Passenger Vehicles - Heavy Vehicles**

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 11:00 AM | 4 | 293 | 0 | 297 | 0 | 277 | 0 | 277 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 576 |
| 11:15 AM | 4 | 285 | 0 | 289 | 0 | 358 | 1 | 359 | 0 | 0 | 0 | 0 | 1 | 0 | 20 | 21 | 669 |
| 11:30 AM | 4 | 312 | 0 | 316 | 0 | 322 | 3 | 325 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 644 |
| 11:45 AM | 7 | 354 | 0 | 361 | 0 | 303 | 0 | 303 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 670 |
| Total | 19 | 1244 | 0 | 1263 | 0 | 1260 | 4 | 1264 | 0 | 0 | 0 | 0 | 1 | 0 | 31 | 32 | 2559 |
| 12:00 PM | 2 | 333 | 0 | 335 | 0 | 392 | 0 | 392 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 731 |
| 12:15 PM | 3 | 328 | 0 | 331 | 0 | 348 | 3 | 351 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 692 |
| 12:30 PM | 9 | 385 | 0 | 394 | 0 | 332 | 1 | 333 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 734 |
| 12:45 PM | 10 | 412 | 0 | 422 | 0 | 315 | 1 | 316 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 742 |
| Total | 24 | 1458 | 0 | 1482 | 0 | 1387 | 5 | 1392 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 2899 |
| Grand Total | 43 | 2702 | 0 | 2745 | 0 | 2647 | 9 | 2656 | 0 | 0 | 0 | 0 | 1 | 0 | 56 | 57 | 5458 |
| Apprch % | 1.6 | 98.4 | 0 | | 0 | 99.7 | 0.3 | | 0 | 0 | 0 | | 1.8 | 0 | 98.2 | | |
| Total % | 0.8 | 49.5 | 0 | 50.3 | 0 | 48.5 | 0.2 | 48.7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| Passenger Vehicles | 43 | 2689 | 0 | 2732 | 0 | 2629 | 9 | 2638 | 0 | 0 | 0 | 0 | 1 | 0 | 56 | 57 | 5427 |
| % Passenger Vehicles | 100 | 99.5 | 0 | 99.5 | 0 | 99.3 | 100 | 99.3 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 100 | 99.4 |
| Heavy Vehicles | 0 | 13 | 0 | 13 | 0 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| % Heavy Vehicles | 0 | 0.5 | 0 | 0.5 | 0 | 0.7 | 0 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |



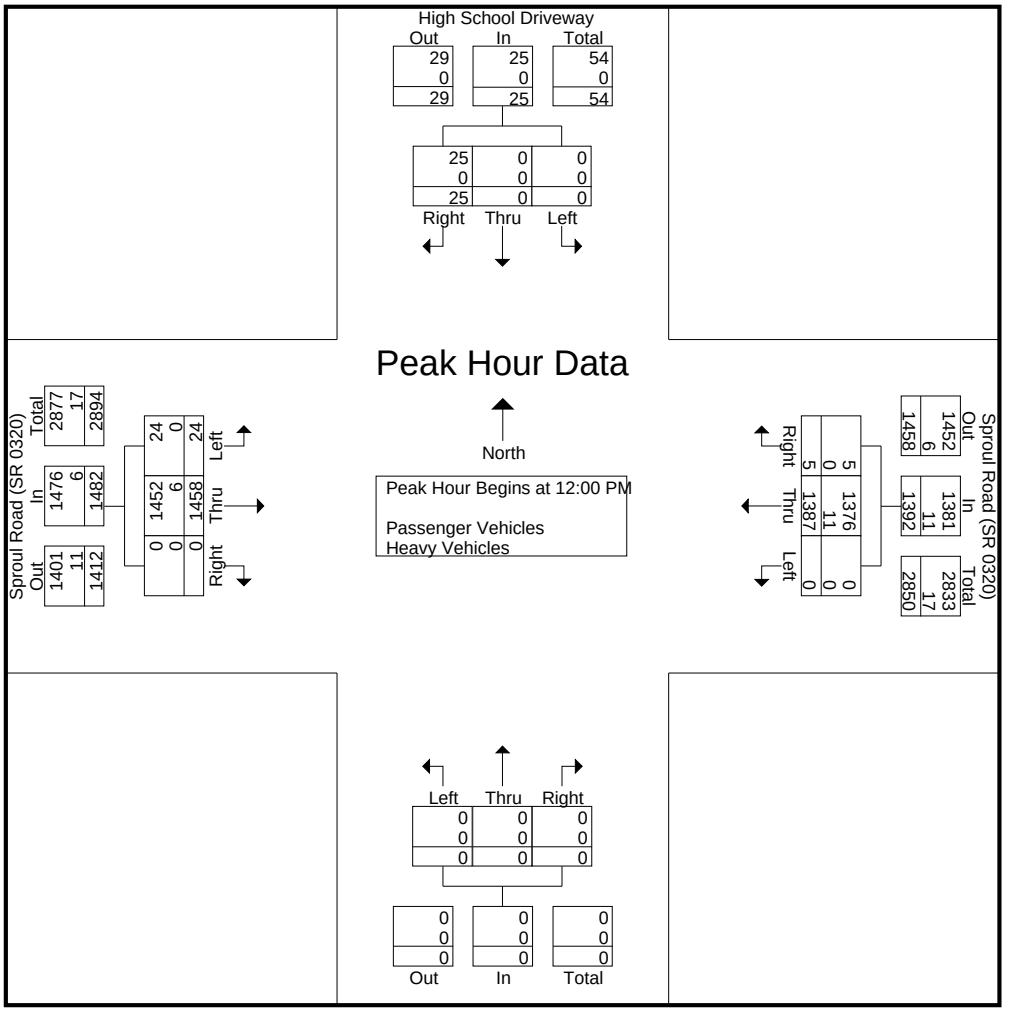
**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

# Sproul Road (SR 0320) and High School Driveway

Counter: 6
Counted by: CJ
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320HS
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 2 | 333 | 0 | 335 | 0 | 392 | 0 | 392 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 731 |
| 12:15 PM | 3 | 328 | 0 | 331 | 0 | 348 | 3 | 351 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 692 |
| 12:30 PM | 9 | 385 | 0 | 394 | 0 | 332 | 1 | 333 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 734 |
| 12:45 PM | 10 | 412 | 0 | 422 | 0 | 315 | 1 | 316 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 742 |
| Total Volume | 24 | 1458 | 0 | 1482 | 0 | 1387 | 5 | 1392 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 2899 |
| % App. Total | 1.6 | 98.4 | 0 | | 0 | 99.6 | 0.4 | | 0 | 0 | 0 | | 0 | 0 | 100 | | |
| PHF | .600 | .885 | .000 | .878 | .000 | .885 | .417 | .888 | .000 | .000 | .000 | .000 | .000 | .000 | .625 | .625 | .977 |
| Passenger Vehicles | 24 | 1452 | 0 | 1476 | 0 | 1376 | 5 | 1381 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 2882 |
| % Passenger Vehicles | 100 | 99.6 | 0 | 99.6 | 0 | 99.2 | 100 | 99.2 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 99.4 |
| Heavy Vehicles | 0 | 6 | 0 | 6 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| % Heavy Vehicles | 0 | 0.4 | 0 | 0.4 | 0 | 0.8 | 0 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |



**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

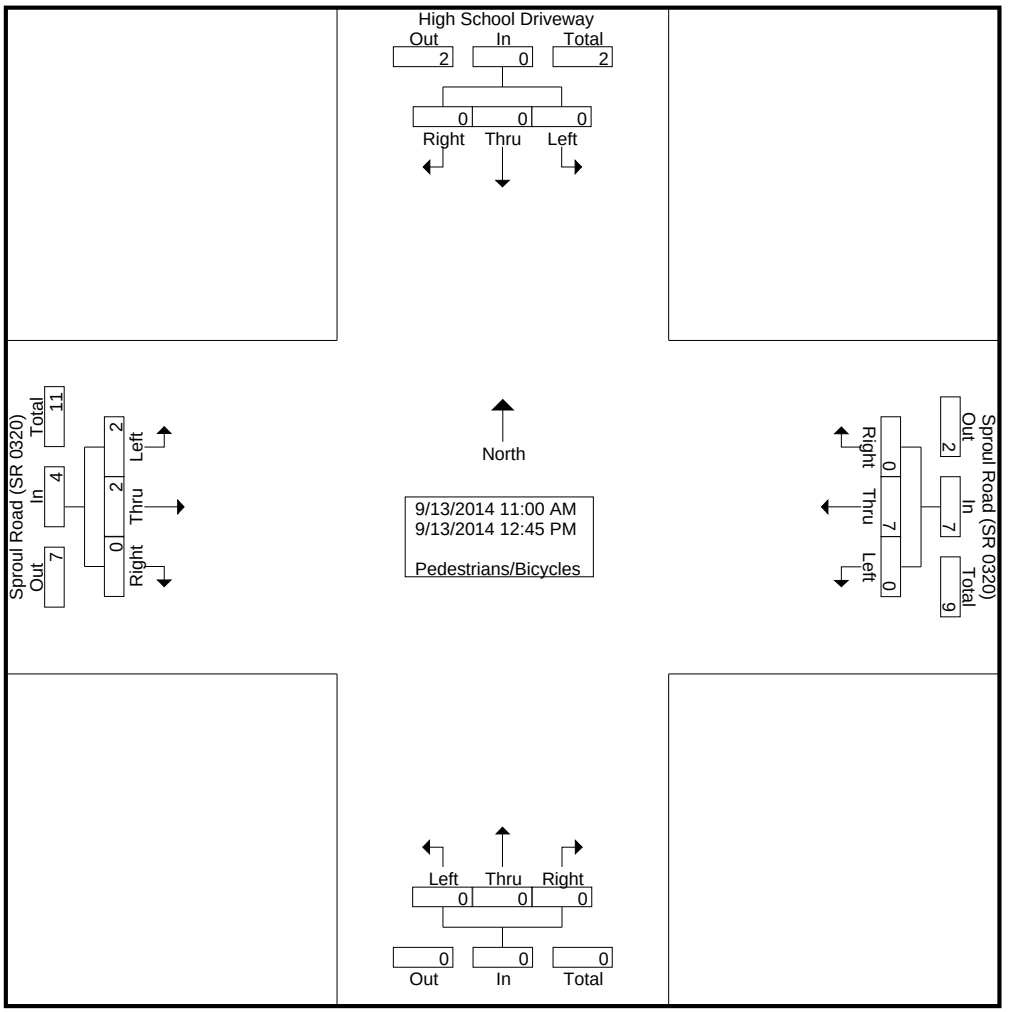
# Sproul Road (SR 0320) and High School Driveway

Counter: 6
Counted by: CJ
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320HS
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Pedestrians/Bicycles**

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 11:00 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 11:45 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 2 | 1 | 0 | 3 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | 2 | 2 | 0 | 4 | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Apprch % | 50 | 50 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Total % | 18.2 | 18.2 | 0 | 36.4 | 0 | 63.6 | 0 | 63.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |



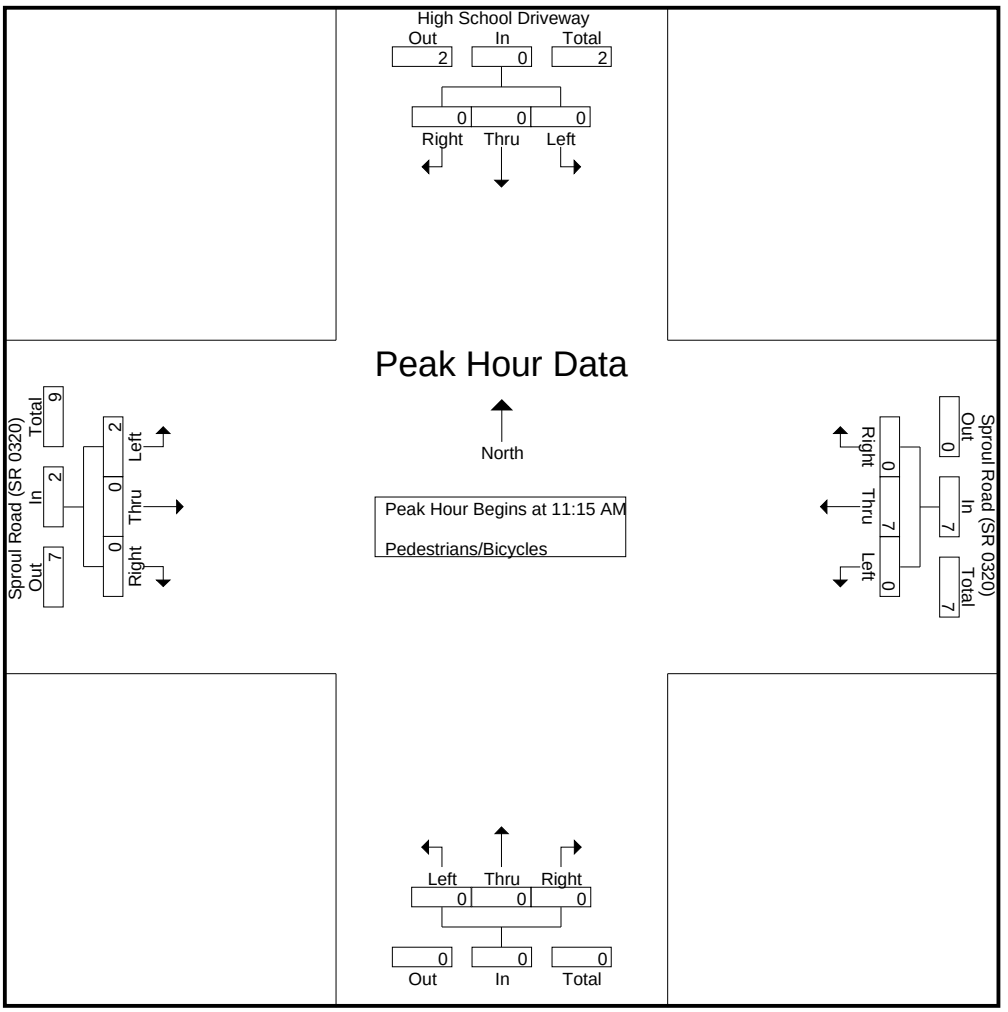
**Traffic Planning and Design, Inc.**
2 Riverside Drive, Suite 506
Camden, New Jersey 08103

# Sproul Road (SR 0320) and High School Driveway

Counter: 6
Counted by: CJ
Weather: Overcast/Rain

File Name : 2014-09-13 SAT320HS
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Sproul Road (SR 0320) Eastbound | | | | Sproul Road (SR 0320) Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 11:45 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 2 | 0 | 0 | 2 | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| % App. Total | 100 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .500 | .000 | .000 | .500 | .000 | .350 | .000 | .350 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .375 |



## *SPROUL ROAD & SPRINGFIELD ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Spring/H.School
Date: Thursday, April 10, 2014
Counter: MIO

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 1

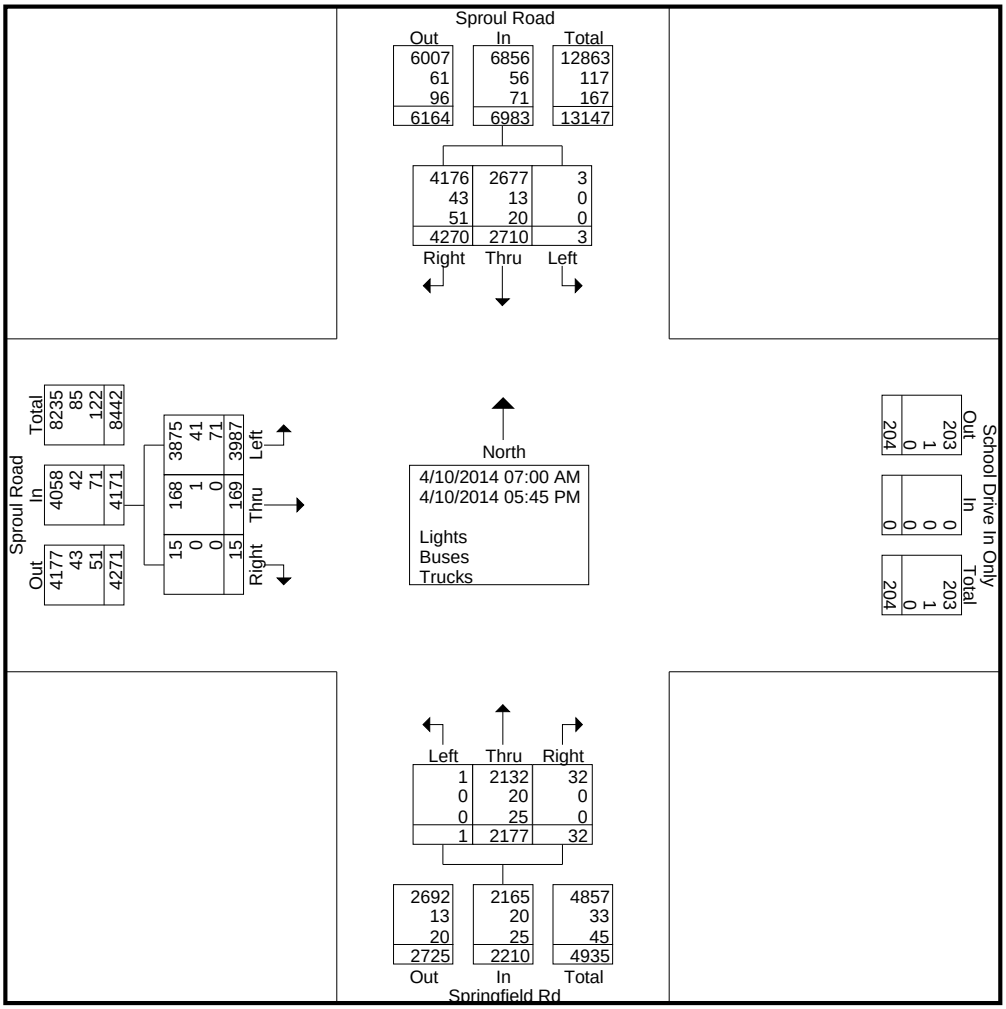
Groups Printed- Lights - Buses - Trucks

| | Sproul Road Eastbound | | | | | School Drive In Only Westbound | | Springfield Rd Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 229 | 5 | 0 | 0 | 234 | 0 | 0 | 0 | 154 | 1 | 0 | 155 | 0 | 65 | 141 | 0 | 206 | 0 | 595 | 595 |
| 07:15 AM | 282 | 23 | 0 | 0 | 305 | 0 | 0 | 1 | 176 | 6 | 0 | 183 | 0 | 75 | 160 | 0 | 235 | 0 | 723 | 723 |
| 07:30 AM | 283 | 44 | 0 | 0 | 327 | 0 | 0 | 0 | 200 | 3 | 0 | 203 | 0 | 85 | 178 | 0 | 263 | 0 | 793 | 793 |
| 07:45 AM | 295 | 3 | 0 | 0 | 298 | 0 | 0 | 0 | 210 | 2 | 0 | 212 | 0 | 79 | 190 | 0 | 269 | 0 | 779 | 779 |
| Total | 1089 | 75 | 0 | 0 | 1164 | 0 | 0 | 1 | 740 | 12 | 0 | 753 | 0 | 304 | 669 | 0 | 973 | 0 | 2890 | 2890 |
| 08:00 AM | 254 | 1 | 0 | 0 | 255 | 0 | 0 | 0 | 170 | 1 | 0 | 171 | 0 | 62 | 214 | 0 | 276 | 0 | 702 | 702 |
| 08:15 AM | 298 | 0 | 0 | 0 | 298 | 0 | 0 | 0 | 175 | 0 | 0 | 175 | 0 | 74 | 180 | 0 | 254 | 0 | 727 | 727 |
| 08:30 AM | 276 | 0 | 0 | 0 | 276 | 0 | 0 | 0 | 178 | 1 | 0 | 179 | 0 | 91 | 164 | 0 | 255 | 0 | 710 | 710 |
| 08:45 AM | 282 | 2 | 1 | 0 | 285 | 0 | 0 | 0 | 129 | 0 | 0 | 129 | 0 | 75 | 167 | 0 | 242 | 0 | 656 | 656 |
| Total | 1110 | 3 | 1 | 0 | 1114 | 0 | 0 | 0 | 652 | 2 | 0 | 654 | 0 | 302 | 725 | 0 | 1027 | 0 | 2795 | 2795 |
| 04:00 PM | 234 | 17 | 1 | 0 | 252 | 0 | 0 | 0 | 107 | 2 | 0 | 109 | 2 | 165 | 308 | 0 | 475 | 0 | 836 | 836 |
| 04:15 PM | 243 | 9 | 0 | 0 | 252 | 0 | 0 | 0 | 98 | 3 | 0 | 101 | 1 | 160 | 345 | 0 | 506 | 0 | 859 | 859 |
| 04:30 PM | 217 | 12 | 2 | 0 | 231 | 0 | 0 | 0 | 108 | 4 | 0 | 112 | 0 | 178 | 389 | 0 | 567 | 0 | 910 | 910 |
| 04:45 PM | 202 | 9 | 4 | 0 | 215 | 0 | 0 | 0 | 79 | 1 | 0 | 80 | 0 | 171 | 346 | 0 | 517 | 0 | 812 | 812 |
| Total | 896 | 47 | 7 | 0 | 950 | 0 | 0 | 0 | 392 | 10 | 0 | 402 | 3 | 674 | 1388 | 0 | 2065 | 0 | 3417 | 3417 |
| 05:00 PM | 238 | 13 | 3 | 0 | 254 | 0 | 0 | 0 | 94 | 3 | 0 | 97 | 0 | 348 | 360 | 0 | 708 | 0 | 1059 | 1059 |
| 05:15 PM | 209 | 10 | 2 | 0 | 221 | 0 | 0 | 0 | 95 | 3 | 0 | 98 | 0 | 361 | 369 | 0 | 730 | 0 | 1049 | 1049 |
| 05:30 PM | 219 | 8 | 0 | 0 | 227 | 0 | 0 | 0 | 100 | 0 | 0 | 100 | 0 | 368 | 395 | 0 | 763 | 0 | 1090 | 1090 |
| 05:45 PM | 226 | 13 | 2 | 0 | 241 | 0 | 0 | 0 | 104 | 2 | 0 | 106 | 0 | 353 | 364 | 0 | 717 | 0 | 1064 | 1064 |
| Total | 892 | 44 | 7 | 0 | 943 | 0 | 0 | 0 | 393 | 8 | 0 | 401 | 0 | 1430 | 1488 | 0 | 2918 | 0 | 4262 | 4262 |
| Grand Total | 3987 | 169 | 15 | 0 | 4171 | 0 | 0 | 1 | 2177 | 32 | 0 | 2210 | 3 | 2710 | 4270 | 0 | 6983 | 0 | 13364 | 13364 |
| Lights | 3875 | 168 | 15 | | 4058 | | 0 | 1 | 2132 | 32 | | 2165 | 3 | 2677 | 4176 | | 6856 | 0 | 0 | 13079 |
| % Lights | 97.2 | 99.4 | 100 | 0 | 97.3 | 0 | 0 | 100 | 97.9 | 100 | 0 | 98 | 100 | 98.8 | 97.8 | 0 | 98.2 | 0 | 0 | 97.9 |
| Buses | 41 | 1 | 0 | | 42 | | 0 | 0 | 20 | 0 | | 20 | 0 | 13 | 43 | | 56 | 0 | 0 | 118 |
| % Buses | 1 | 0.6 | 0 | 0 | 1 | 0 | 0 | 0 | 0.9 | 0 | 0 | 0.9 | 0 | 0.5 | 1 | 0 | 0.8 | 0 | 0 | 0.9 |
| Trucks | 71 | 0 | 0 | | 71 | | 0 | 0 | 25 | 0 | | 25 | 0 | 20 | 51 | | 71 | 0 | 0 | 167 |
| % Trucks | 1.8 | 0 | 0 | 0 | 1.7 | 0 | 0 | 0 | 1.1 | 0 | 0 | 1.1 | 0 | 0.7 | 1.2 | 0 | 1 | 0 | 0 | 1.2 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 2

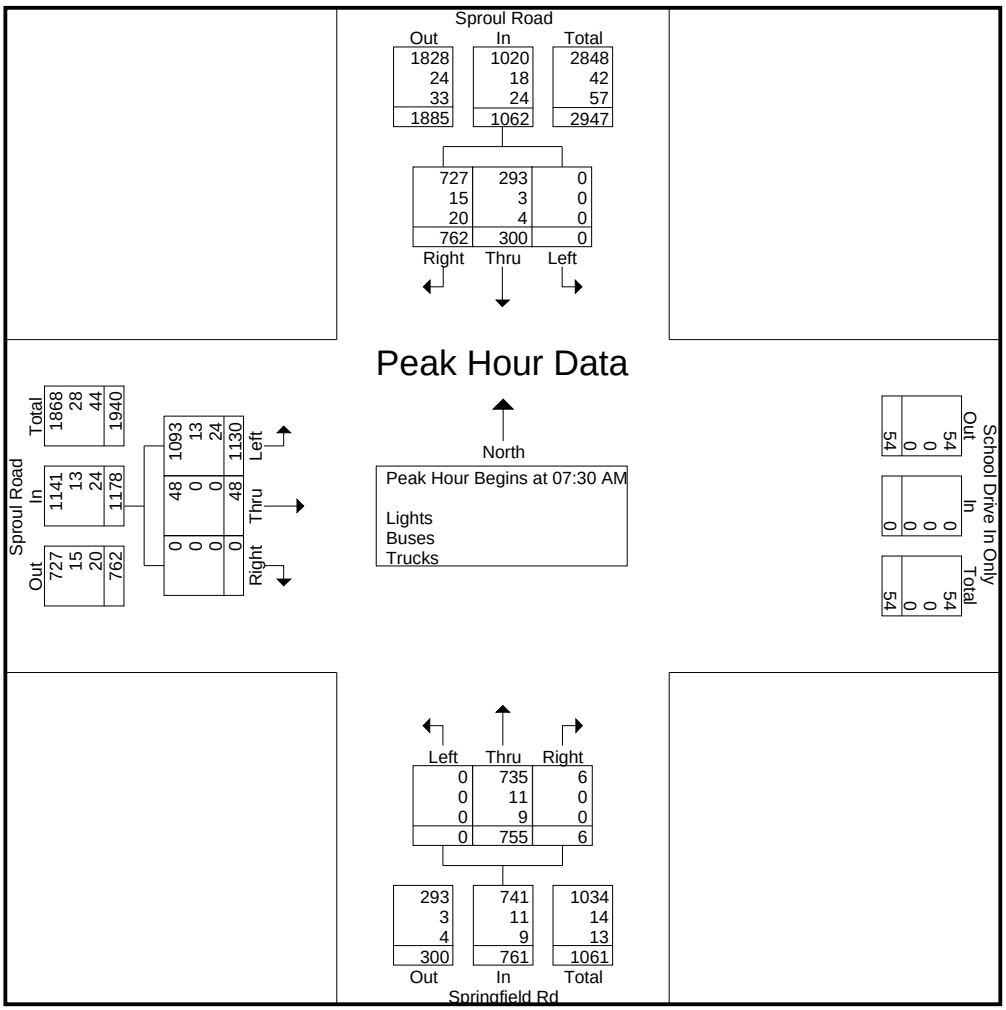


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 3

| | Sproul Road Eastbound | | | | Westbound | Springfield Rd Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | |
| 07:30 AM | 283 | **44** | 0 | **327** | 0 | 0 | 200 | **3** | 203 | 0 | **85** | 178 | 263 | **793** |
| 07:45 AM | 295 | 3 | 0 | 298 | 0 | 0 | **210** | 2 | **212** | 0 | 79 | 190 | 269 | 779 |
| 08:00 AM | 254 | 1 | 0 | 255 | 0 | 0 | 170 | 1 | 171 | 0 | 62 | **214** | **276** | 702 |
| 08:15 AM | **298** | 0 | 0 | 298 | 0 | 0 | 175 | 0 | 175 | 0 | 74 | 180 | 254 | 727 |
| Total Volume | 1130 | 48 | 0 | 1178 | 0 | 0 | 755 | 6 | 761 | 0 | 300 | 762 | 1062 | 3001 |
| % App. Total | 95.9 | 4.1 | 0 | | | 0 | 99.2 | 0.8 | | 0 | 28.2 | 71.8 | | |
| PHF | .948 | .273 | .000 | .901 | .000 | .000 | .899 | .500 | .897 | .000 | .882 | .890 | .962 | .946 |
| Lights | 1093 | 48 | 0 | 1141 | 0 | 0 | 735 | 6 | 741 | 0 | 293 | 727 | 1020 | 2902 |
| % Lights | 96.7 | 100 | 0 | 96.9 | 0 | 0 | 97.4 | 100 | 97.4 | 0 | 97.7 | 95.4 | 96.0 | 96.7 |
| Buses | 13 | 0 | 0 | 13 | 0 | 0 | 11 | 0 | 11 | 0 | 3 | 15 | 18 | 42 |
| % Buses | 1.2 | 0 | 0 | 1.1 | 0 | 0 | 1.5 | 0 | 1.4 | 0 | 1.0 | 2.0 | 1.7 | 1.4 |
| Trucks | 24 | 0 | 0 | 24 | 0 | 0 | 9 | 0 | 9 | 0 | 4 | 20 | 24 | 57 |
| % Trucks | 2.1 | 0 | 0 | 2.0 | 0 | 0 | 1.2 | 0 | 1.2 | 0 | 1.3 | 2.6 | 2.3 | 1.9 |

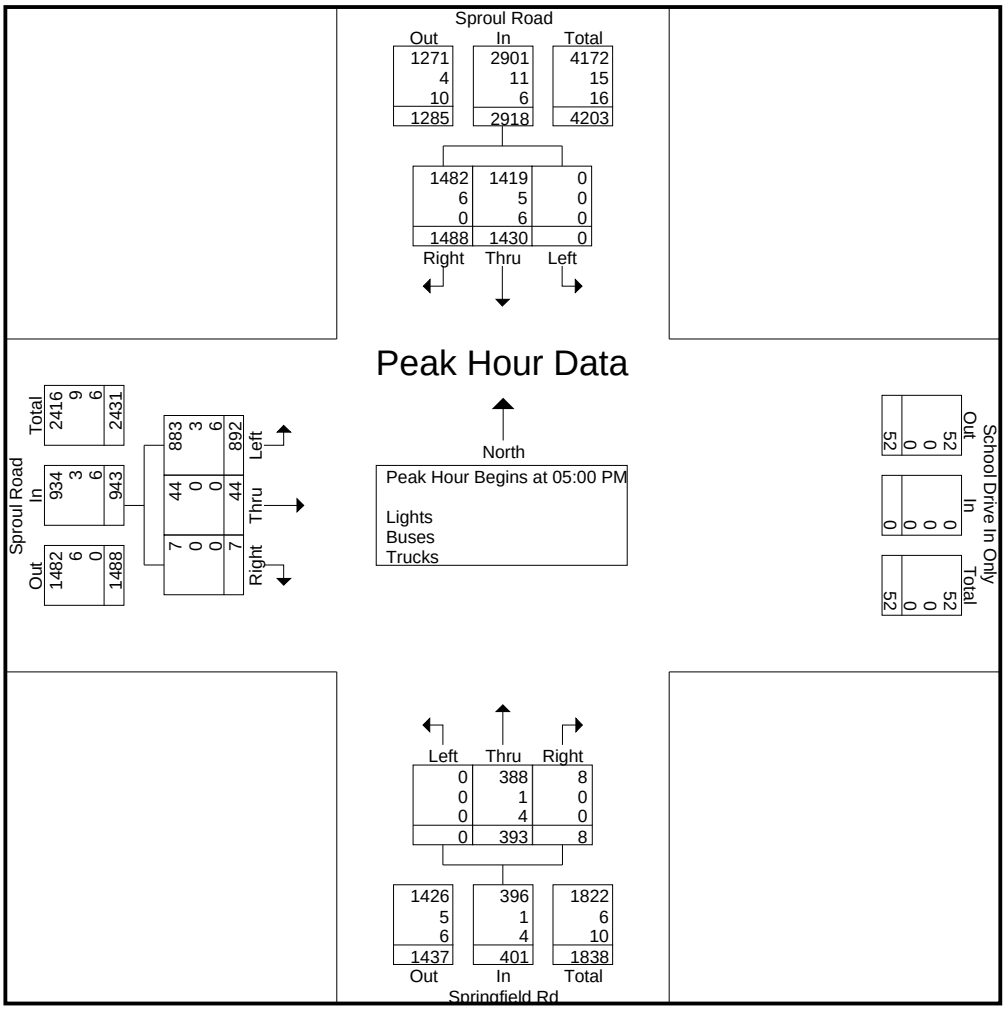


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 4

| | Sproul Road Eastbound | | | | Westbound | Springfield Rd Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | |
| 05:00 PM | **238** | **13** | **3** | **254** | 0 | 0 | 94 | **3** | 97 | 0 | 348 | 360 | 708 | 1059 |
| 05:15 PM | 209 | 10 | 2 | 221 | 0 | 0 | 95 | 3 | 98 | 0 | 361 | 369 | 730 | 1049 |
| 05:30 PM | 219 | 8 | 0 | 227 | 0 | 0 | 100 | 0 | 100 | 0 | **368** | **395** | **763** | **1090** |
| 05:45 PM | 226 | 13 | 2 | 241 | 0 | 0 | **104** | 2 | **106** | 0 | 353 | 364 | 717 | 1064 |
| Total Volume | 892 | 44 | 7 | 943 | 0 | 0 | 393 | 8 | 401 | 0 | 1430 | 1488 | 2918 | 4262 |
| % App. Total | 94.6 | 4.7 | 0.7 | | | 0 | 98 | 2 | | 0 | 49 | 51 | | |
| PHF | .937 | .846 | .583 | .928 | .000 | .000 | .945 | .667 | .946 | .000 | .971 | .942 | .956 | .978 |
| Lights | 883 | 44 | 7 | 934 | 0 | 0 | 388 | 8 | 396 | 0 | 1419 | 1482 | 2901 | 4231 |
| % Lights | 99.0 | 100 | 100 | 99.0 | 0 | 0 | 98.7 | 100 | 98.8 | 0 | 99.2 | 99.6 | 99.4 | 99.3 |
| Buses | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 6 | 11 | 15 |
| % Buses | 0.3 | 0 | 0 | 0.3 | 0 | 0 | 0.3 | 0 | 0.2 | 0 | 0.3 | 0.4 | 0.4 | 0.4 |
| Trucks | 6 | 0 | 0 | 6 | 0 | 0 | 4 | 0 | 4 | 0 | 6 | 0 | 6 | 16 |
| % Trucks | 0.7 | 0 | 0 | 0.6 | 0 | 0 | 1.0 | 0 | 1.0 | 0 | 0.4 | 0 | 0.2 | 0.4 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Spring/H.School
Date: Thursday, April 10, 2014
Counter: MIO

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Sproul Road Eastbound | | | | | School Drive In Only Westbound | | Springfield Rd Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

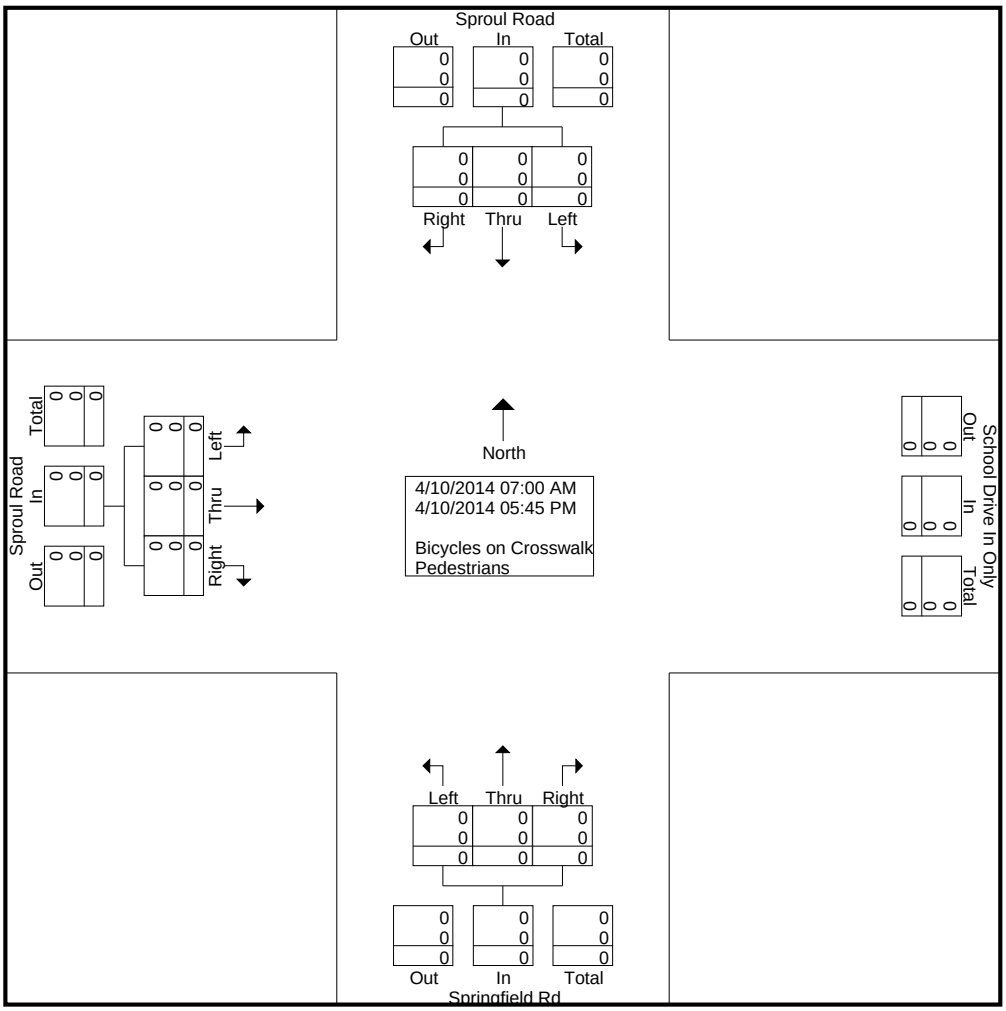
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 2

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Sproul Road Eastbound | | | | | School Drive In Only Westbound | | Springfield Rd Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| Apprch % | 0 | 0 | 0 | | | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | | | | | | | | | | | | | | | | | 0 | 0 | 7 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

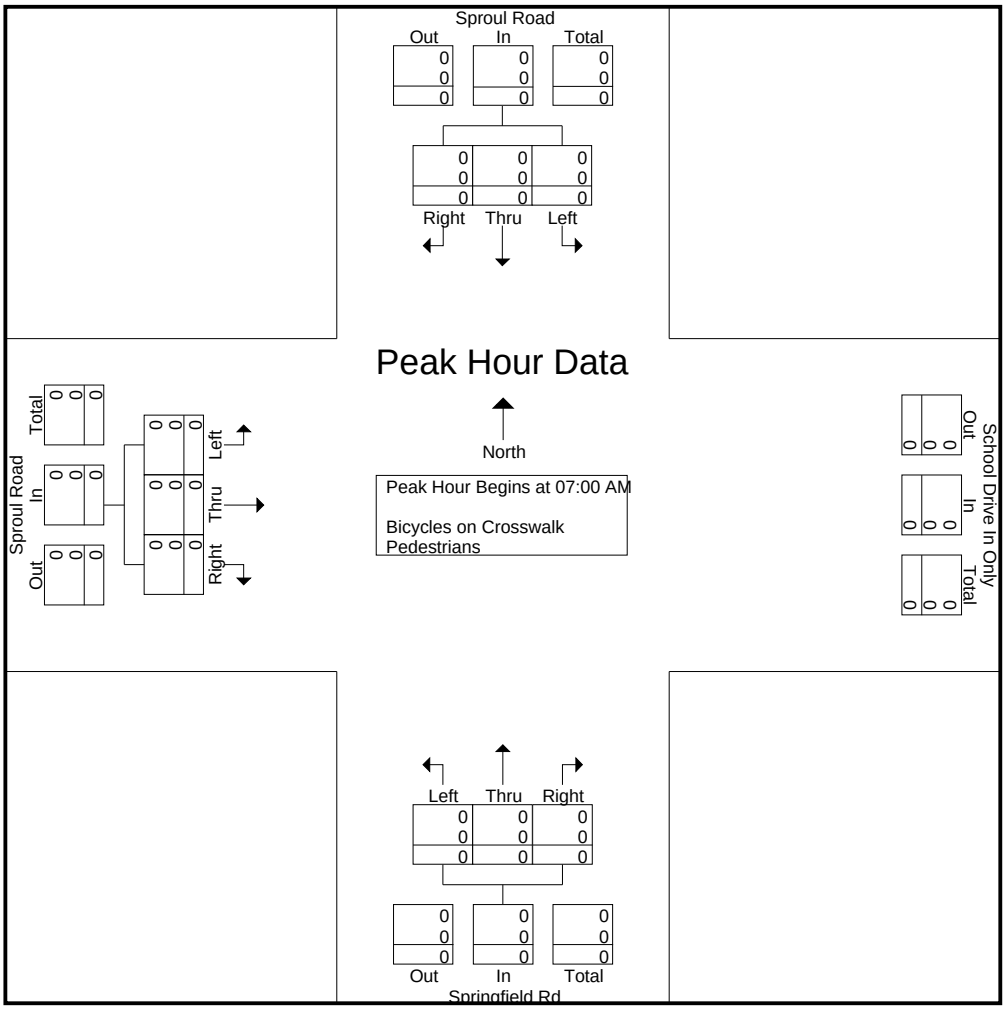


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 3

| | Sproul Road Eastbound | | | | Westbound | Springfield Rd Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

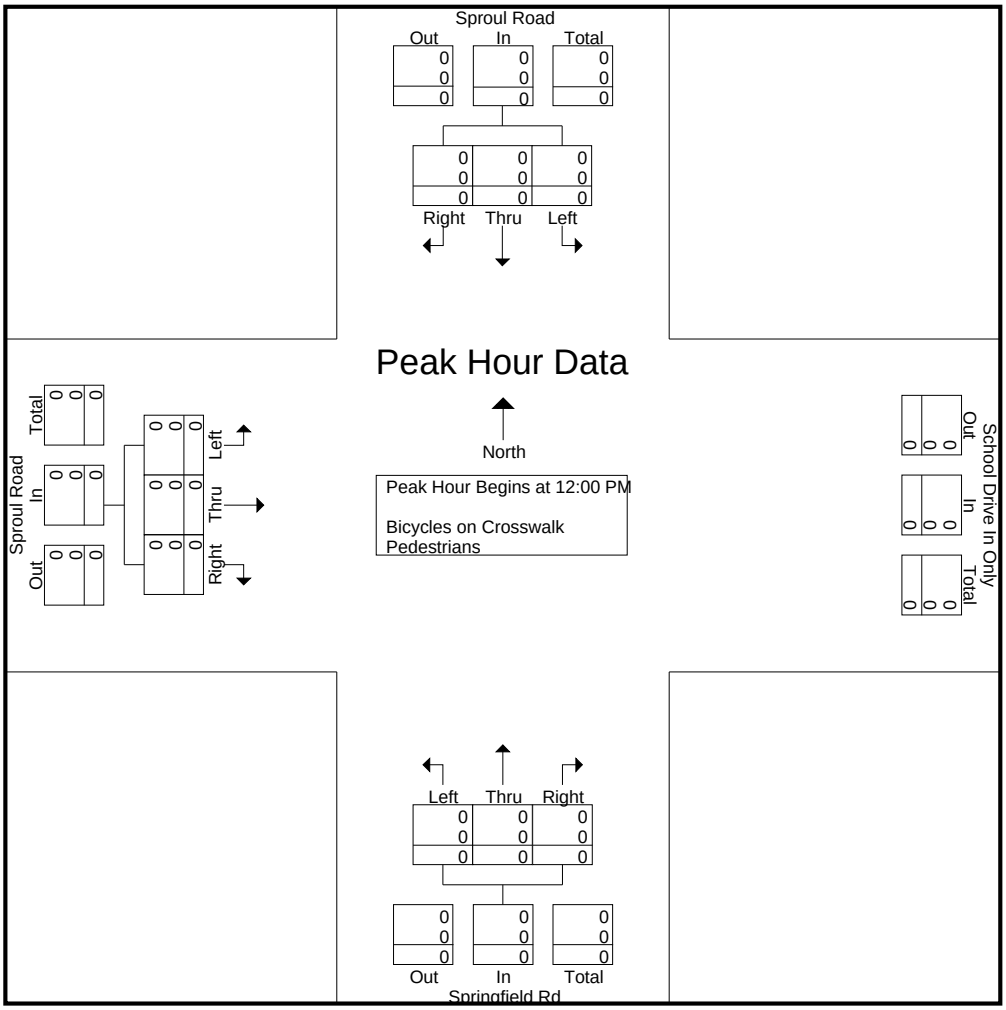


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Road
# Marple Township, Delaware County

File Name : 11_MS 0410 10_Sproul & Springfield
Site Code : 10
Start Date : 4/10/2014
Page No : 4

| | Sproul Road Eastbound | | | | Westbound | Springfield Rd Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

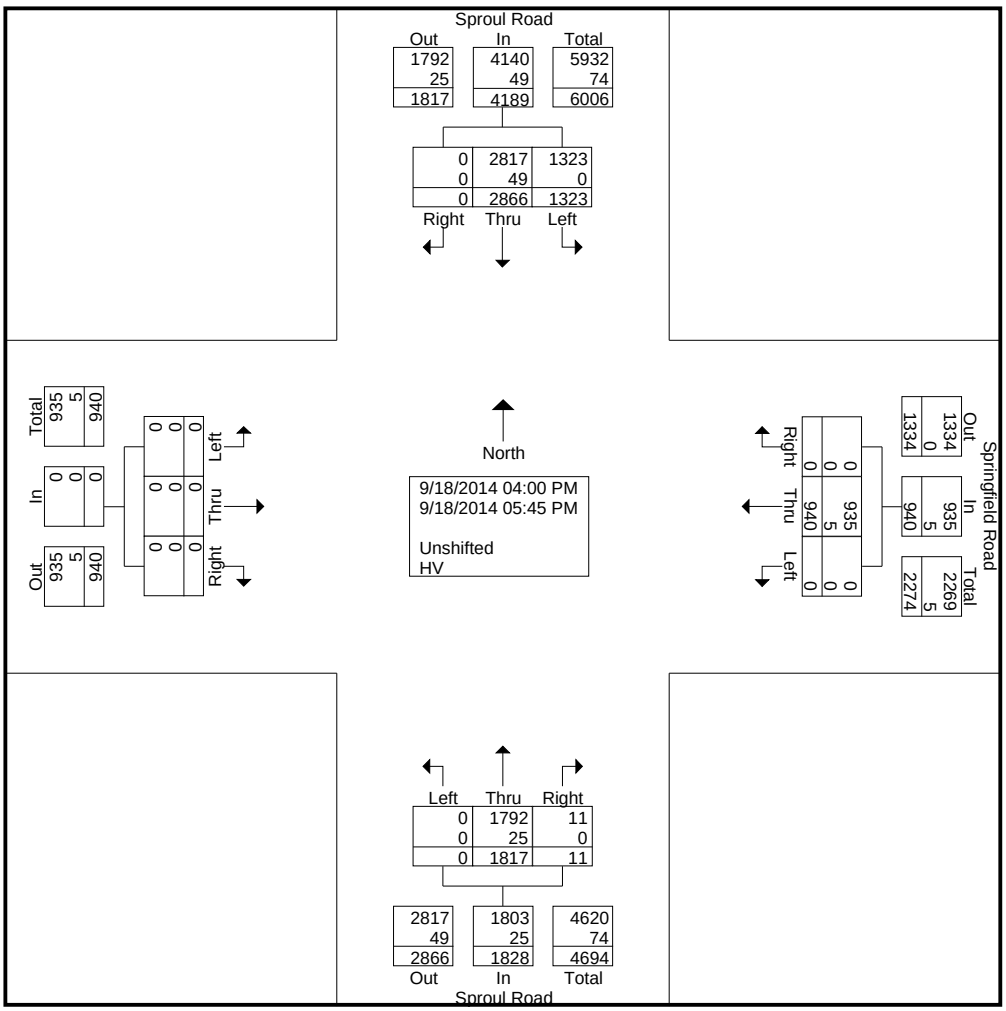
# Sproul Road & Springfield Ropad
# Marple Township, Delaware County

Counter: 18
Counted by: M.Rolli
Weather: Clear

File Name : 2014-09-18 PM Sproul Springfield
Site Code : 00000000
Start Date : 9/18/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eastbound | | | | | Springfield Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 0 | 0 | 98 | 0 | 208 | 1 | 0 | 209 | 163 | 362 | 0 | 1 | 525 | 1 | 832 | 833 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 118 | 0 | 252 | 2 | 0 | 254 | 162 | 355 | 0 | 0 | 517 | 0 | 889 | 889 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 120 | 0 | 240 | 2 | 0 | 242 | 166 | 359 | 0 | 0 | 525 | 0 | 887 | 887 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 122 | 0 | 0 | 122 | 0 | 226 | 1 | 0 | 227 | 168 | 365 | 0 | 0 | 533 | 0 | 882 | 882 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 458 | 0 | 0 | 458 | 0 | 926 | 6 | 0 | 932 | 659 | 1441 | 0 | 1 | 2100 | 1 | 3490 | 3491 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 112 | 0 | 228 | 1 | 0 | 229 | 183 | 394 | 0 | 0 | 577 | 0 | 918 | 918 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 114 | 0 | 0 | 114 | 0 | 211 | 1 | 0 | 212 | 172 | 370 | 0 | 0 | 542 | 0 | 868 | 868 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 0 | 133 | 0 | 217 | 1 | 0 | 218 | 161 | 345 | 0 | 0 | 506 | 0 | 857 | 857 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 0 | 123 | 0 | 235 | 2 | 0 | 237 | 148 | 316 | 0 | 0 | 464 | 0 | 824 | 824 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 482 | 0 | 0 | 482 | 0 | 891 | 5 | 0 | 896 | 664 | 1425 | 0 | 0 | 2089 | 0 | 3467 | 3467 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 940 | 0 | 0 | 940 | 0 | 1817 | 11 | 0 | 1828 | 1323 | 2866 | 0 | 1 | 4189 | 1 | 6957 | 6958 |
| Apprch % | 0 | 0 | 0 | | | 0 | 100 | 0 | | | 0 | 99.4 | 0.6 | | | 31.6 | 68.4 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 13.5 | 0 | | 13.5 | 0 | 26.1 | 0.2 | | 26.3 | 19 | 41.2 | 0 | | 60.2 | 0 | 100 | |
| Unshifted | 0 | 0 | 0 | | 0 | 0 | 935 | 0 | | 935 | 0 | 1792 | 11 | | 1803 | 1323 | 2817 | 0 | | 4141 | 0 | 0 | 6879 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 0 | 99.5 | 0 | 0 | 99.5 | 0 | 98.6 | 100 | 0 | 98.6 | 100 | 98.3 | 0 | 100 | 98.8 | 0 | 0 | 98.9 |
| HV | 0 | 0 | 0 | | 0 | 0 | 5 | 0 | | 5 | 0 | 25 | 0 | | 25 | 0 | 49 | 0 | | 49 | 0 | 0 | 79 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0.5 | 0 | 1.4 | 0 | 0 | 1.4 | 0 | 1.7 | 0 | 0 | 1.2 | 0 | 0 | 1.1 |

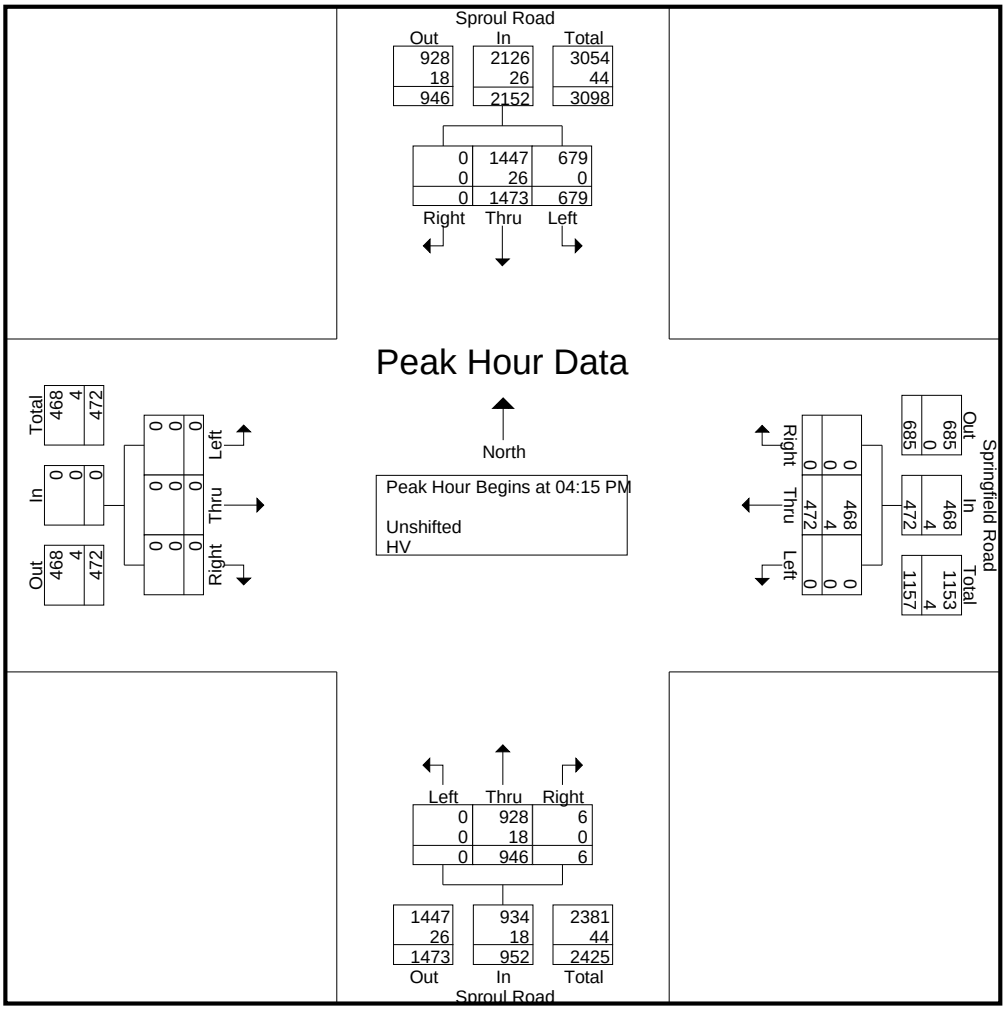


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Springfield Ropad
# Marple Township, Delaware County

File Name : 2014-09-18 PM Sproul Springfield
Site Code : 00000000
Start Date : 9/18/2014
Page No : 2

| | Eastbound | | | | Springfield Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 118 | 0 | **252** | **2** | **254** | 162 | 355 | 0 | 517 | 889 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 120 | 0 | 240 | 2 | 242 | 166 | 359 | 0 | 525 | 887 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | **122** | 0 | **122** | 0 | 226 | 1 | 227 | 168 | 365 | 0 | 533 | 882 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 112 | 0 | 228 | 1 | 229 | **183** | **394** | 0 | **577** | **918** |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 472 | 0 | 472 | 0 | 946 | 6 | 952 | 679 | 1473 | 0 | 2152 | 3576 |
| % App. Total | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 99.4 | 0.6 | | 31.6 | 68.4 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .967 | .000 | .967 | .000 | .938 | .750 | .937 | .928 | .935 | .000 | .932 | .974 |
| Unshifted | 0 | 0 | 0 | 0 | 0 | 468 | 0 | 468 | 0 | 928 | 6 | 934 | 679 | 1447 | 0 | 2126 | 3528 |
| % Unshifted | 0 | 0 | 0 | 0 | 0 | 99.2 | 0 | 99.2 | 0 | 98.1 | 100 | 98.1 | 100 | 98.2 | 0 | 98.8 | 98.7 |
| HV | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 18 | 0 | 18 | 0 | 26 | 0 | 26 | 48 |
| % HV | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0.8 | 0 | 1.9 | 0 | 1.9 | 0 | 1.8 | 0 | 1.2 | 1.3 |



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Sproul/Springfield/HS
Date: Saturday, September 20, 2014
Counter: ET JT

File Name : Del Co 05B Sat
Site Code : 05b
Start Date : 9/20/2014
Page No : 1

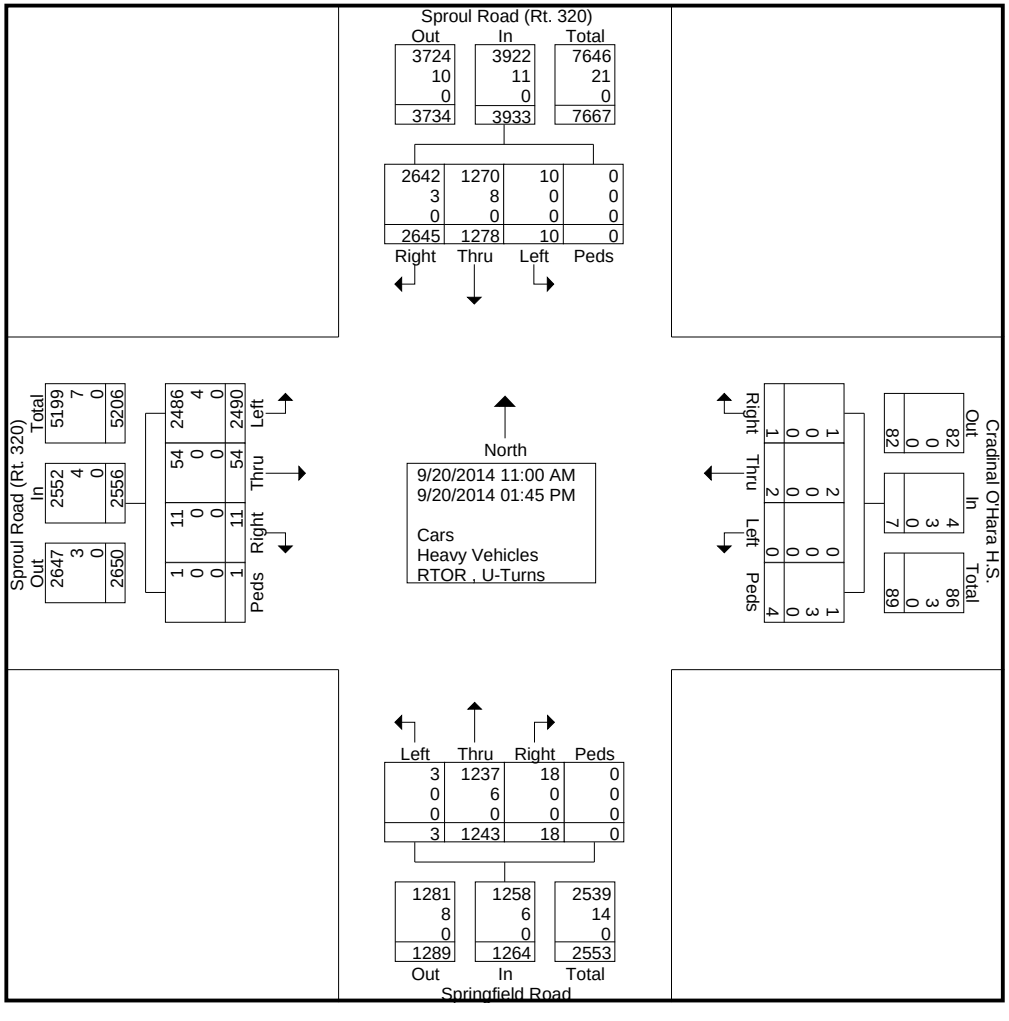
Groups Printed- Cars - Heavy Vehicles - Turns

| | Sproul Road (Rt. 320) Southbound | | | | | Cradinal O'Hara H.S. Westbound | | | | | Springfield Road Northbound | | | | | Sproul Road (Rt. 320) Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 11:00 AM | 183 | 102 | 0 | 0 | 285 | 1 | 1 | 0 | 1 | 3 | 0 | 88 | 1 | 0 | 89 | 3 | 8 | 186 | 0 | 197 | 574 |
| 11:15 AM | 198 | 94 | 0 | 0 | 292 | 0 | 0 | 0 | 0 | 0 | 1 | 96 | 0 | 0 | 97 | 1 | 3 | 204 | 0 | 208 | 597 |
| 11:30 AM | 219 | 91 | 4 | 0 | 314 | 0 | 0 | 0 | 0 | 0 | 0 | 111 | 0 | 0 | 111 | 1 | 4 | 210 | 1 | 216 | 641 |
| 11:45 AM | 209 | 106 | 0 | 0 | 315 | 0 | 0 | 0 | 0 | 0 | 1 | 114 | 0 | 0 | 115 | 1 | 5 | 214 | 0 | 220 | 650 |
| Total | 809 | 393 | 4 | 0 | 1206 | 1 | 1 | 0 | 1 | 3 | 2 | 409 | 1 | 0 | 412 | 6 | 20 | 814 | 1 | 841 | 2462 |
| 12:00 PM | 203 | 124 | 1 | 0 | 328 | 0 | 0 | 0 | 2 | 2 | 2 | 122 | 0 | 0 | 124 | 1 | 4 | 209 | 0 | 214 | 668 |
| 12:15 PM | 207 | 98 | 0 | 0 | 305 | 0 | 0 | 0 | 0 | 0 | 2 | 109 | 0 | 0 | 111 | 0 | 4 | 228 | 0 | 232 | 648 |
| 12:30 PM | 232 | 117 | 0 | 0 | 349 | 0 | 0 | 0 | 0 | 0 | 4 | 100 | 0 | 0 | 104 | 1 | 6 | 237 | 0 | 244 | 697 |
| 12:45 PM | 267 | 122 | 1 | 0 | 390 | 0 | 0 | 0 | 0 | 0 | 3 | 108 | 0 | 0 | 111 | 1 | 5 | 196 | 0 | 202 | 703 |
| Total | 909 | 461 | 2 | 0 | 1372 | 0 | 0 | 0 | 2 | 2 | 11 | 439 | 0 | 0 | 450 | 3 | 19 | 870 | 0 | 892 | 2716 |
| 01:00 PM | 244 | 105 | 1 | 0 | 350 | 0 | 1 | 0 | 0 | 1 | 2 | 109 | 0 | 0 | 111 | 1 | 4 | 219 | 0 | 224 | 686 |
| 01:15 PM | 221 | 90 | 2 | 0 | 313 | 0 | 0 | 0 | 0 | 0 | 2 | 93 | 2 | 0 | 97 | 1 | 1 | 186 | 0 | 188 | 598 |
| 01:30 PM | 251 | 122 | 1 | 0 | 374 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 0 | 0 | 97 | 0 | 3 | 197 | 0 | 200 | 671 |
| 01:45 PM | 211 | 107 | 0 | 0 | 318 | 0 | 0 | 0 | 1 | 1 | 1 | 96 | 0 | 0 | 97 | 0 | 7 | 204 | 0 | 211 | 627 |
| Total | 927 | 424 | 4 | 0 | 1355 | 0 | 1 | 0 | 1 | 2 | 5 | 395 | 2 | 0 | 402 | 2 | 15 | 806 | 0 | 823 | 2582 |
| Grand Total | 2645 | 1278 | 10 | 0 | 3933 | 1 | 2 | 0 | 4 | 7 | 18 | 1243 | 3 | 0 | 1264 | 11 | 54 | 2490 | 1 | 2556 | 7760 |
| Apprch % | 67.3 | 32.5 | 0.3 | 0 | | 14.3 | 28.6 | 0 | 57.1 | | 1.4 | 98.3 | 0.2 | 0 | | 0.4 | 2.1 | 97.4 | 0 | | |
| Total % | 34.1 | 16.5 | 0.1 | 0 | 50.7 | 0 | 0 | 0 | 0.1 | 0.1 | 0.2 | 16 | 0 | 0 | 16.3 | 0.1 | 0.7 | 32.1 | 0 | 32.9 | |
| Cars | 2642 | 1270 | 10 | 0 | 3922 | 1 | 2 | 0 | 1 | 4 | 18 | 1237 | 3 | 0 | 1258 | 11 | 54 | 2486 | 1 | 2552 | 7736 |
| % Cars | 99.9 | 99.4 | 100 | 0 | 99.7 | 100 | 100 | 0 | 25 | 57.1 | 100 | 99.5 | 100 | 0 | 99.5 | 100 | 100 | 99.8 | 100 | 99.8 | 99.7 |
| Heavy Vehicles | 3 | 8 | 0 | 0 | 11 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 4 | 0 | 4 | 24 |
| % Heavy Vehicles | 0.1 | 0.6 | 0 | 0 | 0.3 | 0 | 0 | 0 | 75 | 42.9 | 0 | 0.5 | 0 | 0 | 0.5 | 0 | 0 | 0.2 | 0 | 0.2 | 0.3 |
| RTOR , U-Turns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % RTOR , U-Turns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Sproul/Springfield/HS
Date: Saturday, September 20, 2014
Counter: ET JT

File Name : Del Co 05B Sat
Site Code : 05b
Start Date : 9/20/2014
Page No : 2



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Sproul/Springfield/HS
Date: Saturday, September 20, 2014
Counter: ET JT

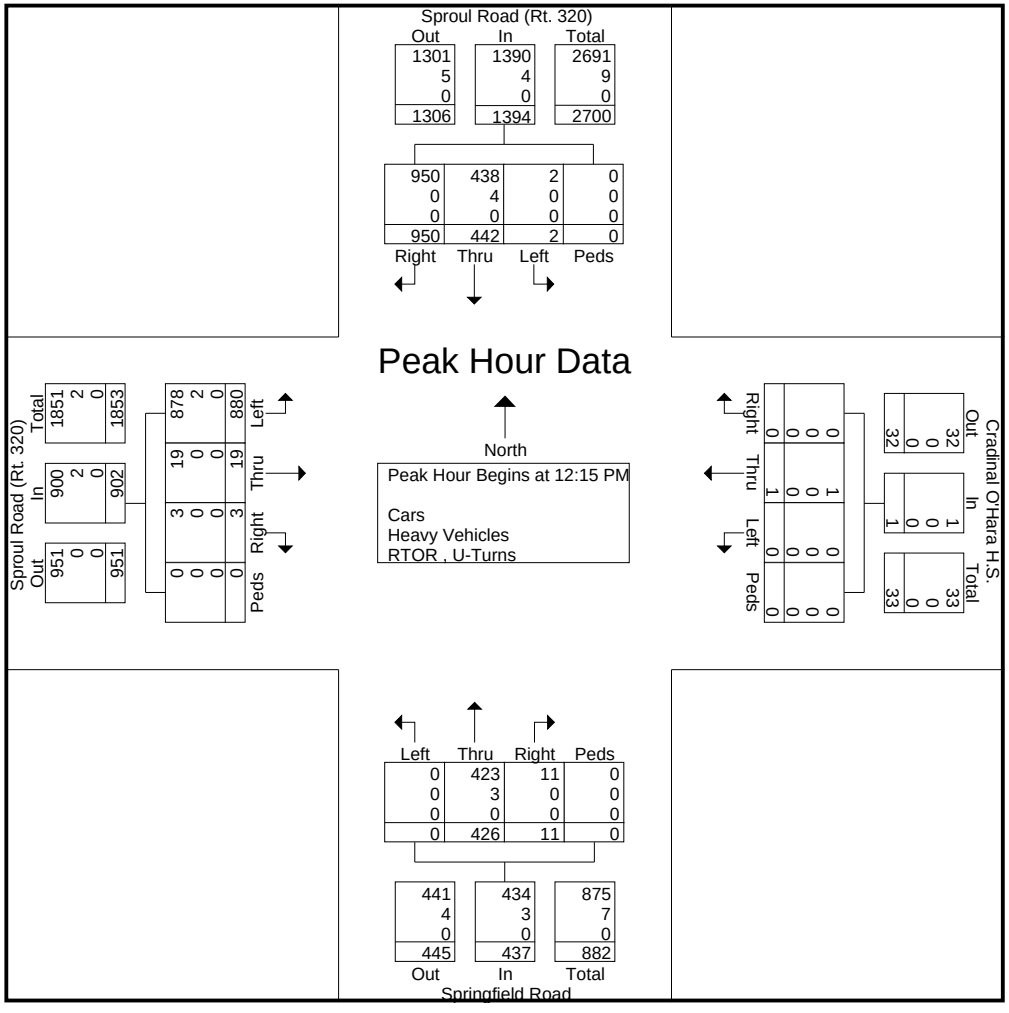
File Name : Del Co 05B Sat
Site Code : 05b
Start Date : 9/20/2014
Page No : 4

| | Sproul Road (Rt. 320) Southbound | | | | | Cradinal O'Hara H.S. Westbound | | | | | Springfield Road Northbound | | | | | Sproul Road (Rt. 320) Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:15 PM | | | | | | | | | | | | | | | | | | | | | |
| 12:15 PM | 207 | 98 | 0 | 0 | 305 | 0 | 0 | 0 | 0 | 0 | 2 | **109** | 0 | 0 | **111** | 0 | 4 | 228 | 0 | 232 | 648 |
| 12:30 PM | 232 | 117 | 0 | 0 | 349 | 0 | 0 | 0 | 0 | 0 | **4** | 100 | 0 | 0 | 104 | **1** | **6** | **237** | 0 | **244** | 697 |
| 12:45 PM | **267** | **122** | **1** | 0 | **390** | 0 | 0 | 0 | 0 | 0 | 3 | 108 | 0 | 0 | 111 | 1 | 5 | 196 | 0 | 202 | **703** |
| 01:00 PM | 244 | 105 | 1 | 0 | 350 | 0 | **1** | 0 | 0 | **1** | 2 | 109 | 0 | 0 | 111 | 1 | 4 | 219 | 0 | 224 | 686 |
| Total Volume | 950 | 442 | 2 | 0 | 1394 | 0 | 1 | 0 | 0 | 1 | 11 | 426 | 0 | 0 | 437 | 3 | 19 | 880 | 0 | 902 | 2734 |
| % App. Total | 68.1 | 31.7 | 0.1 | 0 | | 0 | 100 | 0 | 0 | | 2.5 | 97.5 | 0 | 0 | | 0.3 | 2.1 | 97.6 | 0 | | |
| PHF | .890 | .906 | .500 | .000 | .894 | .000 | .250 | .000 | .000 | .250 | .688 | .977 | .000 | .000 | .984 | .750 | .792 | .928 | .000 | .924 | .972 |
| Cars | 950 | 438 | 2 | 0 | 1390 | 0 | 1 | 0 | 0 | 1 | 11 | 423 | 0 | 0 | 434 | 3 | 19 | 878 | 0 | 900 | 2725 |
| % Cars | 100 | 99.1 | 100 | 0 | 99.7 | 0 | 100 | 0 | 0 | 100 | 100 | 99.3 | 0 | 0 | 99.3 | 100 | 100 | 99.8 | 0 | 99.8 | 99.7 |
| Heavy Vehicles | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 2 | 9 |
| % Heavy Vehicles | 0 | 0.9 | 0 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0 | 0 | 0.7 | 0 | 0 | 0.2 | 0 | 0.2 | 0.3 |
| RTOR , U-Turns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % RTOR , U-Turns | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Sproul/Springfield/HS
Date: Saturday, September 20, 2014
Counter: ET JT

File Name : Del Co 05B Sat
Site Code : 05b
Start Date : 9/20/2014
Page No : 5



## *SPROUL ROAD & OLD MARPLE ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Marple Rd
Date: Wednesday, April 8, 2014
Counter: MIO

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 1

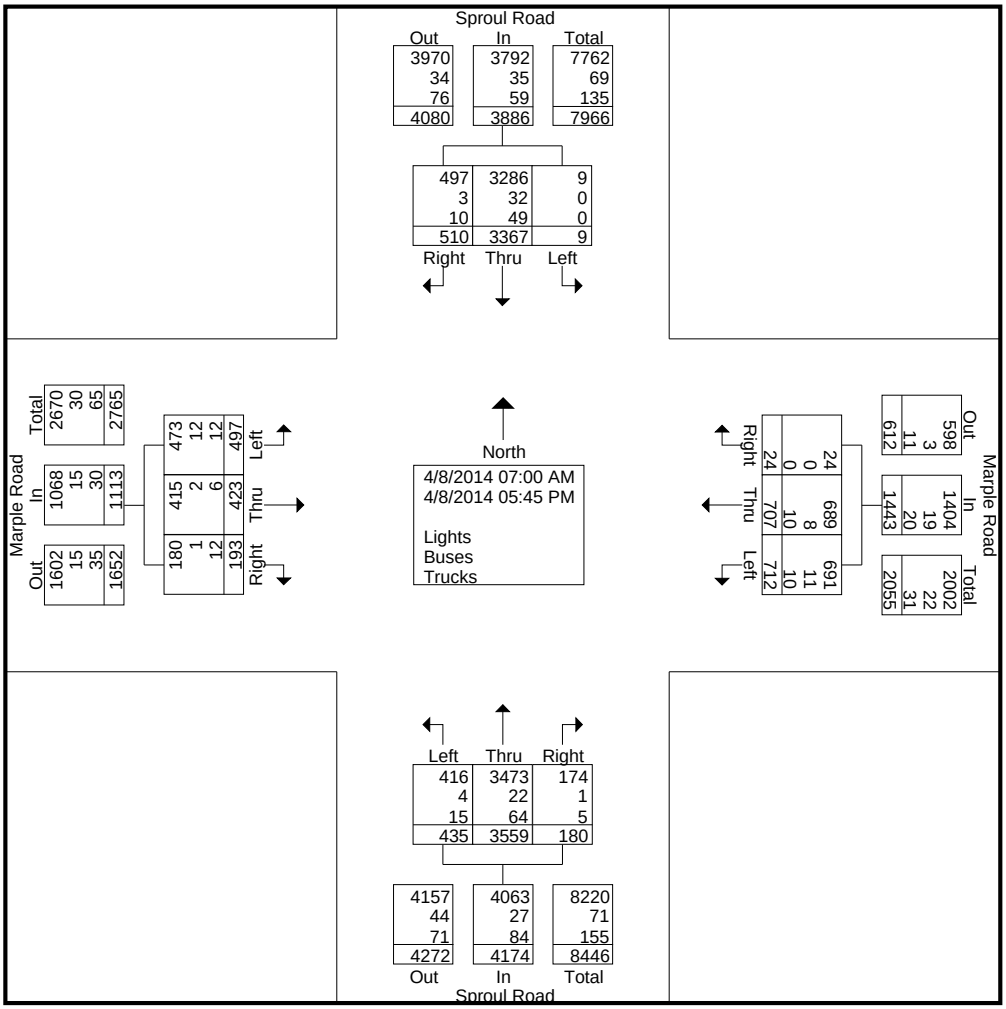
Groups Printed- Lights - Buses - Trucks

| | Marple Road Eastbound | | | | | Marple Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 20 | 15 | 10 | 0 | 45 | 44 | 36 | 0 | 0 | 80 | 30 | 237 | 3 | 0 | 270 | 0 | 112 | 14 | 0 | 126 | 0 | 521 | 521 |
| 07:15 AM | 32 | 17 | 12 | 0 | 61 | 59 | 40 | 3 | 0 | 102 | 40 | 249 | 2 | 0 | 291 | 0 | 153 | 20 | 0 | 173 | 0 | 627 | 627 |
| 07:30 AM | 37 | 20 | 10 | 0 | 67 | 57 | 50 | 0 | 0 | 107 | 43 | 290 | 13 | 0 | 346 | 0 | 178 | 18 | 0 | 196 | 0 | 716 | 716 |
| 07:45 AM | 21 | 13 | 9 | 0 | 43 | 59 | 55 | 0 | 0 | 114 | 44 | 244 | 10 | 0 | 298 | 1 | 182 | 40 | 0 | 223 | 0 | 678 | 678 |
| Total | 110 | 65 | 41 | 0 | 216 | 219 | 181 | 3 | 0 | 403 | 157 | 1020 | 28 | 0 | 1205 | 1 | 625 | 92 | 0 | 718 | 0 | 2542 | 2542 |
| 08:00 AM | 21 | 21 | 5 | 0 | 47 | 38 | 60 | 1 | 0 | 99 | 40 | 228 | 8 | 0 | 276 | 0 | 195 | 30 | 0 | 225 | 0 | 647 | 647 |
| 08:15 AM | 24 | 18 | 13 | 0 | 55 | 56 | 66 | 0 | 0 | 122 | 37 | 249 | 8 | 0 | 294 | 0 | 146 | 39 | 0 | 185 | 0 | 656 | 656 |
| 08:30 AM | 25 | 12 | 10 | 0 | 47 | 44 | 70 | 0 | 0 | 114 | 36 | 232 | 10 | 0 | 278 | 0 | 162 | 33 | 0 | 195 | 0 | 634 | 634 |
| 08:45 AM | 25 | 12 | 4 | 0 | 41 | 47 | 55 | 1 | 0 | 103 | 25 | 250 | 12 | 0 | 287 | 0 | 132 | 28 | 0 | 160 | 0 | 591 | 591 |
| Total | 95 | 63 | 32 | 0 | 190 | 185 | 251 | 2 | 0 | 438 | 138 | 959 | 38 | 0 | 1135 | 0 | 635 | 130 | 0 | 765 | 0 | 2528 | 2528 |
| 04:00 PM | 34 | 38 | 30 | 0 | 102 | 45 | 37 | 1 | 0 | 83 | 8 | 171 | 16 | 0 | 195 | 1 | 257 | 33 | 0 | 291 | 0 | 671 | 671 |
| 04:15 PM | 44 | 31 | 10 | 0 | 85 | 34 | 30 | 0 | 0 | 64 | 19 | 216 | 12 | 0 | 247 | 0 | 250 | 50 | 0 | 300 | 0 | 696 | 696 |
| 04:30 PM | 38 | 43 | 13 | 0 | 94 | 41 | 31 | 3 | 0 | 75 | 25 | 216 | 12 | 0 | 253 | 0 | 269 | 41 | 0 | 310 | 0 | 732 | 732 |
| 04:45 PM | 38 | 42 | 9 | 0 | 89 | 36 | 27 | 3 | 0 | 66 | 17 | 200 | 16 | 0 | 233 | 2 | 254 | 29 | 0 | 285 | 0 | 673 | 673 |
| Total | 154 | 154 | 62 | 0 | 370 | 156 | 125 | 7 | 0 | 288 | 69 | 803 | 56 | 0 | 928 | 3 | 1030 | 153 | 0 | 1186 | 0 | 2772 | 2772 |
| 05:00 PM | 37 | 38 | 16 | 0 | 91 | 35 | 38 | 4 | 0 | 77 | 12 | 206 | 14 | 0 | 232 | 1 | 306 | 43 | 0 | 350 | 0 | 750 | 750 |
| 05:15 PM | 36 | 38 | 15 | 0 | 89 | 36 | 42 | 2 | 0 | 80 | 17 | 199 | 17 | 0 | 233 | 1 | 279 | 29 | 0 | 309 | 0 | 711 | 711 |
| 05:30 PM | 32 | 37 | 15 | 0 | 84 | 46 | 36 | 1 | 0 | 83 | 19 | 186 | 11 | 0 | 216 | 1 | 244 | 30 | 0 | 275 | 0 | 658 | 658 |
| 05:45 PM | 33 | 28 | 12 | 0 | 73 | 35 | 34 | 5 | 0 | 74 | 23 | 186 | 16 | 0 | 225 | 2 | 248 | 33 | 0 | 283 | 0 | 655 | 655 |
| Total | 138 | 141 | 58 | 0 | 337 | 152 | 150 | 12 | 0 | 314 | 71 | 777 | 58 | 0 | 906 | 5 | 1077 | 135 | 0 | 1217 | 0 | 2774 | 2774 |
| Grand Total | 497 | 423 | 193 | 0 | 1113 | 712 | 707 | 24 | 0 | 1443 | 435 | 3559 | 180 | 0 | 4174 | 9 | 3367 | 510 | 0 | 3886 | 0 | 10616 | 10616 |
| Apprch % | 44.7 | 38 | 17.3 | | | 49.3 | 49 | 1.7 | | | 10.4 | 85.3 | 4.3 | | | 0.2 | 86.6 | 13.1 | | | | | |
| Total % | 4.7 | 4 | 1.8 | | 10.5 | 6.7 | 6.7 | 0.2 | | 13.6 | 4.1 | 33.5 | 1.7 | | 39.3 | 0.1 | 31.7 | 4.8 | | 36.6 | 0 | 100 | |
| Lights | 473 | 415 | 180 | | 1068 | 691 | 689 | 24 | | 1404 | 416 | 3473 | 174 | | 4063 | 9 | 3286 | 497 | | 3792 | 0 | 0 | 10327 |
| % Lights | 95.2 | 98.1 | 93.3 | 0 | 96 | 97.1 | 97.5 | 100 | 0 | 97.3 | 95.6 | 97.6 | 96.7 | 0 | 97.3 | 100 | 97.6 | 97.5 | 0 | 97.6 | 0 | 0 | 97.3 |
| Buses | 12 | 2 | 1 | | 15 | 11 | 8 | 0 | | 19 | 4 | 22 | 1 | | 27 | 0 | 32 | 3 | | 35 | 0 | 0 | 96 |
| % Buses | 2.4 | 0.5 | 0.5 | 0 | 1.3 | 1.5 | 1.1 | 0 | 0 | 1.3 | 0.9 | 0.6 | 0.6 | 0 | 0.6 | 0 | 1 | 0.6 | 0 | 0.9 | 0 | 0 | 0.9 |
| Trucks | 12 | 6 | 12 | | 30 | 10 | 10 | 0 | | 20 | 15 | 64 | 5 | | 84 | 0 | 49 | 10 | | 59 | 0 | 0 | 193 |
| % Trucks | 2.4 | 1.4 | 6.2 | 0 | 2.7 | 1.4 | 1.4 | 0 | 0 | 1.4 | 3.4 | 1.8 | 2.8 | 0 | 2 | 0 | 1.5 | 2 | 0 | 1.5 | 0 | 0 | 1.8 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 2

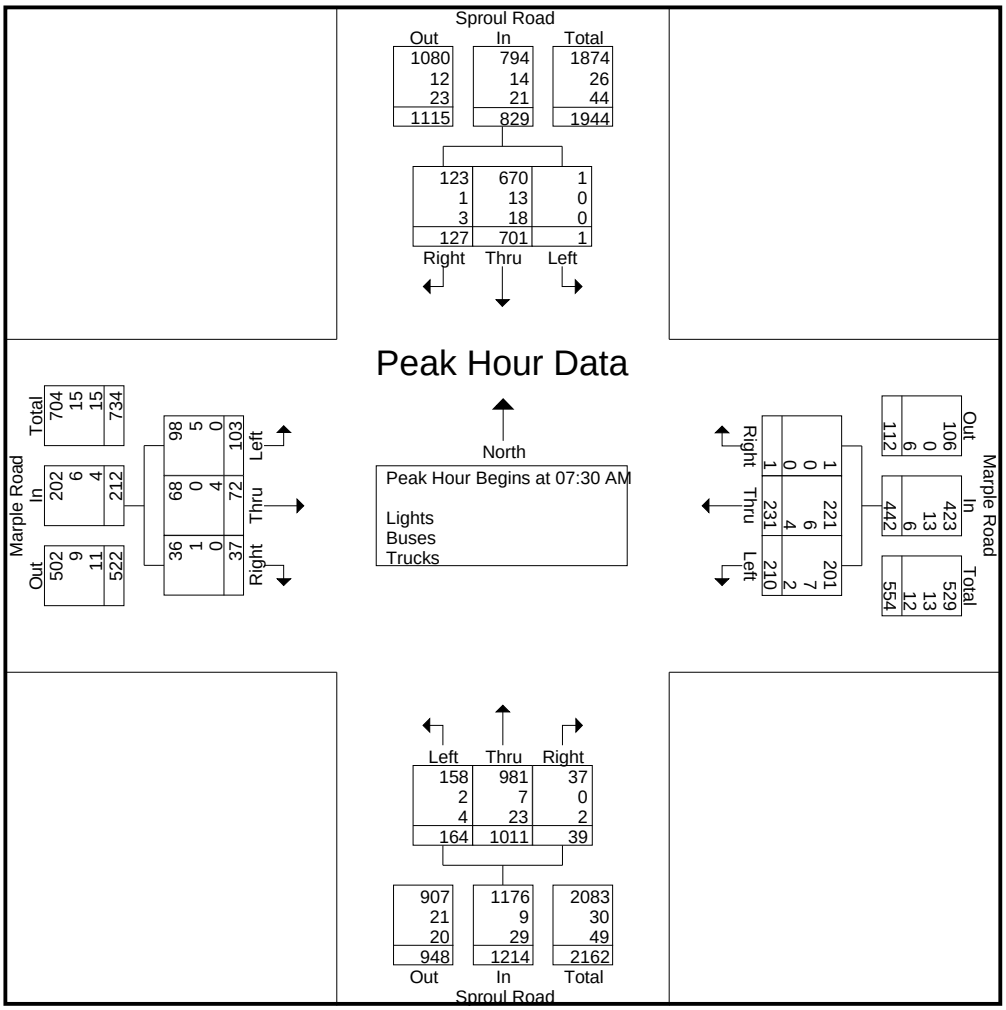


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 3

| | Marple Road Eastbound | | | | Marple Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | **37** | 20 | 10 | **67** | 57 | 50 | 0 | 107 | 43 | **290** | **13** | **346** | 0 | 178 | 18 | 196 | **716** |
| 07:45 AM | 21 | 13 | 9 | 43 | **59** | 55 | 0 | 114 | **44** | 244 | 10 | 298 | **1** | 182 | **40** | 223 | 678 |
| 08:00 AM | 21 | **21** | 5 | 47 | 38 | 60 | **1** | 99 | 40 | 228 | 8 | 276 | 0 | **195** | 30 | **225** | 647 |
| 08:15 AM | 24 | 18 | **13** | 55 | 56 | **66** | 0 | **122** | 37 | 249 | 8 | 294 | 0 | 146 | 39 | 185 | 656 |
| Total Volume | 103 | 72 | 37 | 212 | 210 | 231 | 1 | 442 | 164 | 1011 | 39 | 1214 | 1 | 701 | 127 | 829 | 2697 |
| % App. Total | 48.6 | 34 | 17.5 | | 47.5 | 52.3 | 0.2 | | 13.5 | 83.3 | 3.2 | | 0.1 | 84.6 | 15.3 | | |
| PHF | .696 | .857 | .712 | .791 | .890 | .875 | .250 | .906 | .932 | .872 | .750 | .877 | .250 | .899 | .794 | .921 | .942 |
| Lights | 98 | 68 | 36 | 202 | 201 | 221 | 1 | 423 | 158 | 981 | 37 | 1176 | 1 | 670 | 123 | 794 | 2595 |
| % Lights | 95.1 | 94.4 | 97.3 | 95.3 | 95.7 | 95.7 | 100 | 95.7 | 96.3 | 97.0 | 94.9 | 96.9 | 100 | 95.6 | 96.9 | 95.8 | 96.2 |
| Buses | 5 | 0 | 1 | 6 | 7 | 6 | 0 | 13 | 2 | 7 | 0 | 9 | 0 | 13 | 1 | 14 | 42 |
| % Buses | 4.9 | 0 | 2.7 | 2.8 | 3.3 | 2.6 | 0 | 2.9 | 1.2 | 0.7 | 0 | 0.7 | 0 | 1.9 | 0.8 | 1.7 | 1.6 |
| Trucks | 0 | 4 | 0 | 4 | 2 | 4 | 0 | 6 | 4 | 23 | 2 | 29 | 0 | 18 | 3 | 21 | 60 |
| % Trucks | 0 | 5.6 | 0 | 1.9 | 1.0 | 1.7 | 0 | 1.4 | 2.4 | 2.3 | 5.1 | 2.4 | 0 | 2.6 | 2.4 | 2.5 | 2.2 |

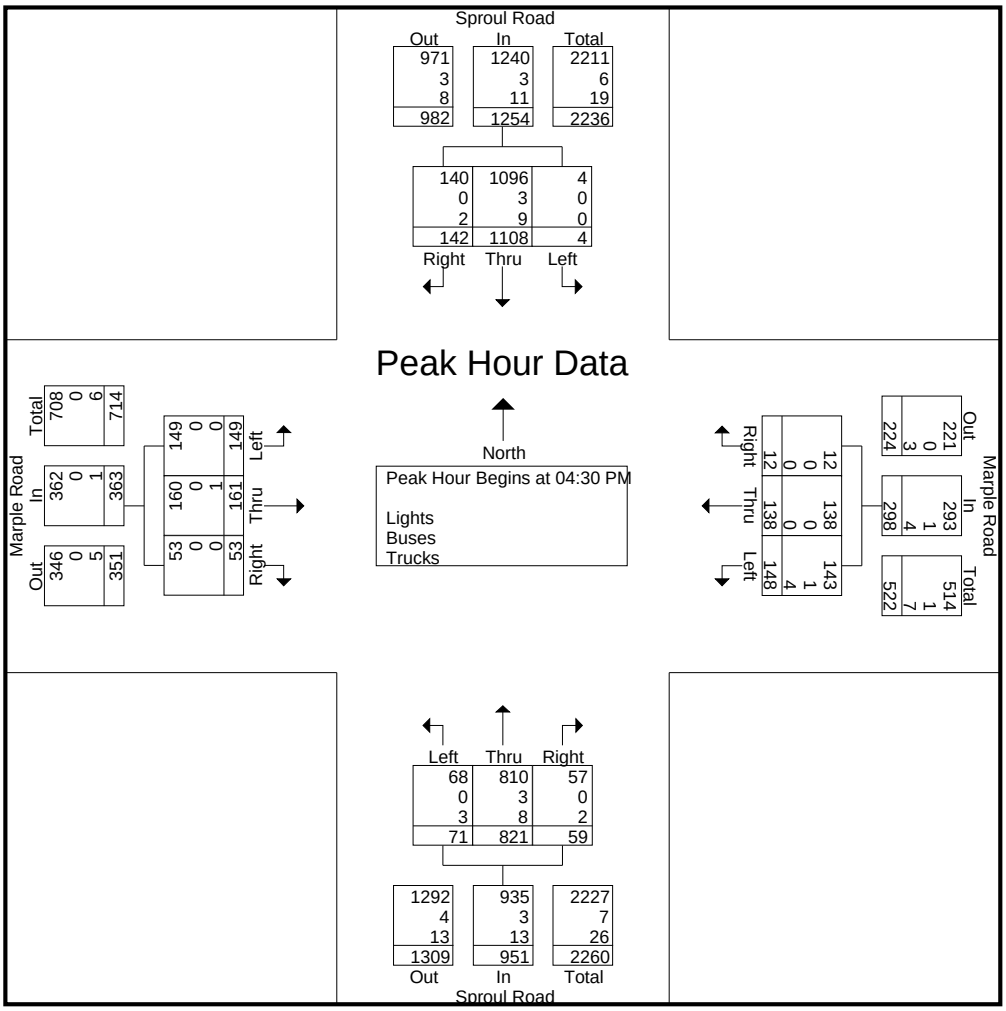


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 4

| | Marple Road Eastbound | | | | Marple Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | **38** | **43** | 13 | **94** | **41** | 31 | 3 | 75 | **25** | **216** | 12 | **253** | 0 | 269 | 41 | 310 | 732 |
| 04:45 PM | 38 | 42 | 9 | 89 | 36 | 27 | 3 | 66 | 17 | 200 | 16 | 233 | **2** | 254 | 29 | 285 | 673 |
| 05:00 PM | 37 | 38 | **16** | 91 | 35 | 38 | **4** | 77 | 12 | 206 | 14 | 232 | 1 | **306** | **43** | **350** | **750** |
| 05:15 PM | 36 | 38 | 15 | 89 | 36 | **42** | 2 | **80** | 17 | 199 | **17** | 233 | 1 | 279 | 29 | 309 | 711 |
| Total Volume | 149 | 161 | 53 | 363 | 148 | 138 | 12 | 298 | 71 | 821 | 59 | 951 | 4 | 1108 | 142 | 1254 | 2866 |
| % App. Total | 41 | 44.4 | 14.6 | | 49.7 | 46.3 | 4 | | 7.5 | 86.3 | 6.2 | | 0.3 | 88.4 | 11.3 | | |
| PHF | .980 | .936 | .828 | .965 | .902 | .821 | .750 | .931 | .710 | .950 | .868 | .940 | .500 | .905 | .826 | .896 | .955 |
| Lights | 149 | 160 | 53 | 362 | 143 | 138 | 12 | 293 | 68 | 810 | 57 | 935 | 4 | 1096 | 140 | 1240 | 2830 |
| % Lights | 100 | 99.4 | 100 | 99.7 | 96.6 | 100 | 100 | 98.3 | 95.8 | 98.7 | 96.6 | 98.3 | 100 | 98.9 | 98.6 | 98.9 | 98.7 |
| Buses | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 7 |
| % Buses | 0 | 0 | 0 | 0 | 0.7 | 0 | 0 | 0.3 | 0 | 0.4 | 0 | 0.3 | 0 | 0.3 | 0 | 0.2 | 0.2 |
| Trucks | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 4 | 3 | 8 | 2 | 13 | 0 | 9 | 2 | 11 | 29 |
| % Trucks | 0 | 0.6 | 0 | 0.3 | 2.7 | 0 | 0 | 1.3 | 4.2 | 1.0 | 3.4 | 1.4 | 0 | 0.8 | 1.4 | 0.9 | 1.0 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/Marple Rd
Date: Wednesday, April 8, 2014
Counter: MIO

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 1

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Marple Road Eastbound | | | | | Marple Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 5 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

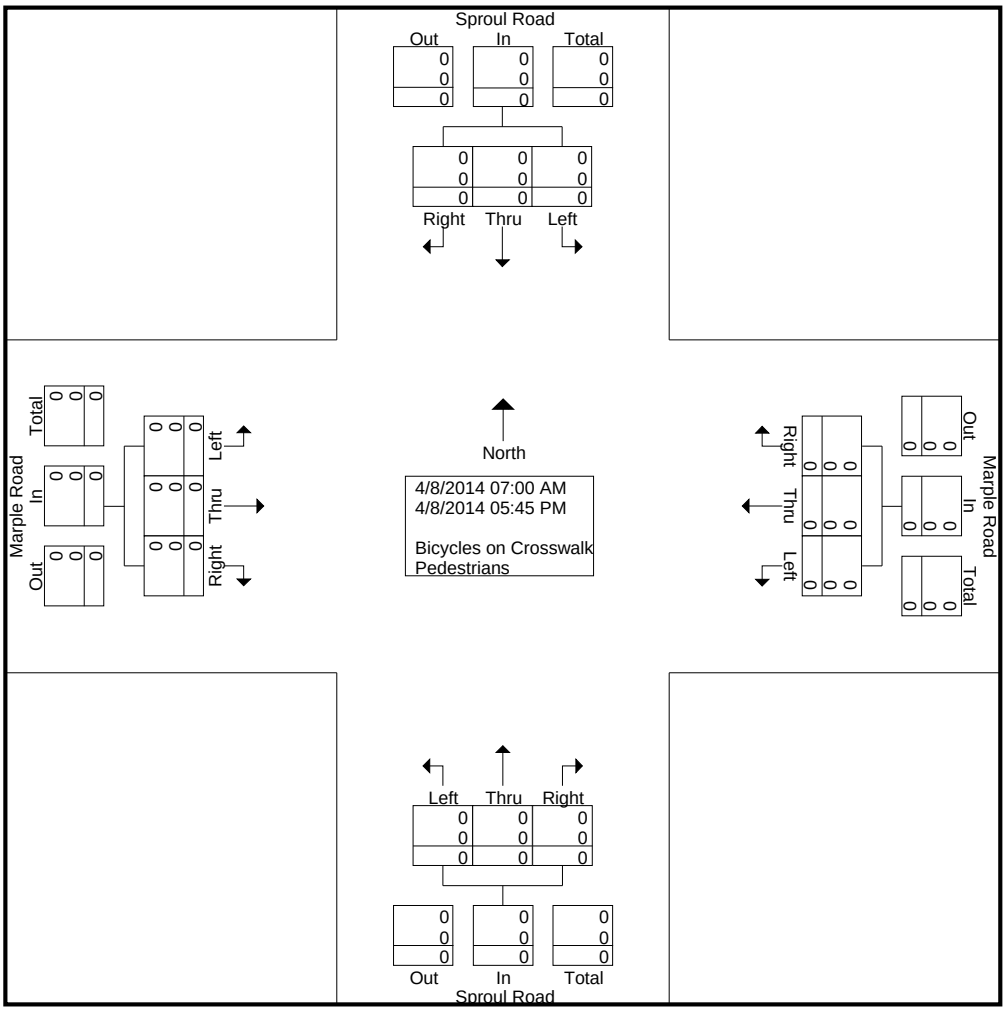
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 2

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Marple Road Eastbound | | | | | Marple Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 0 | 7 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 7 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 100 |

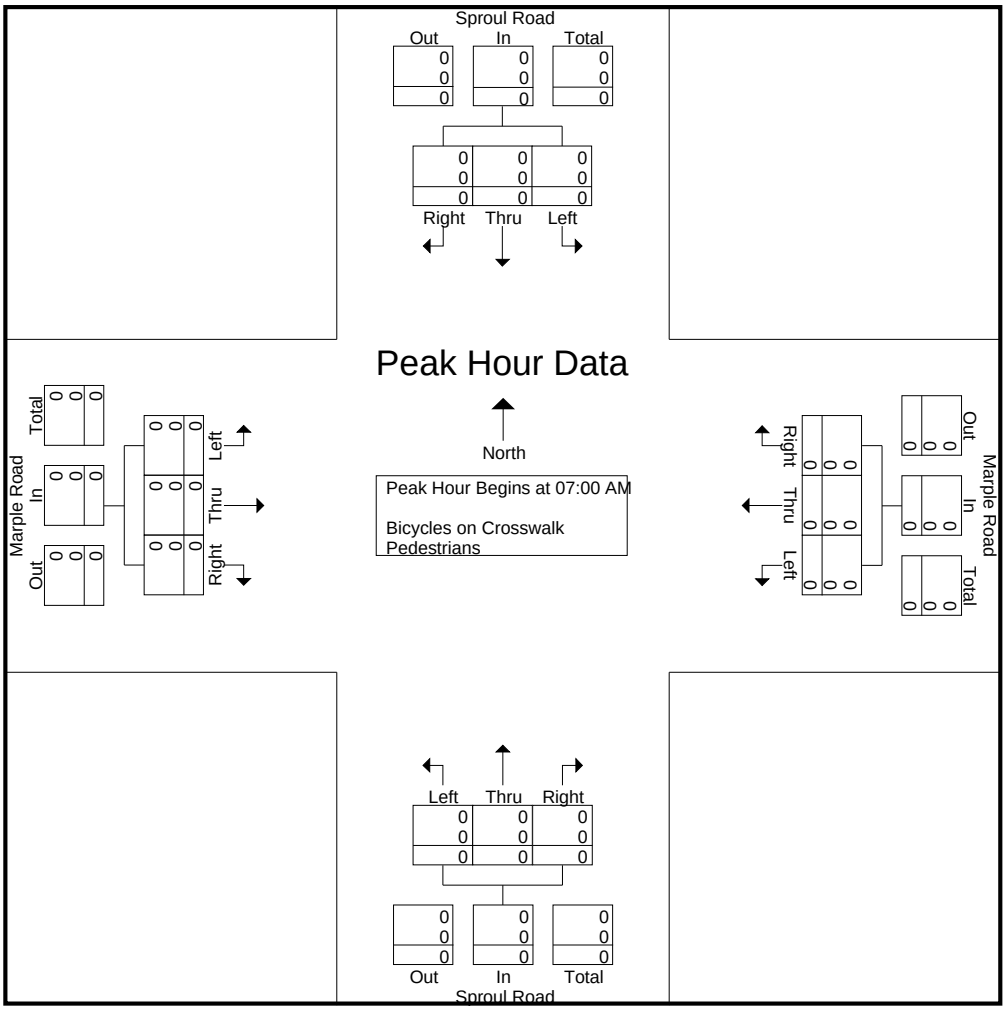


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 3

| | Marple Road Eastbound | | | | Marple Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

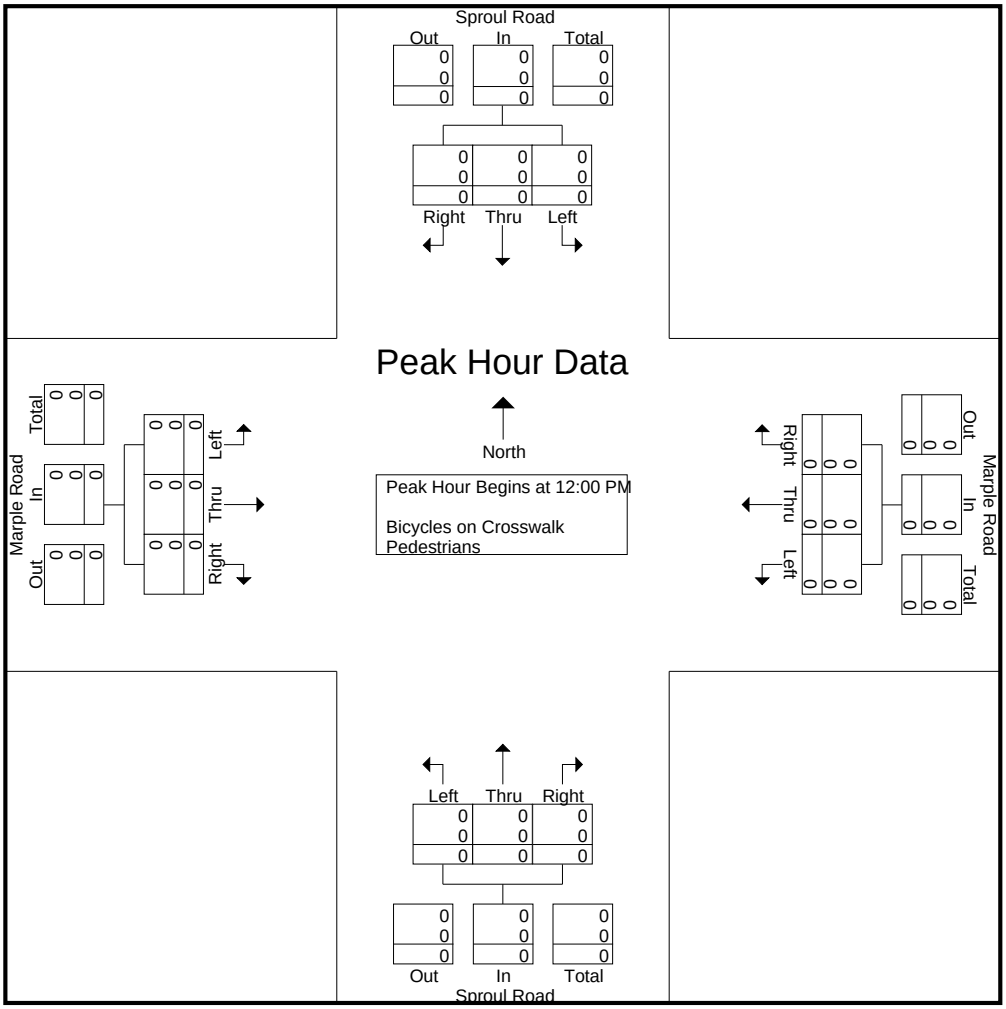


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & Old Marple Road
# Marple Township, Delaware County

File Name : 12_MS 0408 11_Sproul & Marple
Site Code : 11
Start Date : 4/8/2014
Page No : 4

| | Marple Road Eastbound | | | | Marple Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Old Marple Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 06 Sat
Site Code : 06
Start Date : 9/6/2014
Page No : 1

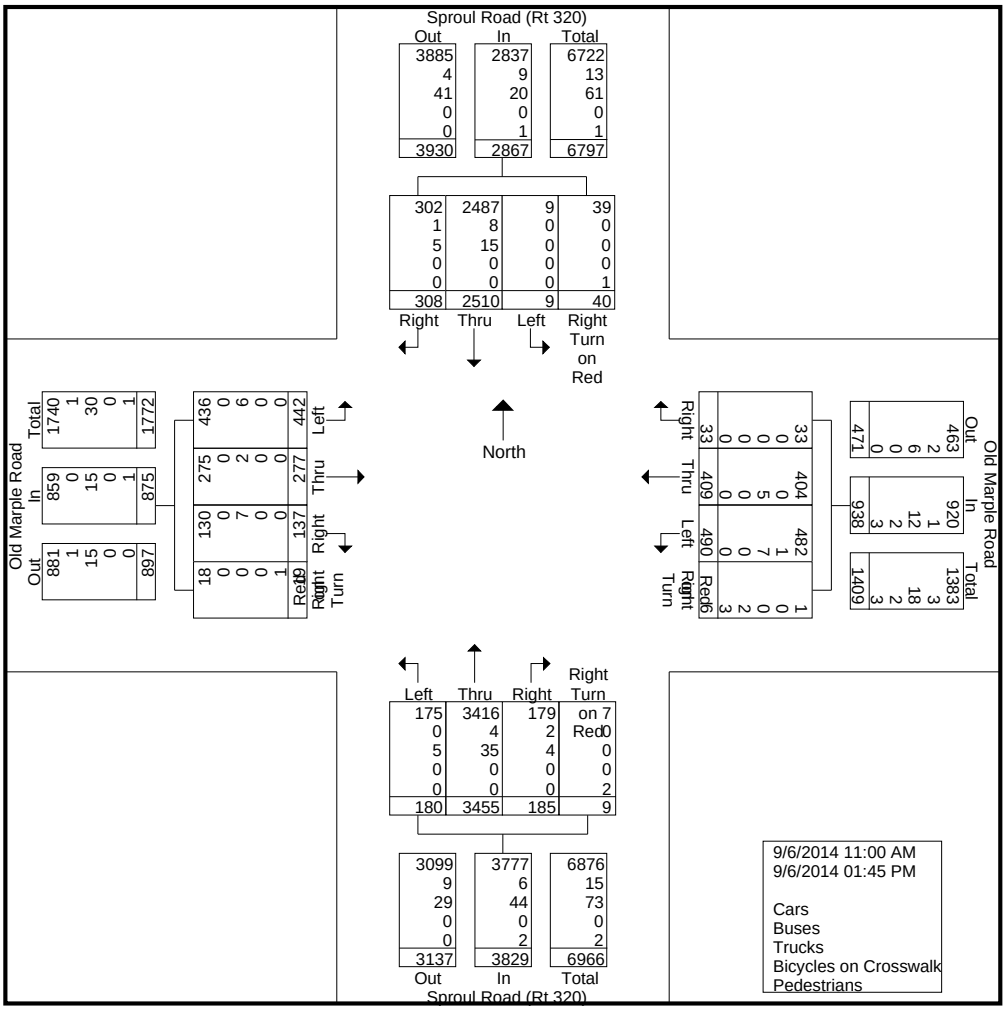
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Sproul Road (Rt 320) Southbound | | | | | Old Marple Road Westbound | | | | | Sproul Road (Rt 320) Northbound | | | | | Old Marple Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 11:00 AM | 21 | 212 | 0 | 1 | 234 | 0 | 29 | 40 | 3 | 72 | 15 | 293 | 12 | 1 | 321 | 12 | 21 | 36 | 0 | 69 | 696 |
| 11:15 AM | 28 | 197 | 2 | 3 | 230 | 1 | 40 | 34 | 0 | 75 | 13 | 306 | 12 | 0 | 331 | 15 | 21 | 37 | 1 | 74 | 710 |
| 11:30 AM | 16 | 186 | 1 | 3 | 206 | 4 | 29 | 42 | 0 | 75 | 24 | 255 | 12 | 0 | 291 | 14 | 34 | 37 | 1 | 86 | 658 |
| 11:45 AM | 25 | 210 | 0 | 7 | 242 | 4 | 39 | 45 | 0 | 88 | 17 | 268 | 17 | 0 | 302 | 10 | 24 | 34 | 0 | 68 | 700 |
| Total | 90 | 805 | 3 | 14 | 912 | 9 | 137 | 161 | 3 | 310 | 69 | 1122 | 53 | 1 | 1245 | 51 | 100 | 144 | 2 | 297 | 2764 |
| 12:00 PM | 28 | 208 | 0 | 5 | 241 | 5 | 28 | 50 | 0 | 83 | 10 | 304 | 19 | 1 | 334 | 9 | 16 | 40 | 1 | 66 | 724 |
| 12:15 PM | 30 | 226 | 2 | 4 | 262 | 0 | 34 | 45 | 0 | 79 | 14 | 285 | 14 | 0 | 313 | 15 | 21 | 42 | 1 | 79 | 733 |
| 12:30 PM | 29 | 220 | 0 | 7 | 256 | 3 | 39 | 34 | 1 | 77 | 27 | 298 | 8 | 0 | 333 | 10 | 23 | 39 | 2 | 74 | 740 |
| 12:45 PM | 14 | 196 | 2 | 1 | 213 | 0 | 42 | 49 | 0 | 91 | 15 | 304 | 23 | 1 | 343 | 11 | 25 | 44 | 1 | 81 | 728 |
| Total | 101 | 850 | 4 | 17 | 972 | 8 | 143 | 178 | 1 | 330 | 66 | 1191 | 64 | 2 | 1323 | 45 | 85 | 165 | 5 | 300 | 2925 |
| 01:00 PM | 23 | 243 | 0 | 2 | 268 | 3 | 24 | 34 | 0 | 61 | 12 | 288 | 19 | 2 | 321 | 5 | 21 | 37 | 5 | 68 | 718 |
| 01:15 PM | 30 | 225 | 1 | 3 | 259 | 1 | 30 | 57 | 2 | 90 | 10 | 283 | 15 | 2 | 310 | 15 | 31 | 38 | 4 | 88 | 747 |
| 01:30 PM | 30 | 208 | 1 | 2 | 241 | 4 | 38 | 30 | 0 | 72 | 16 | 317 | 17 | 0 | 350 | 10 | 15 | 32 | 2 | 59 | 722 |
| 01:45 PM | 34 | 179 | 0 | 2 | 215 | 8 | 37 | 30 | 0 | 75 | 12 | 254 | 12 | 2 | 280 | 11 | 25 | 26 | 1 | 63 | 633 |
| Total | 117 | 855 | 2 | 9 | 983 | 16 | 129 | 151 | 2 | 298 | 50 | 1142 | 63 | 6 | 1261 | 41 | 92 | 133 | 12 | 278 | 2820 |
| Grand Total | 308 | 2510 | 9 | 40 | 2867 | 33 | 409 | 490 | 6 | 938 | 185 | 3455 | 180 | 9 | 3829 | 137 | 277 | 442 | 19 | 875 | 8509 |
| Apprch % | 10.7 | 87.5 | 0.3 | 1.4 | | 3.5 | 43.6 | 52.2 | 0.6 | | 4.8 | 90.2 | 4.7 | 0.2 | | 15.7 | 31.7 | 50.5 | 2.2 | | |
| Total % | 3.6 | 29.5 | 0.1 | 0.5 | 33.7 | 0.4 | 4.8 | 5.8 | 0.1 | 11 | 2.2 | 40.6 | 2.1 | 0.1 | 45 | 1.6 | 3.3 | 5.2 | 0.2 | 10.3 | |
| Cars | 302 | 2487 | 9 | 39 | 2837 | 33 | 404 | 482 | 1 | 920 | 179 | 3416 | 175 | 7 | 3777 | 130 | 275 | 436 | 18 | 859 | 8393 |
| % Cars | 98.1 | 99.1 | 100 | 97.5 | 99 | 100 | 98.8 | 98.4 | 16.7 | 98.1 | 96.8 | 98.9 | 97.2 | 77.8 | 98.6 | 94.9 | 99.3 | 98.6 | 94.7 | 98.2 | 98.6 |
| Buses | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 1 | 2 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 16 |
| % Buses | 0.3 | 0.3 | 0 | 0 | 0.3 | 0 | 0 | 0.2 | 0 | 0.1 | 1.1 | 0.1 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| Trucks | 5 | 15 | 0 | 0 | 20 | 0 | 5 | 7 | 0 | 12 | 4 | 35 | 5 | 0 | 44 | 7 | 2 | 6 | 0 | 15 | 91 |
| % Trucks | 1.6 | 0.6 | 0 | 0 | 0.7 | 0 | 1.2 | 1.4 | 0 | 1.3 | 2.2 | 1 | 2.8 | 0 | 1.1 | 5.1 | 0.7 | 1.4 | 0 | 1.7 | 1.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33.3 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 7 |
| % Pedestrians | 0 | 0 | 0 | 2.5 | 0 | 0 | 0 | 0 | 50 | 0.3 | 0 | 0 | 0 | 22.2 | 0.1 | 0 | 0 | 0 | 5.3 | 0.1 | 0.1 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Old Marple Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 06 Sat
Site Code : 06
Start Date : 9/6/2014
Page No : 2



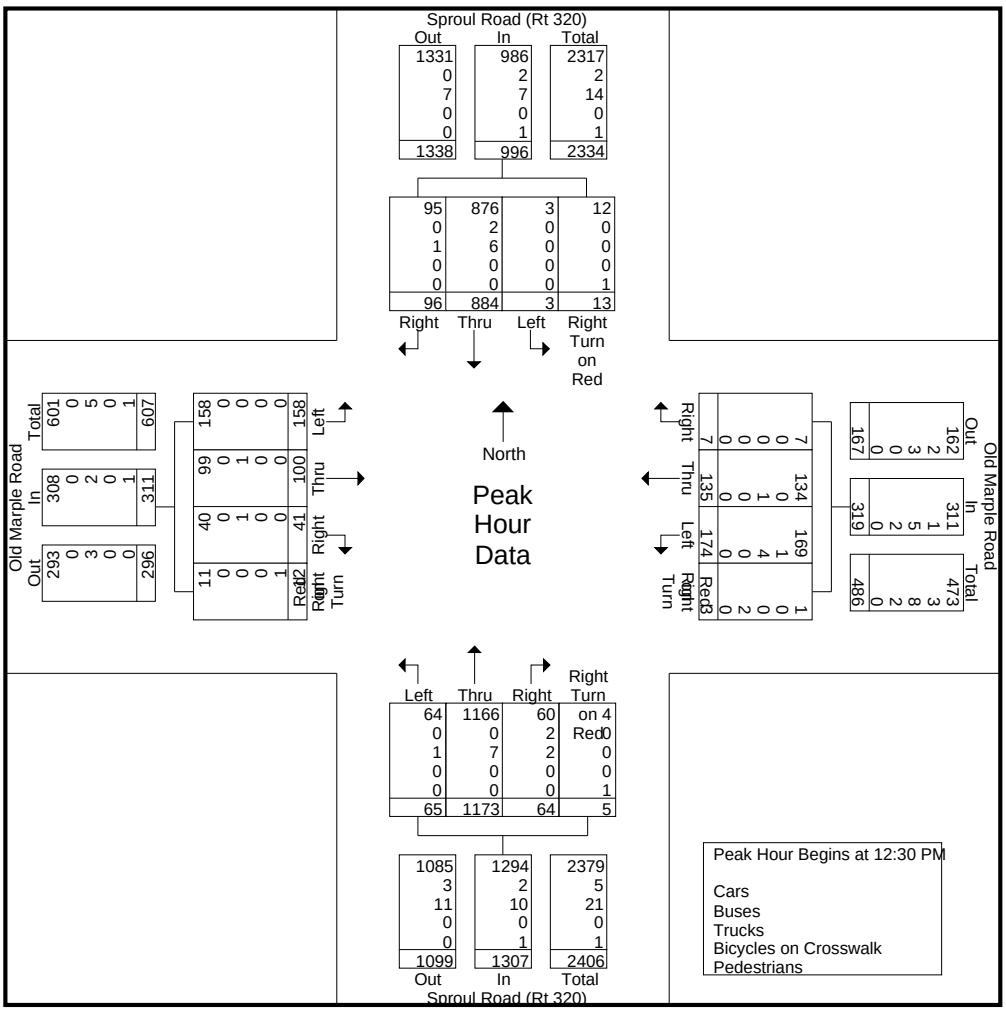
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 320/Old Marple Road
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 06 Sat
Site Code : 06
Start Date : 9/6/2014
Page No : 4

| | Sproul Road (Rt 320) Southbound | | | | | Old Marple Road Westbound | | | | | Sproul Road (Rt 320) Northbound | | | | | Old Marple Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 12:30 PM | 29 | 220 | 0 | **7** | 256 | **3** | 39 | 34 | 1 | 77 | **27** | 298 | 8 | 0 | 333 | 10 | 23 | 39 | 2 | 74 | 740 |
| 12:45 PM | 14 | 196 | **2** | 1 | 213 | 0 | **42** | 49 | 0 | **91** | 15 | **304** | **23** | 1 | **343** | 11 | 25 | **44** | 1 | 81 | 728 |
| 01:00 PM | 23 | **243** | 0 | 2 | **268** | 3 | 24 | 34 | 0 | 61 | 12 | 288 | 19 | **2** | 321 | 5 | 21 | 37 | **5** | 68 | 718 |
| 01:15 PM | **30** | 225 | 1 | 3 | 259 | 1 | 30 | **57** | **2** | 90 | 10 | 283 | 15 | 2 | 310 | **15** | **31** | 38 | 4 | **88** | **747** |
| Total Volume | 96 | 884 | 3 | 13 | 996 | 7 | 135 | 174 | 3 | 319 | 64 | 1173 | 65 | 5 | 1307 | 41 | 100 | 158 | 12 | 311 | 2933 |
| % App. Total | 9.6 | 88.8 | 0.3 | 1.3 | | 2.2 | 42.3 | 54.5 | 0.9 | | 4.9 | 89.7 | 5 | 0.4 | | 13.2 | 32.2 | 50.8 | 3.9 | | |
| PHF | .800 | .909 | .375 | .464 | .929 | .583 | .804 | .763 | .375 | .876 | .593 | .965 | .707 | .625 | .953 | .683 | .806 | .898 | .600 | .884 | .982 |
| Cars | 95 | 876 | 3 | 12 | 986 | 7 | 134 | 169 | 1 | 311 | 60 | 1166 | | | | | | | | | |
| % Cars | 99.0 | 99.1 | 100 | 92.3 | 99.0 | 100 | 99.3 | 97.1 | 33.3 | 97.5 | 93.8 | 99.4 | 98.5 | 80.0 | 99.0 | 97.6 | 99.0 | 100 | 91.7 | 99.0 | 98.8 |
| Buses | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Buses | 0 | 0.2 | 0 | 0 | 0.2 | 0 | 0 | 0.6 | 0 | 0.3 | 3.1 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| Trucks | 1 | 6 | 0 | 0 | 7 | 0 | 1 | 4 | 0 | 5 | 2 | 7 | 1 | 0 | 10 | 1 | 1 | 0 | 0 | 2 | 24 |
| % Trucks | 1.0 | 0.7 | 0 | 0 | 0.7 | 0 | 0.7 | 2.3 | 0 | 1.6 | 3.1 | 0.6 | 1.5 | 0 | 0.8 | 2.4 | 1.0 | 0 | 0 | 0.6 | 0.8 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66.7 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Pedestrians | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 3 |
| % Pedestrians | 0 | 0 | 0 | 7.7 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20.0 | 0.1 | 0 | 0 | 0 | 8.3 | 0.3 | 0.1 |



## *SPROUL ROAD & STATE ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/State Rd
Date: Thursday, April 10, 2014
Counter: ET / JT

File Name : 13_MS 0410 15_Sproul & SR1
Site Code : 15
Start Date : 4/10/2014
Page No : 1

Groups Printed- Cars - Heavy Vehicles - Turns

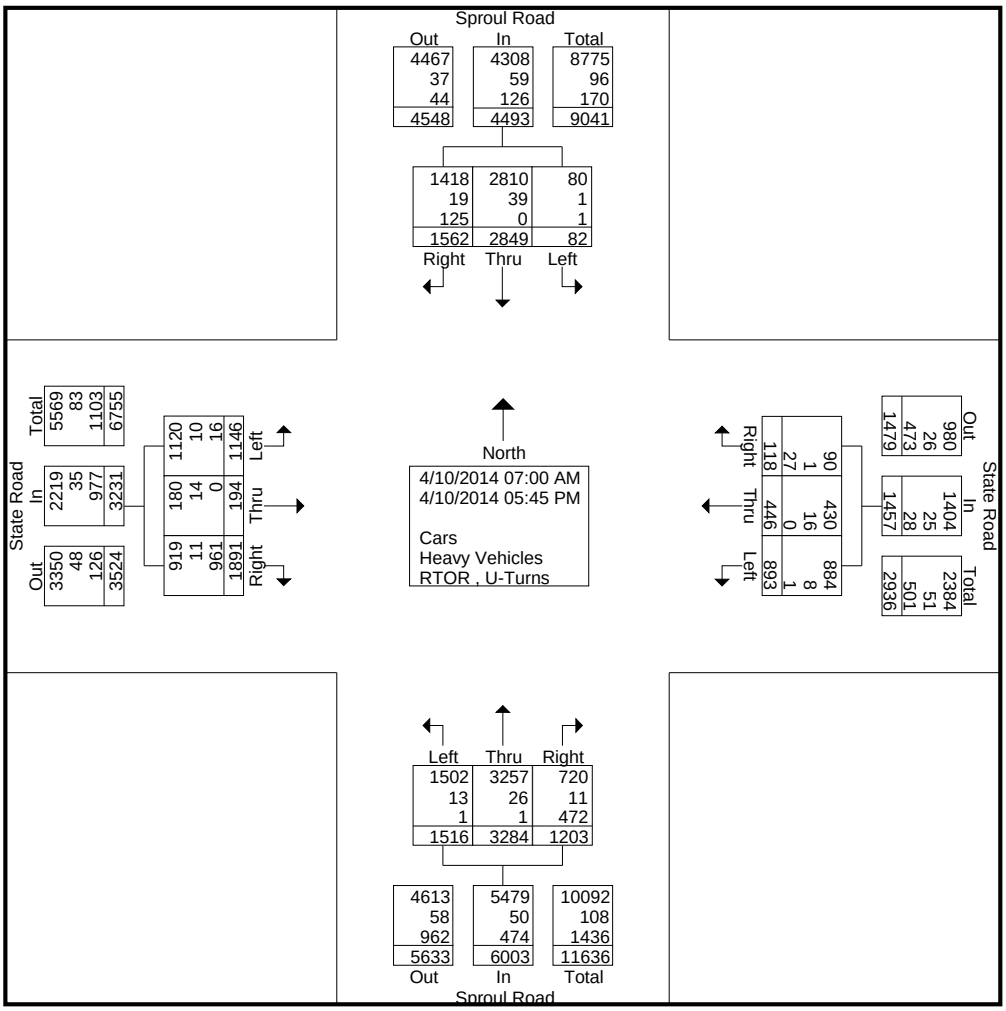
| | State Road Eastbound | | | | | State Road Westbound | | | | | Sproul Road Northbound | | | | | Sproul Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 64 | 3 | 50 | 0 | 117 | 31 | 6 | 7 | 0 | 44 | 94 | 189 | 50 | 0 | 333 | 0 | 88 | 87 | 0 | 175 | 0 | 669 | 669 |
| 07:15 AM | 71 | 2 | 49 | 0 | 122 | 32 | 8 | 3 | 0 | 43 | 108 | 281 | 77 | 0 | 466 | 3 | 109 | 105 | 0 | 217 | 0 | 848 | 848 |
| 07:30 AM | 69 | 1 | 58 | 1 | 128 | 42 | 10 | 8 | 0 | 60 | 123 | 316 | 87 | 0 | 526 | 0 | 121 | 95 | 1 | 216 | 2 | 930 | 932 |
| 07:45 AM | 55 | 4 | 85 | 1 | 144 | 43 | 19 | 13 | 0 | 75 | 120 | 260 | 75 | 1 | 455 | 1 | 136 | 97 | 0 | 234 | 2 | 908 | 910 |
| Total | 259 | 10 | 242 | 2 | 511 | 148 | 43 | 31 | 0 | 222 | 445 | 1046 | 289 | 1 | 1780 | 4 | 454 | 384 | 1 | 842 | 4 | 3355 | 3359 |
| 08:00 AM | 64 | 7 | 71 | 0 | 142 | 40 | 17 | 6 | 1 | 63 | 115 | 213 | 73 | 0 | 401 | 2 | 147 | 89 | 0 | 238 | 1 | 844 | 845 |
| 08:15 AM | 63 | 3 | 89 | 1 | 155 | 35 | 24 | 9 | 1 | 68 | 105 | 274 | 79 | 0 | 458 | 2 | 124 | 92 | 0 | 218 | 2 | 899 | 901 |
| 08:30 AM | 64 | 2 | 82 | 1 | 148 | 57 | 30 | 4 | 0 | 91 | 95 | 232 | 70 | 1 | 397 | 3 | 129 | 69 | 1 | 201 | 3 | 837 | 840 |
| 08:45 AM | 86 | 7 | 68 | 0 | 161 | 42 | 21 | 8 | 0 | 71 | 103 | 230 | 72 | 0 | 405 | 2 | 127 | 71 | 1 | 200 | 1 | 837 | 838 |
| Total | 277 | 19 | 310 | 2 | 606 | 174 | 92 | 27 | 2 | 293 | 418 | 949 | 294 | 1 | 1661 | 9 | 527 | 321 | 2 | 857 | 7 | 3417 | 3424 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | | | |
| 04:00 PM | 83 | 18 | 136 | 1 | 237 | 59 | 48 | 8 | 6 | 115 | 81 | 177 | 83 | 0 | 341 | 12 | 219 | 148 | 0 | 379 | 7 | 1072 | 1079 |
| 04:15 PM | 92 | 14 | 146 | 0 | 252 | 69 | 43 | 9 | 6 | 121 | 94 | 171 | 65 | 0 | 330 | 5 | 229 | 113 | 1 | 347 | 7 | 1050 | 1057 |
| 04:30 PM | 74 | 21 | 173 | 0 | 268 | 77 | 28 | 6 | 4 | 111 | 74 | 149 | 81 | 0 | 304 | 10 | 237 | 120 | 1 | 367 | 5 | 1050 | 1055 |
| 04:45 PM | 76 | 29 | 173 | 0 | 278 | 62 | 41 | 9 | 0 | 112 | 97 | 148 | 83 | 0 | 328 | 7 | 208 | 99 | 1 | 314 | 1 | 1032 | 1033 |
| Total | 325 | 82 | 628 | 1 | 1035 | 267 | 160 | 32 | 16 | 459 | 346 | 645 | 312 | 0 | 1303 | 34 | 893 | 480 | 3 | 1407 | 20 | 4204 | 4224 |
| 05:00 PM | 73 | 20 | 184 | 0 | 277 | 82 | 32 | 7 | 1 | 121 | 67 | 156 | 64 | 0 | 287 | 11 | 252 | 76 | 0 | 339 | 1 | 1024 | 1025 |
| 05:15 PM | 75 | 26 | 160 | 0 | 261 | 66 | 36 | 13 | 3 | 115 | 68 | 144 | 75 | 0 | 287 | 5 | 263 | 111 | 1 | 379 | 4 | 1042 | 1046 |
| 05:30 PM | 65 | 24 | 187 | 1 | 276 | 66 | 43 | 3 | 10 | 112 | 77 | 158 | 81 | 1 | 316 | 10 | 235 | 104 | 0 | 349 | 12 | 1053 | 1065 |
| 05:45 PM | 72 | 13 | 180 | 0 | 265 | 90 | 40 | 5 | 3 | 135 | 95 | 186 | 88 | 1 | 369 | 9 | 225 | 86 | 0 | 320 | 4 | 1089 | 1093 |
| Total | 285 | 83 | 711 | 1 | 1079 | 304 | 151 | 28 | 17 | 483 | 307 | 644 | 308 | 2 | 1259 | 35 | 975 | 377 | 1 | 1387 | 21 | 4208 | 4229 |
| Grand Total | 1146 | 194 | 1891 | 6 | 3231 | 893 | 446 | 118 | 35 | 1457 | 1516 | 3284 | 1203 | 4 | 6003 | 82 | 2849 | 1562 | 7 | 4493 | 52 | 15184 | 15236 |
| Apprch % | 35.5 | 6 | 58.5 | | | 61.3 | 30.6 | 8.1 | | | 25.3 | 54.7 | 20 | | | 1.8 | 63.4 | 34.8 | | | | | |
| Total % | 7.5 | 1.3 | 12.5 | | 21.3 | 5.9 | 2.9 | 0.8 | | 9.6 | 10 | 21.6 | 7.9 | | 39.5 | 0.5 | 18.8 | 10.3 | | 29.6 | 0.3 | 99.7 | |
| Cars | 1120 | 180 | 919 | | 2224 | 884 | 430 | 90 | | 1438 | 1502 | 3257 | 720 | | 5483 | 80 | 2810 | 1418 | | 4315 | 0 | 0 | 13460 |
| % Cars | 97.7 | 92.8 | 48.6 | 83.3 | 68.7 | 99 | 96.4 | 76.3 | 97.1 | 96.4 | 99.1 | 99.2 | 59.9 | 100 | 91.3 | 97.6 | 98.6 | 90.8 | 100 | 95.9 | 0 | 0 | 88.3 |
| Heavy Vehicles | 10 | 14 | 11 | | 35 | 8 | 16 | 1 | | 25 | 13 | 26 | 11 | | 50 | 1 | 39 | 19 | | 59 | 0 | 0 | 169 |
| % Heavy Vehicles | 0.9 | 7.2 | 0.6 | 0 | 1.1 | 0.9 | 3.6 | 0.8 | 0 | 1.7 | 0.9 | 0.8 | 0.9 | 0 | 0.8 | 1.2 | 1.4 | 1.2 | 0 | 1.3 | 0 | 0 | 1.1 |
| RTOR , U-Turns | 16 | 0 | 961 | | 978 | 1 | 0 | 27 | | 29 | 1 | 1 | 472 | | 474 | 1 | 0 | 125 | | 126 | 0 | 0 | 1607 |
| % RTOR , U-Turns | 1.4 | 0 | 50.8 | 16.7 | 30.2 | 0.1 | 0 | 22.9 | 2.9 | 1.9 | 0.1 | 0 | 39.2 | 0 | 7.9 | 1.2 | 0 | 8 | 0 | 2.8 | 0 | 0 | 10.5 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/State Rd
Date: Thursday, April 10, 2014
Counter: ET / JT

File Name : 13_MS 0410 15_Sproul & SR1
Site Code : 15
Start Date : 4/10/2014
Page No : 2



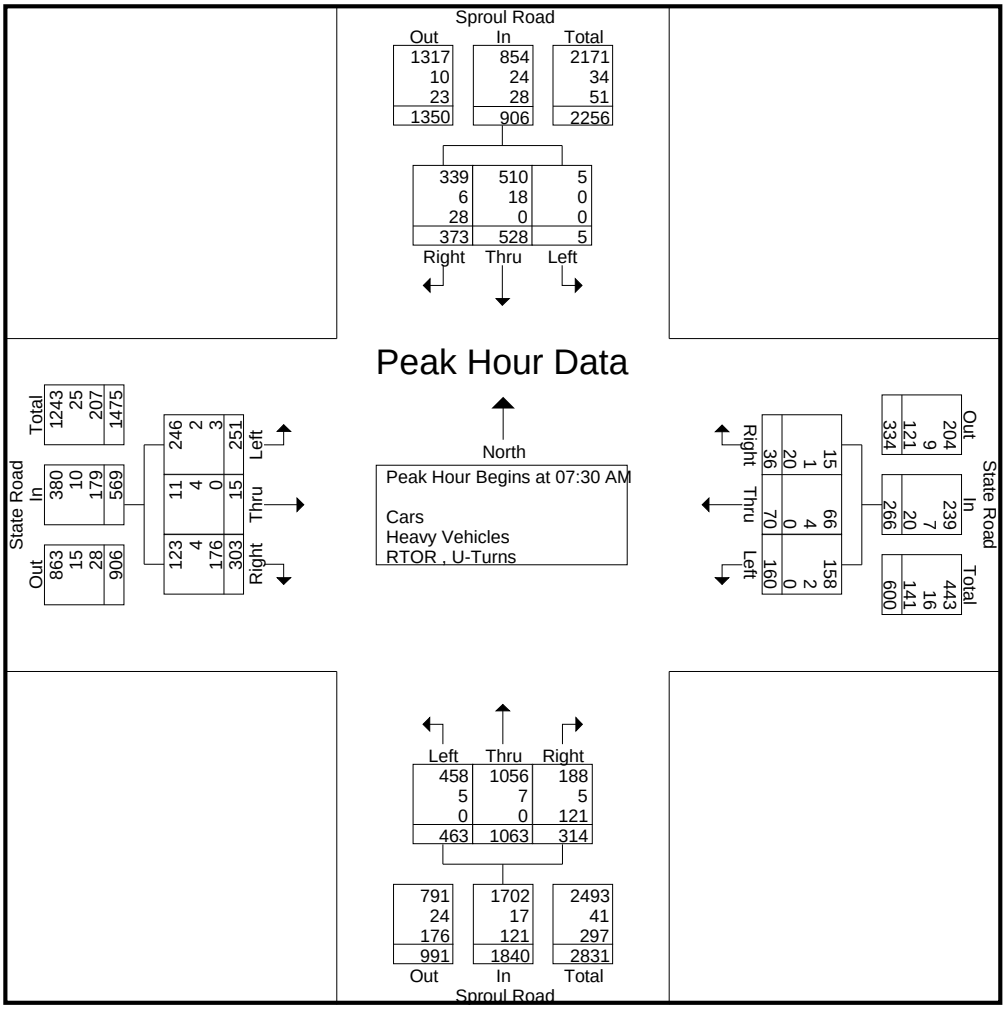
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/State Rd
Date: Thursday, April 10, 2014
Counter: ET / JT

File Name : 13_MS 0410 15_Sproul & SR1
Site Code : 15
Start Date : 4/10/2014
Page No : 3

| | State Road Eastbound | | | | State Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | **69** | 1 | 58 | 128 | 42 | 10 | 8 | 60 | **123** | **316** | **87** | **526** | 0 | 121 | 95 | 216 | **930** |
| 07:45 AM | 55 | 4 | 85 | 144 | **43** | 19 | **13** | **75** | 120 | 260 | 75 | 455 | 1 | 136 | **97** | 234 | 908 |
| 08:00 AM | 64 | **7** | 71 | 142 | 40 | 17 | 6 | 63 | 115 | 213 | 73 | 401 | **2** | **147** | 89 | **238** | 844 |
| 08:15 AM | 63 | 3 | **89** | **155** | 35 | **24** | 9 | 68 | 105 | 274 | 79 | 458 | 2 | 124 | 92 | 218 | 899 |
| Total Volume | 251 | 15 | 303 | 569 | 160 | 70 | 36 | 266 | 463 | 1063 | 314 | 1840 | 5 | 528 | 373 | 906 | 3581 |
| % App. Total | 44.1 | 2.6 | 53.3 | | 60.2 | 26.3 | 13.5 | | 25.2 | 57.8 | 17.1 | | 0.6 | 58.3 | 41.2 | | |
| PHF | .909 | .536 | .851 | .918 | .930 | .729 | .692 | .887 | .941 | .841 | .902 | .875 | .625 | .898 | .961 | .952 | .963 |
| Cars | 246 | 11 | 123 | 380 | 158 | 66 | 15 | 239 | 458 | 1056 | 188 | 1702 | 5 | 510 | 339 | 854 | 3175 |
| % Cars | 98.0 | 73.3 | 40.6 | 66.8 | 98.8 | 94.3 | 41.7 | 89.8 | 98.9 | 99.3 | 59.9 | 92.5 | 100 | 96.6 | 90.9 | 94.3 | 88.7 |
| Heavy Vehicles | 2 | 4 | 4 | 10 | 2 | 4 | 1 | 7 | 5 | 7 | 5 | 17 | 0 | 18 | 6 | 24 | 58 |
| % Heavy Vehicles | 0.8 | 26.7 | 1.3 | 1.8 | 1.3 | 5.7 | 2.8 | 2.6 | 1.1 | 0.7 | 1.6 | 0.9 | 0 | 3.4 | 1.6 | 2.6 | 1.6 |
| RTOR , U-Turns | 3 | 0 | 176 | 179 | 0 | 0 | 20 | 20 | 0 | 0 | 121 | 121 | 0 | 0 | 28 | 28 | 348 |
| % RTOR , U-Turns | 1.2 | 0 | 58.1 | 31.5 | 0 | 0 | 55.6 | 7.5 | 0 | 0 | 38.5 | 6.6 | 0 | 0 | 7.5 | 3.1 | 9.7 |



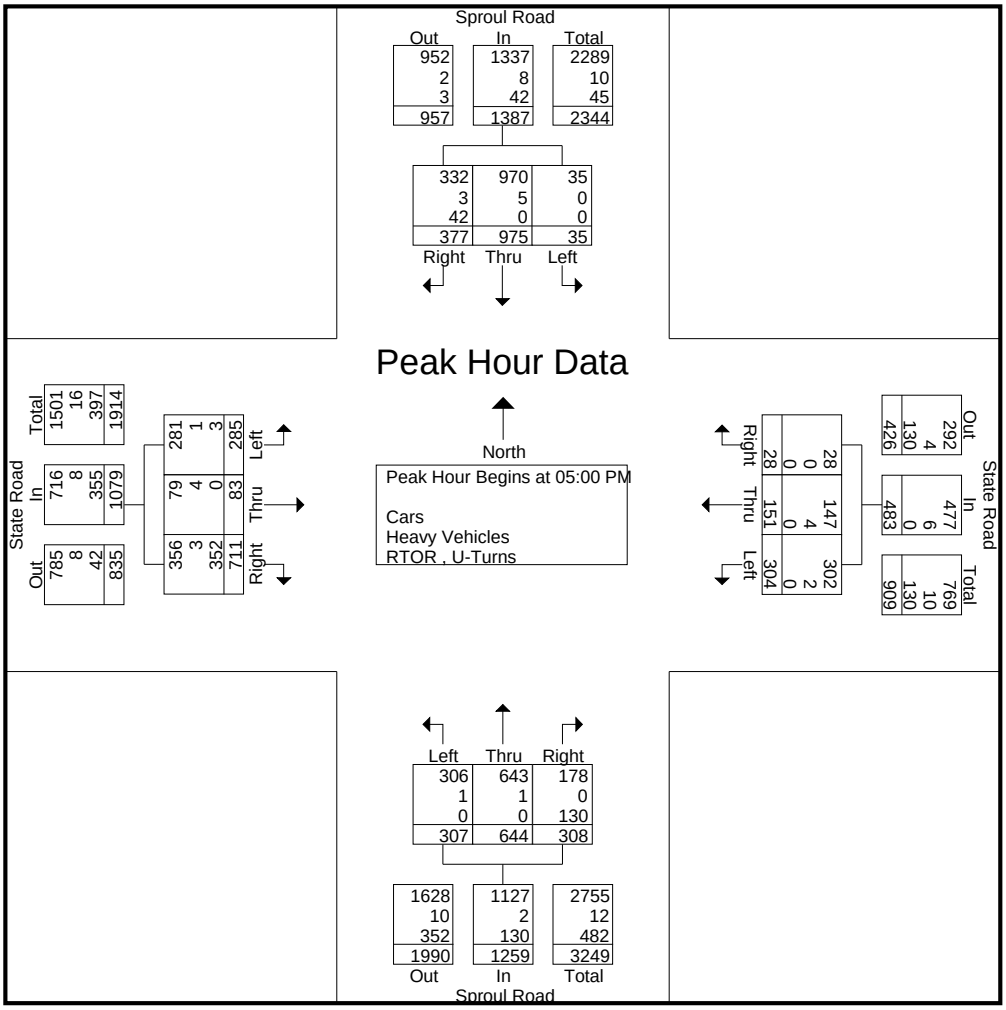
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Sproul Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Sproul Rd/State Rd
Date: Thursday, April 10, 2014
Counter: ET / JT

File Name : 13_MS 0410 15_Sproul & SR1
Site Code : 15
Start Date : 4/10/2014
Page No : 4

| | State Road Eastbound | | | | State Road Westbound | | | | Sproul Road Northbound | | | | Sproul Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 73 | 20 | 184 | **277** | 82 | 32 | 7 | 121 | 67 | 156 | 64 | 287 | **11** | 252 | 76 | 339 | 1024 |
| 05:15 PM | **75** | **26** | 160 | 261 | 66 | 36 | **13** | 115 | 68 | 144 | 75 | 287 | 5 | **263** | **111** | **379** | 1042 |
| 05:30 PM | 65 | 24 | **187** | 276 | 66 | **43** | 3 | 112 | 77 | 158 | 81 | 316 | 10 | 235 | 104 | 349 | 1053 |
| 05:45 PM | 72 | 13 | 180 | 265 | **90** | 40 | 5 | **135** | **95** | **186** | **88** | **369** | 9 | 225 | 86 | 320 | **1089** |
| Total Volume | 285 | 83 | 711 | 1079 | 304 | 151 | 28 | 483 | 307 | 644 | 308 | 1259 | 35 | 975 | 377 | 1387 | 4208 |
| % App. Total | 26.4 | 7.7 | 65.9 | | 62.9 | 31.3 | 5.8 | | 24.4 | 51.2 | 24.5 | | 2.5 | 70.3 | 27.2 | | |
| PHF | .950 | .798 | .951 | .974 | .844 | .878 | .538 | .894 | .808 | .866 | .875 | .853 | .795 | .927 | .849 | .915 | .966 |
| Cars | 281 | 79 | 356 | 716 | 302 | 147 | 28 | 477 | 306 | 643 | 178 | 1127 | 35 | 970 | 332 | 1337 | 3657 |
| % Cars | 98.6 | 95.2 | 50.1 | 66.4 | 99.3 | 97.4 | 100 | 98.8 | 99.7 | 99.8 | 57.8 | 89.5 | 100 | 99.5 | 88.1 | 96.4 | 86.9 |
| Heavy Vehicles | 1 | 4 | 3 | 8 | 2 | 4 | 0 | 6 | 1 | 1 | 0 | 2 | 0 | 5 | 3 | 8 | 24 |
| % Heavy Vehicles | 0.4 | 4.8 | 0.4 | 0.7 | 0.7 | 2.6 | 0 | 1.2 | 0.3 | 0.2 | 0 | 0.2 | 0 | 0.5 | 0.8 | 0.6 | 0.6 |
| RTOR , U-Turns | 3 | 0 | 352 | 355 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 130 | 0 | 0 | 42 | 42 | 527 |
| % RTOR , U-Turns | 1.1 | 0 | 49.5 | 32.9 | 0 | 0 | 0 | 0 | 0 | 0 | 42.2 | 10.3 | 0 | 0 | 11.1 | 3.0 | 12.5 |



# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 1/Rte 320
Date: Saturday, September 6, 2014
Counter: ET/JT/CT/RZ

File Name : Del Co 07 08 Sat
Site Code : 07 08
Start Date : 9/6/2014
Page No : 1

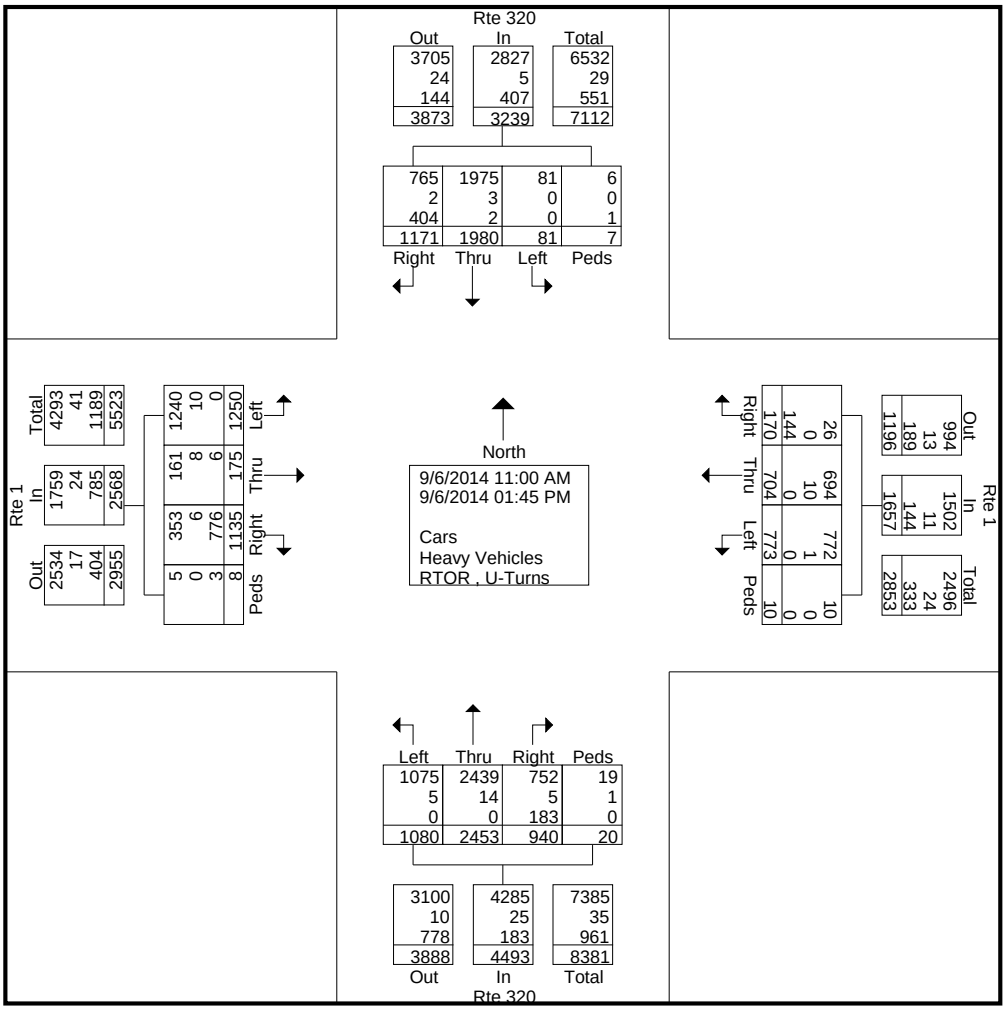
Groups Printed- Cars - Heavy Vehicles - Turns

| | Rte 320 Southbound | | | | | Rte 1 Westbound | | | | | Rte 320 Northbound | | | | | Rte 1 Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 11:00 AM | 91 | 163 | 11 | 3 | 268 | 14 | 62 | 54 | 2 | 132 | 63 | 231 | 84 | 0 | 378 | 72 | 18 | 116 | 2 | 208 | 986 |
| 11:15 AM | 107 | 145 | 0 | 0 | 252 | 13 | 50 | 61 | 0 | 124 | 82 | 188 | 86 | 1 | 357 | 95 | 18 | 126 | 0 | 239 | 972 |
| 11:30 AM | 67 | 152 | 3 | 1 | 223 | 15 | 63 | 58 | 0 | 136 | 66 | 207 | 90 | 0 | 363 | 50 | 8 | 89 | 0 | 147 | 869 |
| 11:45 AM | 105 | 192 | 6 | 0 | 303 | 12 | 46 | 76 | 1 | 135 | 106 | 155 | 72 | 10 | 343 | 111 | 20 | 102 | 0 | 233 | 1014 |
| Total | 370 | 652 | 20 | 4 | 1046 | 54 | 221 | 249 | 3 | 527 | 317 | 781 | 332 | 11 | 1441 | 328 | 64 | 433 | 2 | 827 | 3841 |
| 12:00 PM | 102 | 153 | 7 | 0 | 262 | 15 | 70 | 73 | 0 | 158 | 59 | 218 | 111 | 0 | 388 | 90 | 14 | 110 | 0 | 214 | 1022 |
| 12:15 PM | 95 | 185 | 7 | 0 | 287 | 15 | 56 | 63 | 1 | 135 | 88 | 197 | 82 | 8 | 375 | 103 | 18 | 95 | 0 | 216 | 1013 |
| 12:30 PM | 99 | 166 | 5 | 0 | 270 | 12 | 53 | 59 | 3 | 127 | 62 | 189 | 88 | 0 | 339 | 103 | 19 | 130 | 1 | 253 | 989 |
| 12:45 PM | 112 | 143 | 9 | 0 | 264 | 15 | 54 | 71 | 1 | 141 | 93 | 239 | 97 | 0 | 429 | 129 | 11 | 112 | 0 | 252 | 1086 |
| Total | 408 | 647 | 28 | 0 | 1083 | 57 | 233 | 266 | 5 | 561 | 302 | 843 | 378 | 8 | 1531 | 425 | 62 | 447 | 1 | 935 | 4110 |
| 01:00 PM | 99 | 196 | 6 | 0 | 301 | 13 | 63 | 62 | 1 | 139 | 68 | 184 | 91 | 1 | 344 | 111 | 16 | 109 | 0 | 236 | 1020 |
| 01:15 PM | 115 | 179 | 8 | 1 | 303 | 10 | 69 | 76 | 1 | 156 | 90 | 227 | 105 | 0 | 422 | 110 | 11 | 101 | 2 | 224 | 1105 |
| 01:30 PM | 100 | 181 | 12 | 1 | 294 | 21 | 53 | 58 | 0 | 132 | 88 | 188 | 80 | 0 | 356 | 73 | 12 | 110 | 3 | 198 | 980 |
| 01:45 PM | 79 | 125 | 7 | 1 | 212 | 15 | 65 | 62 | 0 | 142 | 75 | 230 | 94 | 0 | 399 | 88 | 10 | 50 | 0 | 148 | 901 |
| Total | 393 | 681 | 33 | 3 | 1110 | 59 | 250 | 258 | 2 | 569 | 321 | 829 | 370 | 1 | 1521 | 382 | 49 | 370 | 5 | 806 | 4006 |
| Grand Total | 1171 | 1980 | 81 | 7 | 3239 | 170 | 704 | 773 | 10 | 1657 | 940 | 2453 | 1080 | 20 | 4493 | 1135 | 175 | 1250 | 8 | 2568 | 11957 |
| Apprch % | 36.2 | 61.1 | 2.5 | 0.2 | | 10.3 | 42.5 | 46.7 | 0.6 | | 20.9 | 54.6 | 24 | 0.4 | | 44.2 | 6.8 | 48.7 | 0.3 | | |
| Total % | 9.8 | 16.6 | 0.7 | 0.1 | 27.1 | 1.4 | 5.9 | 6.5 | 0.1 | 13.9 | 7.9 | 20.5 | 9 | 0.2 | 37.6 | 9.5 | 1.5 | 10.5 | 0.1 | 21.5 | |
| Cars | 765 | 1975 | 81 | 6 | 2827 | 26 | 694 | 772 | 10 | 1502 | 752 | 2439 | 1075 | 19 | 4285 | 353 | 161 | 1240 | 5 | 1759 | 10373 |
| % Cars | 65.3 | 99.7 | 100 | 85.7 | 87.3 | 15.3 | 98.6 | 99.9 | 100 | 90.6 | 80 | 99.4 | 99.5 | 95 | 95.4 | 31.1 | 92 | 99.2 | 62.5 | 68.5 | 86.8 |
| Heavy Vehicles | 2 | 3 | 0 | 0 | 5 | 0 | 10 | 1 | 0 | 11 | 5 | 14 | 5 | 1 | 25 | 6 | 8 | 10 | 0 | 24 | 65 |
| % Heavy Vehicles | 0.2 | 0.2 | 0 | 0 | 0.2 | 0 | 1.4 | 0.1 | 0 | 0.7 | 0.5 | 0.6 | 0.5 | 5 | 0.6 | 0.5 | 4.6 | 0.8 | 0 | 0.9 | 0.5 |
| RTOR , U-Turns | 404 | 2 | 0 | 1 | 407 | 144 | 0 | 0 | 0 | 144 | 183 | 0 | 0 | 0 | 183 | 776 | 6 | 0 | 3 | 785 | 1519 |
| % RTOR , U-Turns | 34.5 | 0.1 | 0 | 14.3 | 12.6 | 84.7 | 0 | 0 | 0 | 8.7 | 19.5 | 0 | 0 | 0 | 4.1 | 68.4 | 3.4 | 0 | 37.5 | 30.6 | 12.7 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 1/Rte 320
Date: Saturday, September 6, 2014
Counter: ET/JT/CT/RZ

File Name : Del Co 07 08 Sat
Site Code : 07 08
Start Date : 9/6/2014
Page No : 2

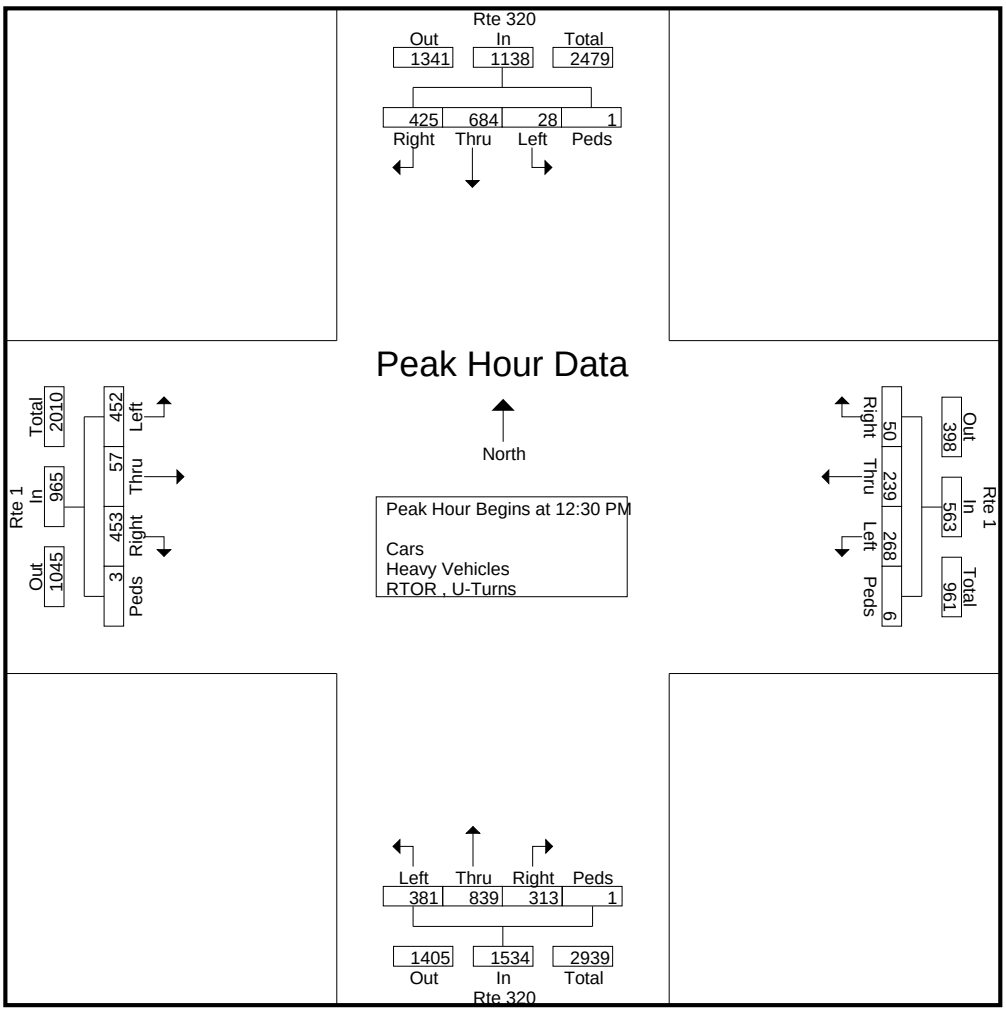


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Rte 1/Rte 320
Date: Saturday, September 6, 2014
Counter: ET/JT/CT/RZ

File Name : Del Co 07 08 Sat
Site Code : 07 08
Start Date : 9/6/2014
Page No : 4

| | Rte 320 Southbound | | | | | Rte 1 Westbound | | | | | Rte 320 Northbound | | | | | Rte 1 Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 12:30 PM | 99 | 166 | 5 | 0 | 270 | 12 | 53 | 59 | **3** | 127 | 62 | 189 | 88 | 0 | 339 | 103 | **19** | **130** | 1 | **253** | 989 |
| 12:45 PM | 112 | 143 | **9** | 0 | 264 | **15** | 54 | 71 | 1 | 141 | **93** | **239** | 97 | 0 | **429** | **129** | 11 | 112 | 0 | 252 | 1086 |
| 01:00 PM | 99 | **196** | 6 | 0 | 301 | 13 | 63 | 62 | 1 | 139 | 68 | 184 | 91 | **1** | 344 | 111 | 16 | 109 | 0 | 236 | 1020 |
| 01:15 PM | **115** | 179 | 8 | **1** | **303** | 10 | **69** | **76** | 1 | **156** | 90 | 227 | **105** | 0 | 422 | 110 | 11 | 101 | **2** | 224 | **1105** |
| Total Volume | 425 | 684 | 28 | 1 | 1138 | 50 | 239 | 268 | 6 | 563 | 313 | 839 | 381 | 1 | 1534 | 453 | 57 | 452 | 3 | 965 | 4200 |
| % App. Total | 37.3 | 60.1 | 2.5 | 0.1 | | 8.9 | 42.5 | 47.6 | 1.1 | | 20.4 | 54.7 | 24.8 | 0.1 | | 46.9 | 5.9 | 46.8 | 0.3 | | |
| PHF | .924 | .872 | .778 | .250 | .939 | .833 | .866 | .882 | .500 | .902 | .841 | .878 | .907 | .250 | .894 | .878 | .750 | .869 | .375 | .954 | .950 |



## *SPRINGFIELD ROAD & STATE ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Springfield Rd/State Rd
Date: Thursday, April 10, 2014
Counter: MIO

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 1

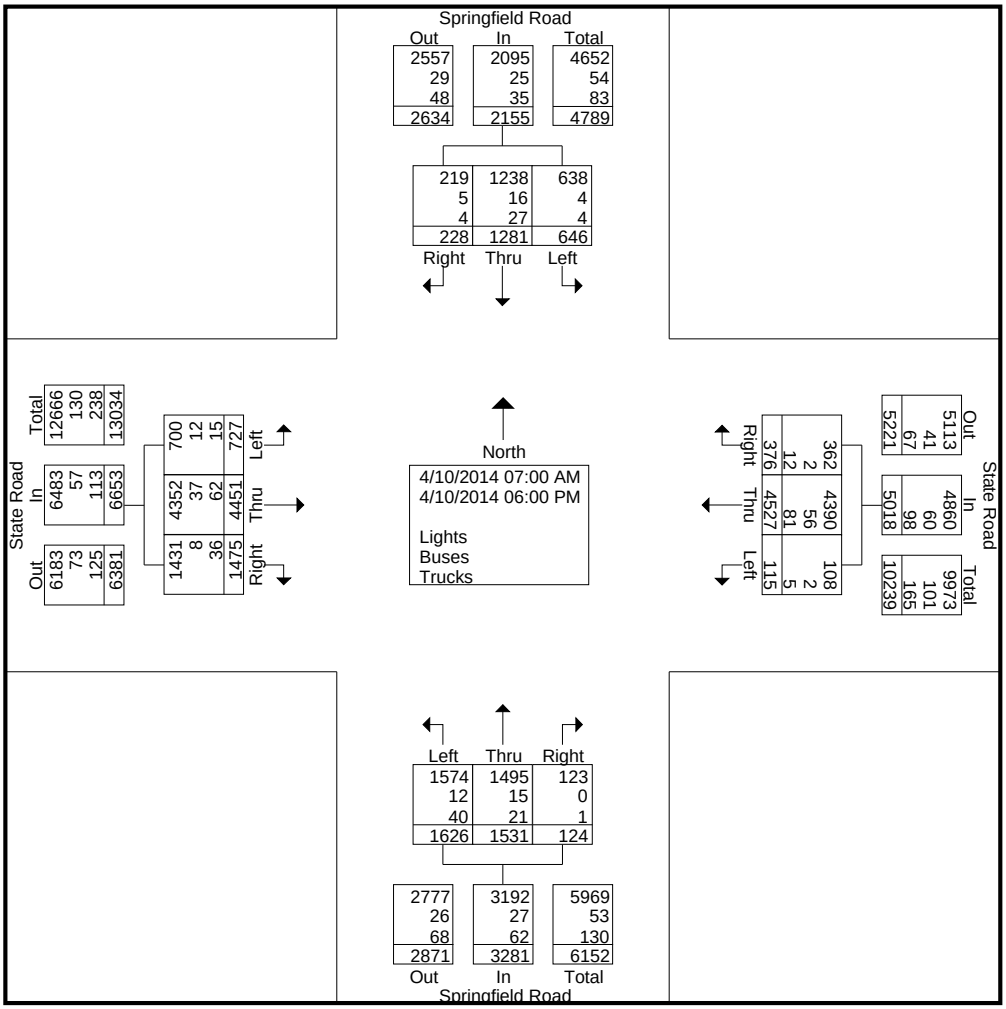
Groups Printed- Lights - Buses - Trucks

| | State Road Eastbound | | | | | State Road Westbound | | | | | Springfield Road Northbound | | | | | Springfield Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 32 | 236 | 75 | 0 | 343 | 3 | 304 | 38 | 0 | 345 | 121 | 101 | 9 | 0 | 231 | 22 | 61 | 11 | 0 | 94 | 0 | 1013 | 1013 |
| 07:15 AM | 53 | 265 | 54 | 0 | 372 | 4 | 296 | 31 | 0 | 331 | 134 | 128 | 4 | 0 | 266 | 28 | 57 | 22 | 0 | 107 | 0 | 1076 | 1076 |
| 07:30 AM | 58 | 224 | 87 | 0 | 369 | 1 | 278 | 27 | 0 | 306 | 104 | 138 | 3 | 0 | 245 | 23 | 85 | 16 | 0 | 124 | 0 | 1044 | 1044 |
| 07:45 AM | 63 | 253 | 78 | 0 | 394 | 4 | 275 | 25 | 0 | 304 | 106 | 112 | 12 | 0 | 230 | 24 | 67 | 26 | 0 | 117 | 0 | 1045 | 1045 |
| Total | 206 | 978 | 294 | 0 | 1478 | 12 | 1153 | 121 | 0 | 1286 | 465 | 479 | 28 | 0 | 972 | 97 | 270 | 75 | 0 | 442 | 0 | 4178 | 4178 |
| 08:00 AM | 38 | 267 | 54 | 0 | 359 | 3 | 299 | 17 | 0 | 319 | 125 | 98 | 4 | 0 | 227 | 19 | 50 | 17 | 0 | 86 | 0 | 991 | 991 |
| 08:15 AM | 33 | 228 | 57 | 0 | 318 | 5 | 295 | 26 | 0 | 326 | 118 | 115 | 6 | 0 | 239 | 23 | 65 | 16 | 0 | 104 | 0 | 987 | 987 |
| 08:30 AM | 34 | 220 | 63 | 0 | 317 | 2 | 252 | 25 | 0 | 279 | 121 | 122 | 7 | 0 | 250 | 27 | 61 | 18 | 0 | 106 | 0 | 952 | 952 |
| 08:45 AM | 42 | 211 | 60 | 0 | 313 | 8 | 284 | 28 | 0 | 320 | 100 | 94 | 8 | 0 | 202 | 27 | 83 | 12 | 0 | 122 | 0 | 957 | 957 |
| Total | 147 | 926 | 234 | 0 | 1307 | 18 | 1130 | 96 | 0 | 1244 | 464 | 429 | 25 | 0 | 918 | 96 | 259 | 63 | 0 | 418 | 0 | 3887 | 3887 |
| 04:00 PM | 50 | 274 | 107 | 0 | 431 | 10 | 288 | 26 | 0 | 324 | 85 | 67 | 8 | 0 | 160 | 57 | 95 | 4 | 0 | 156 | 0 | 1071 | 1071 |
| 04:15 PM | 41 | 323 | 90 | 0 | 454 | 11 | 285 | 33 | 0 | 329 | 86 | 69 | 7 | 0 | 162 | 69 | 98 | 7 | 0 | 174 | 0 | 1119 | 1119 |
| 04:30 PM | 48 | 331 | 124 | 0 | 503 | 18 | 271 | 12 | 0 | 301 | 84 | 75 | 8 | 0 | 167 | 60 | 93 | 14 | 0 | 167 | 0 | 1138 | 1138 |
| 04:45 PM | 59 | 284 | 113 | 0 | 456 | 10 | 257 | 16 | 0 | 283 | 93 | 75 | 7 | 0 | 175 | 51 | 95 | 6 | 0 | 152 | 0 | 1066 | 1066 |
| Total | 198 | 1212 | 434 | 0 | 1844 | 49 | 1101 | 87 | 0 | 1237 | 348 | 286 | 30 | 0 | 664 | 237 | 381 | 31 | 0 | 649 | 0 | 4394 | 4394 |
| 05:00 PM | 52 | 324 | 141 | 0 | 517 | 10 | 274 | 18 | 0 | 302 | 77 | 81 | 8 | 0 | 166 | 51 | 103 | 17 | 0 | 171 | 0 | 1156 | 1156 |
| 05:15 PM | 48 | 347 | 131 | 0 | 526 | 7 | 284 | 14 | 0 | 305 | 78 | 85 | 10 | 0 | 173 | 33 | 86 | 17 | 0 | 136 | 0 | 1140 | 1140 |
| 05:30 PM | 34 | 338 | 126 | 0 | 498 | 6 | 302 | 14 | 0 | 322 | 93 | 85 | 9 | 0 | 187 | 68 | 88 | 16 | 0 | 172 | 0 | 1179 | 1179 |
| 05:45 PM | 42 | 326 | 115 | 0 | 483 | 13 | 283 | 26 | 0 | 322 | 100 | 86 | 14 | 0 | 200 | 63 | 94 | 9 | 0 | 166 | 0 | 1171 | 1171 |
| Total | 176 | 1335 | 513 | 0 | 2024 | 36 | 1143 | 72 | 0 | 1251 | 348 | 337 | 41 | 0 | 726 | 215 | 371 | 59 | 0 | 645 | 0 | 4646 | 4646 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 2 |
| Grand Total | 727 | 4451 | 1475 | 0 | 6653 | 115 | 4527 | 376 | 0 | 5018 | 1626 | 1531 | 124 | 0 | 3281 | 646 | 1281 | 228 | 0 | 2155 | 0 | 17107 | 17107 |
| Apprch % | 10.9 | 66.9 | 22.2 | | | 2.3 | 90.2 | 7.5 | | | 49.6 | 46.7 | 3.8 | | | 30 | 59.4 | 10.6 | | | | | |
| Total % | 4.2 | 26 | 8.6 | | 38.9 | 0.7 | 26.5 | 2.2 | | 29.3 | 9.5 | 8.9 | 0.7 | | 19.2 | 3.8 | 7.5 | 1.3 | | 12.6 | 0 | 100 | |
| Lights | 700 | 4352 | 1431 | | 6483 | 108 | 4390 | 362 | | 4860 | 1574 | 1495 | 123 | | 3192 | 638 | 1238 | 219 | | 2095 | 0 | 0 | 16630 |
| % Lights | 96.3 | 97.8 | 97 | 0 | 97.4 | 93.9 | 97 | 96.3 | 0 | 96.9 | 96.8 | 97.6 | 99.2 | 0 | 97.3 | 98.8 | 96.6 | 96.1 | 0 | 97.2 | 0 | 0 | 97.2 |
| Buses | 12 | 37 | 8 | | 57 | 2 | 56 | 2 | | 60 | 12 | 15 | 0 | | 27 | 4 | 16 | 5 | | 25 | 0 | 0 | 169 |
| % Buses | 1.7 | 0.8 | 0.5 | 0 | 0.9 | 1.7 | 1.2 | 0.5 | 0 | 1.2 | 0.7 | 1 | 0 | 0 | 0.8 | 0.6 | 1.2 | 2.2 | 0 | 1.2 | 0 | 0 | 1 |
| Trucks | 15 | 62 | 36 | | 113 | 5 | 81 | 12 | | 98 | 40 | 21 | 1 | | 62 | 4 | 27 | 4 | | 35 | 0 | 0 | 308 |
| % Trucks | 2.1 | 1.4 | 2.4 | 0 | 1.7 | 4.3 | 1.8 | 3.2 | 0 | 2 | 2.5 | 1.4 | 0.8 | 0 | 1.9 | 0.6 | 2.1 | 1.8 | 0 | 1.6 | 0 | 0 | 1.8 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 2

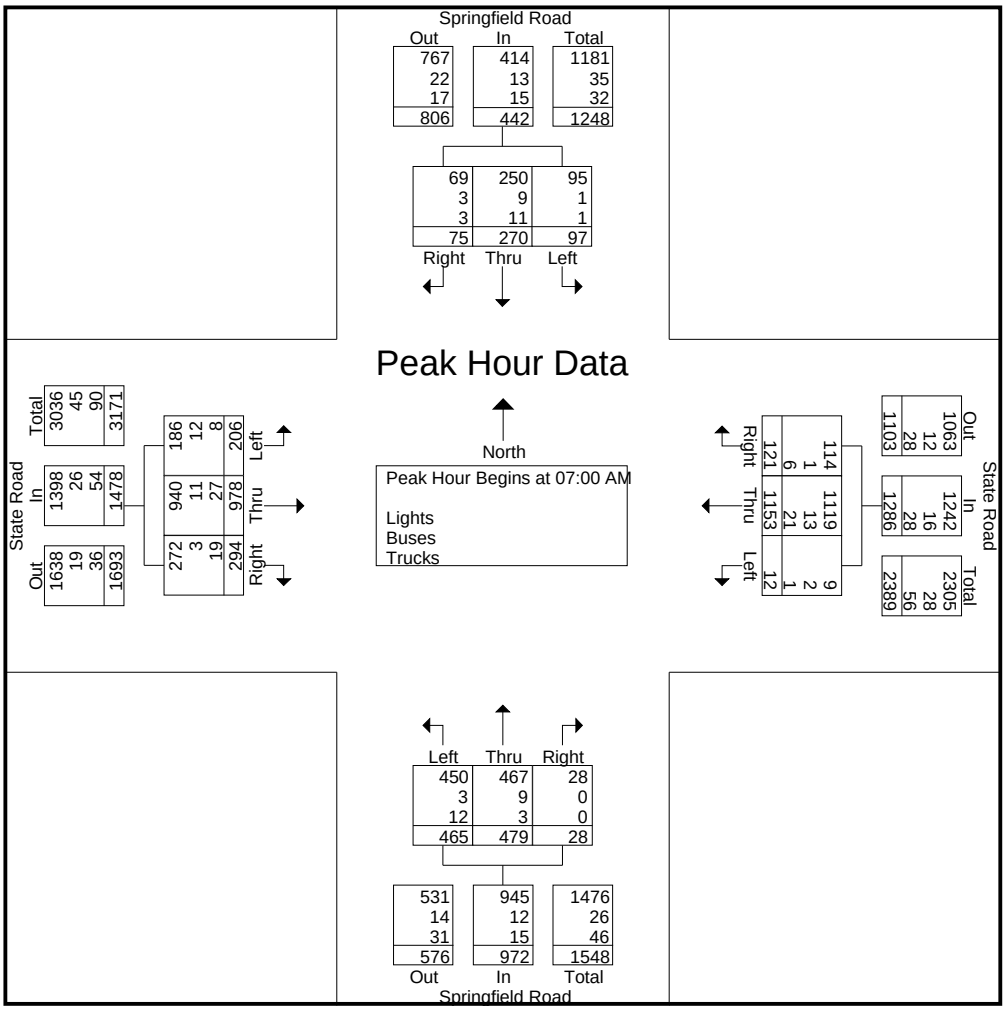


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 3

| | State Road Eastbound | | | | State Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 32 | 236 | 75 | 343 | 3 | **304** | **38** | **345** | 121 | 101 | 9 | 231 | 22 | 61 | 11 | 94 | 1013 |
| 07:15 AM | 53 | **265** | 54 | 372 | **4** | 296 | 31 | 331 | **134** | 128 | 4 | **266** | **28** | 57 | 22 | 107 | **1076** |
| 07:30 AM | 58 | 224 | **87** | 369 | 1 | 278 | 27 | 306 | 104 | **138** | 3 | 245 | 23 | **85** | 16 | **124** | 1044 |
| 07:45 AM | **63** | 253 | 78 | **394** | 4 | 275 | 25 | 304 | 106 | 112 | **12** | 230 | 24 | 67 | **26** | 117 | 1045 |
| Total Volume | 206 | 978 | 294 | 1478 | 12 | 1153 | 121 | 1286 | 465 | 479 | 28 | 972 | 97 | 270 | 75 | 442 | 4178 |
| % App. Total | 13.9 | 66.2 | 19.9 | | 0.9 | 89.7 | 9.4 | | 47.8 | 49.3 | 2.9 | | 21.9 | 61.1 | 17 | | |
| PHF | .817 | .923 | .845 | .938 | .750 | .948 | .796 | .932 | .868 | .868 | .583 | .914 | .866 | .794 | .721 | .891 | .971 |
| Lights | 186 | 940 | 272 | 1398 | 9 | 1119 | 114 | 1242 | 450 | 467 | 28 | 945 | 95 | 250 | 69 | 414 | 3999 |
| % Lights | 90.3 | 96.1 | 92.5 | 94.6 | 75.0 | 97.1 | 94.2 | 96.6 | 96.8 | 97.5 | 100 | 97.2 | 97.9 | 92.6 | 92.0 | 93.7 | 95.7 |
| Buses | 12 | 11 | 3 | 26 | 2 | 13 | 1 | 16 | 3 | 9 | 0 | 12 | 1 | 9 | 3 | 13 | 67 |
| % Buses | 5.8 | 1.1 | 1.0 | 1.8 | 16.7 | 1.1 | 0.8 | 1.2 | 0.6 | 1.9 | 0 | 1.2 | 1.0 | 3.3 | 4.0 | 2.9 | 1.6 |
| Trucks | 8 | 27 | 19 | 54 | 1 | 21 | 6 | 28 | 12 | 3 | 0 | 15 | 1 | 11 | 3 | 15 | 112 |
| % Trucks | 3.9 | 2.8 | 6.5 | 3.7 | 8.3 | 1.8 | 5.0 | 2.2 | 2.6 | 0.6 | 0 | 1.5 | 1.0 | 4.1 | 4.0 | 3.4 | 2.7 |

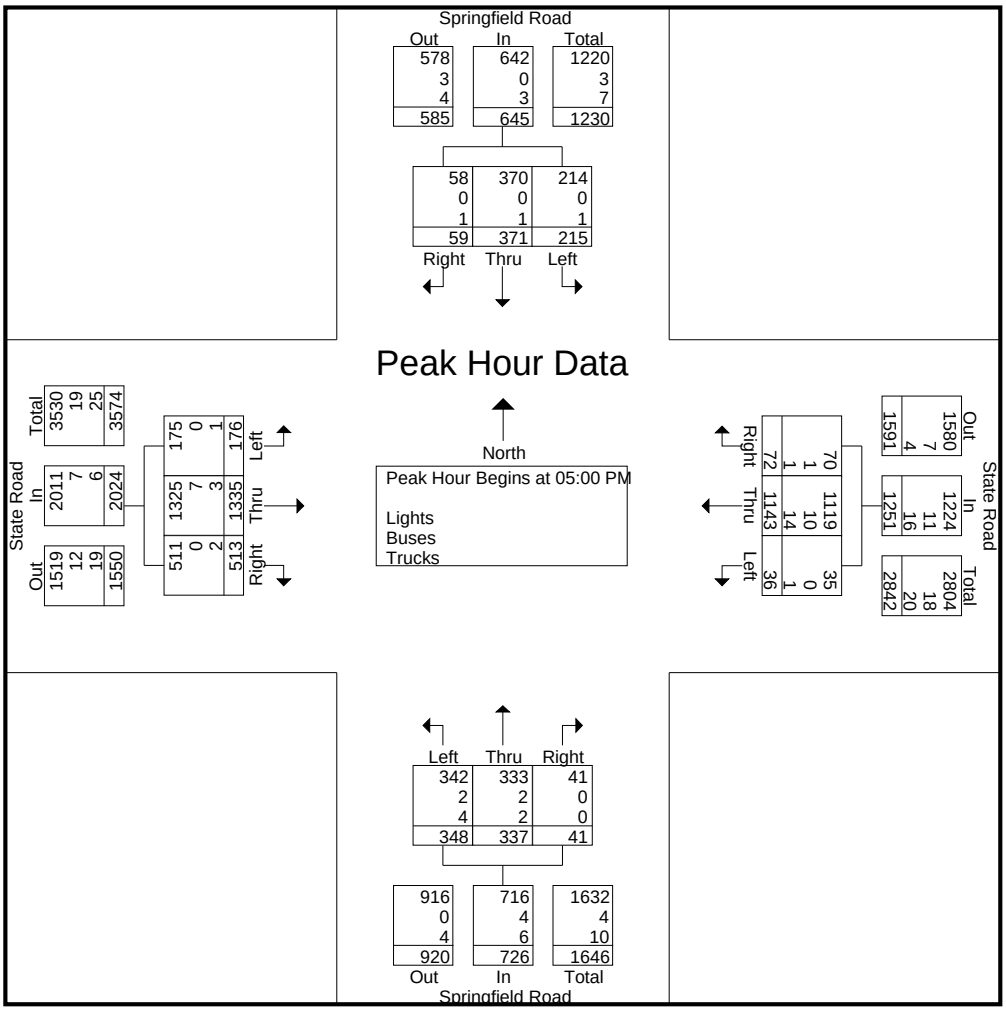


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 4

| | State Road Eastbound | | | | State Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | **52** | 324 | **141** | 517 | 10 | 274 | 18 | 302 | 77 | 81 | 8 | 166 | 51 | **103** | **17** | 171 | 1156 |
| 05:15 PM | 48 | **347** | 131 | **526** | 7 | 284 | 14 | 305 | 78 | 85 | 10 | 173 | 33 | 86 | 17 | 136 | 1140 |
| 05:30 PM | 34 | 338 | 126 | 498 | 6 | **302** | 14 | **322** | 93 | 85 | 9 | 187 | **68** | 88 | 16 | **172** | **1179** |
| 05:45 PM | 42 | 326 | 115 | 483 | **13** | 283 | **26** | 322 | **100** | **86** | **14** | **200** | 63 | 94 | 9 | 166 | 1171 |
| Total Volume | 176 | 1335 | 513 | 2024 | 36 | 1143 | 72 | 1251 | 348 | 337 | 41 | 726 | 215 | 371 | 59 | 645 | 4646 |
| % App. Total | 8.7 | 66 | 25.3 | | 2.9 | 91.4 | 5.8 | | 47.9 | 46.4 | 5.6 | | 33.3 | 57.5 | 9.1 | | |
| PHF | .846 | .962 | .910 | .962 | .692 | .946 | .692 | .971 | .870 | .980 | .732 | .908 | .790 | .900 | .868 | .938 | .985 |
| Lights | 175 | 1325 | 511 | 2011 | 35 | 1119 | 70 | 1224 | 342 | 333 | 41 | 716 | 214 | 370 | 58 | 642 | 4593 |
| % Lights | 99.4 | 99.3 | 99.6 | 99.4 | 97.2 | 97.9 | 97.2 | 97.8 | 98.3 | 98.8 | 100 | 98.6 | 99.5 | 99.7 | 98.3 | 99.5 | 98.9 |
| Buses | 0 | 7 | 0 | 7 | 0 | 10 | 1 | 11 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 22 |
| % Buses | 0 | 0.5 | 0 | 0.3 | 0 | 0.9 | 1.4 | 0.9 | 0.6 | 0.6 | 0 | 0.6 | 0 | 0 | 0 | 0 | 0.5 |
| Trucks | 1 | 3 | 2 | 6 | 1 | 14 | 1 | 16 | 4 | 2 | 0 | 6 | 1 | 1 | 1 | 3 | 31 |
| % Trucks | 0.6 | 0.2 | 0.4 | 0.3 | 2.8 | 1.2 | 1.4 | 1.3 | 1.1 | 0.6 | 0 | 0.8 | 0.5 | 0.3 | 1.7 | 0.5 | 0.7 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Springfield Rd/State Rd
Date: Thursday, April 10, 2014
Counter: MIO

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 1

Groups Printed- Pedestrians

| | State Road Eastbound | | | | | State Road Westbound | | | | | Springfield Road Northbound | | | | | Springfield Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

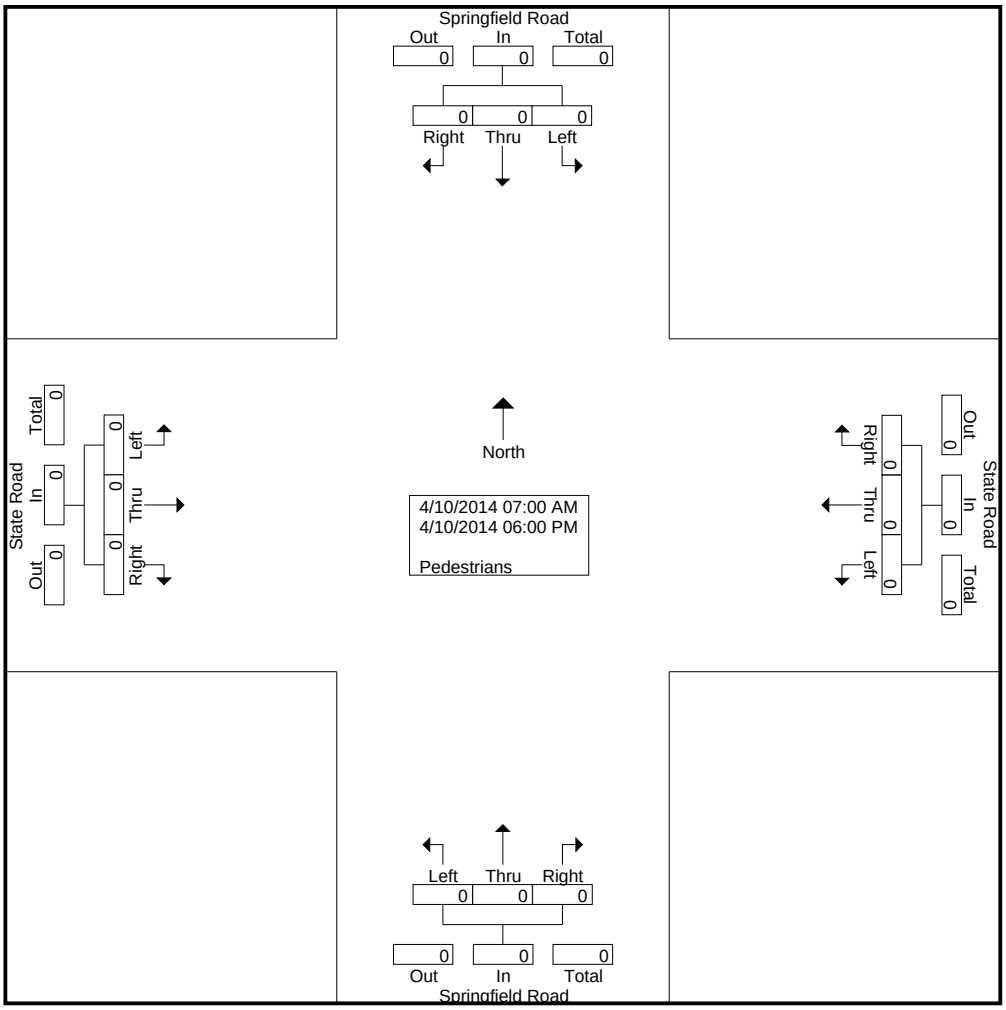
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & State Road
# Marple Township, Delaware County

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 2

Groups Printed- Pedestrians

| | State Road Eastbound | | | | | State Road Westbound | | | | | Springfield Road Northbound | | | | | Springfield Road Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 |
| 05:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 27 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | | | | | | | | | 100 | 0 | |

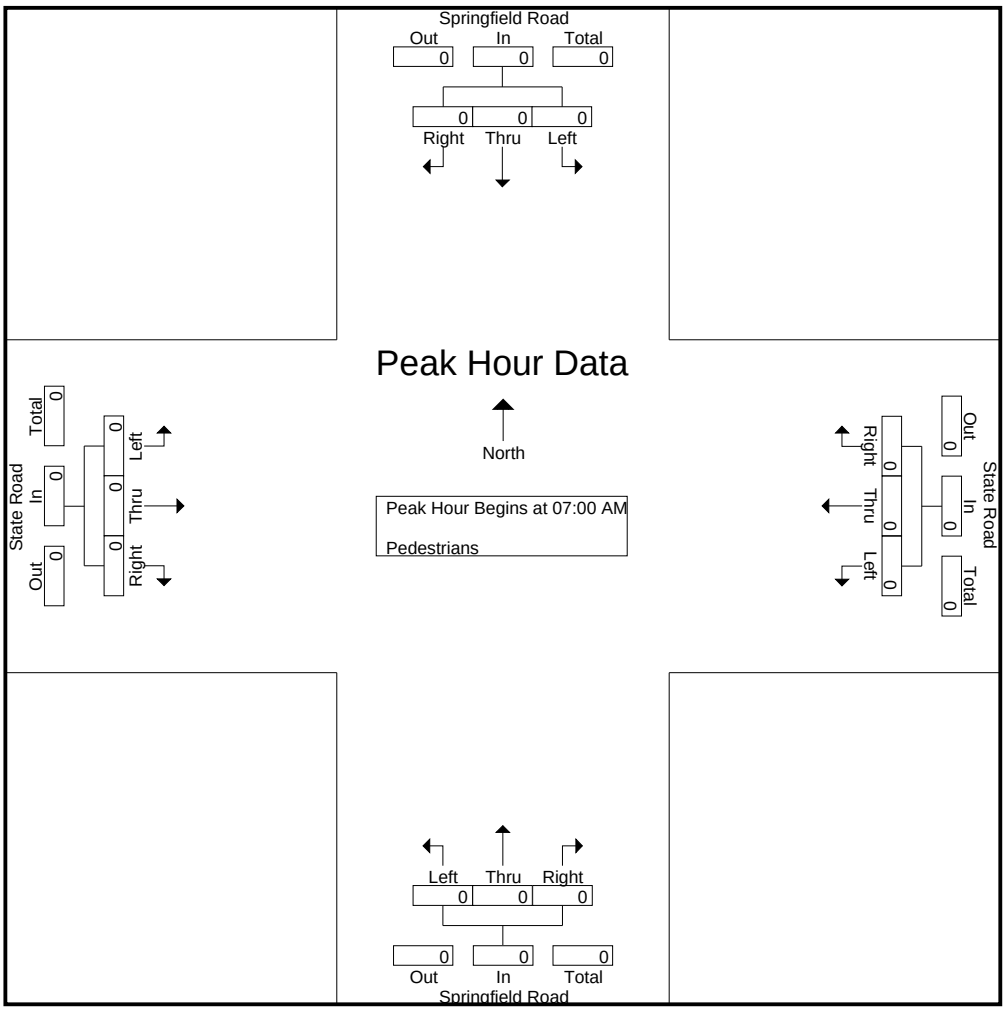


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Springfield Road & State Road**
**Marple Township, Delaware County**

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 3

| | State Road Eastbound | | | | State Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

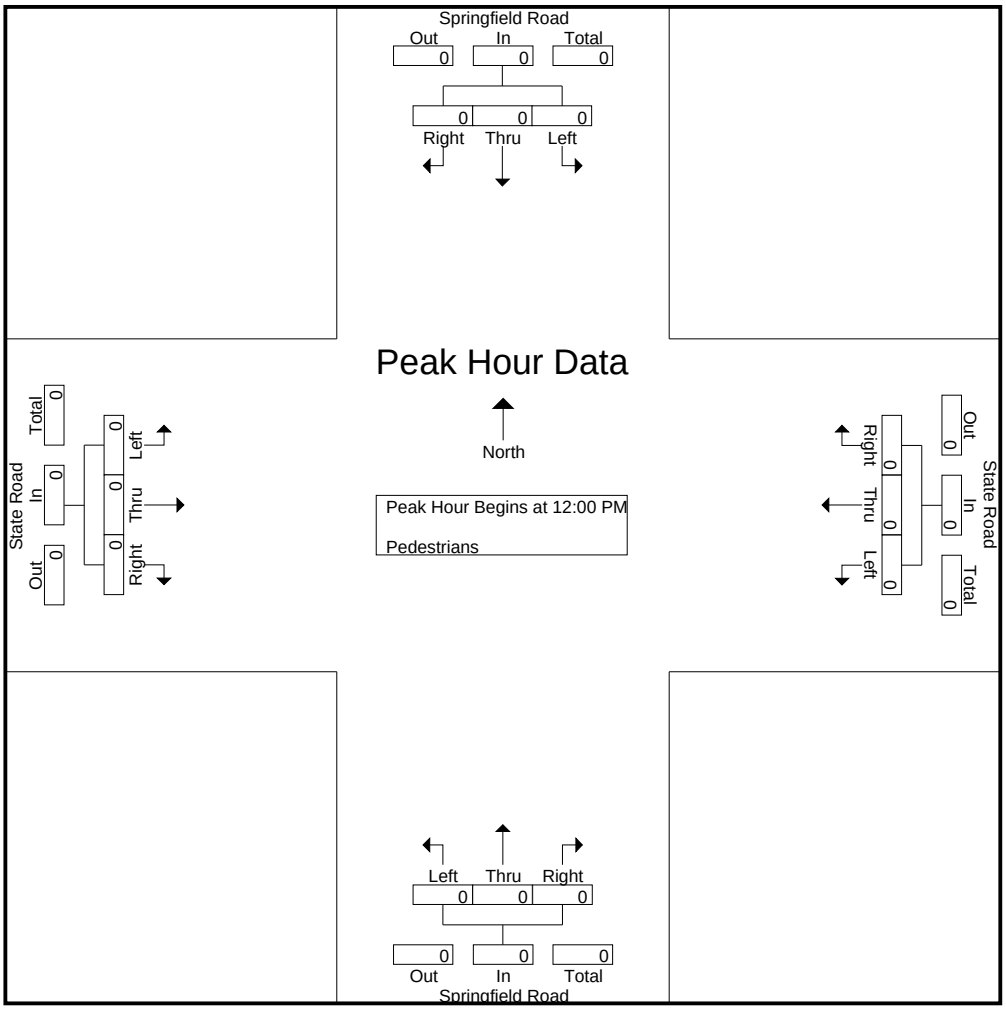


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Springfield Road & State Road**
**Marple Township, Delaware County**

File Name : 203_MS 0410 13_SR1 & Springfield
Site Code : 13
Start Date : 4/10/2014
Page No : 4

| | State Road Eastbound | | | | State Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |



# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Springfield Rd/State Rd
Date: Saturday, September 6, 2014
Counter: PB PD

File Name : Del Co 09 Sat
Site Code : 09
Start Date : 9/6/2014
Page No : 1

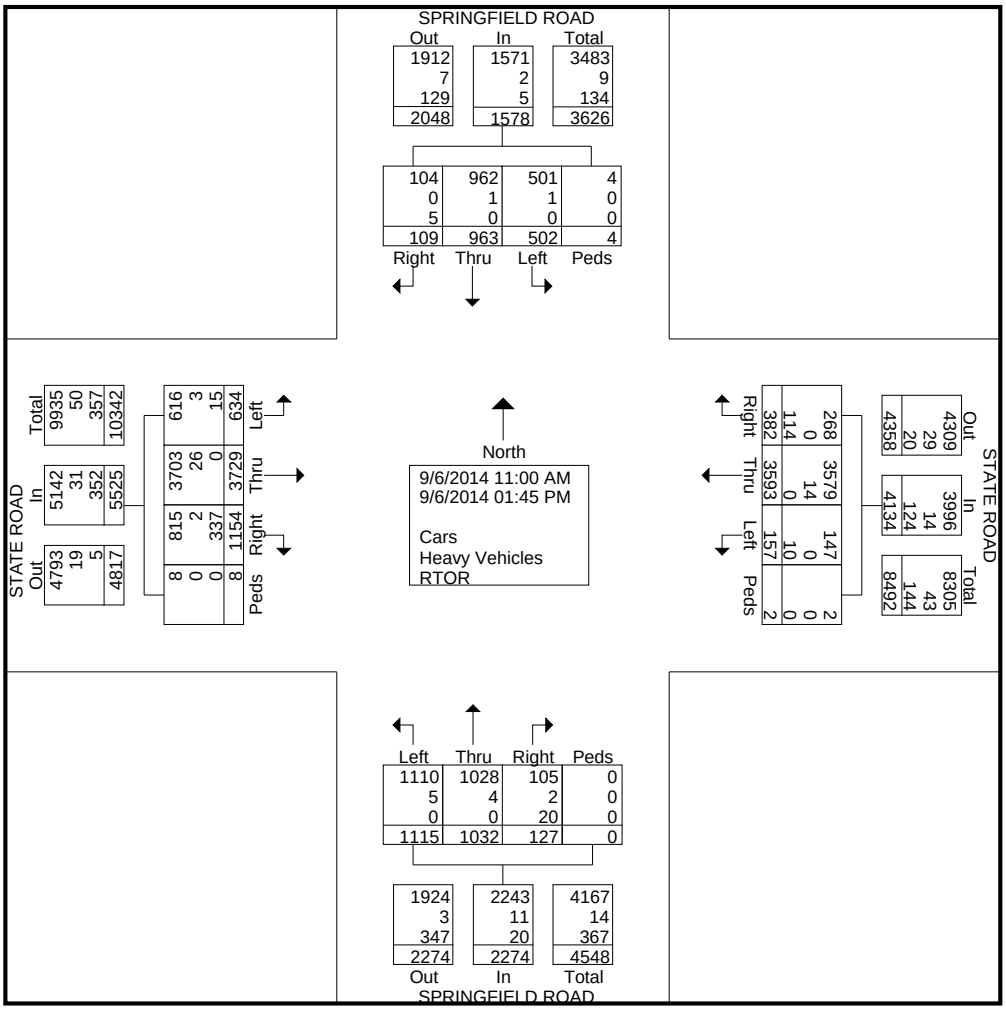
**Groups Printed- Cars - Heavy Vehicles - RTOR**

| | SPRINGFIELD ROAD Southbound | | | | | STATE ROAD Westbound | | | | | SPRINGFIELD ROAD Northbound | | | | | STATE ROAD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 11:00 AM | 9 | 64 | 44 | 0 | 117 | 27 | 298 | 13 | 0 | 338 | 7 | 77 | 93 | 0 | 177 | 95 | 307 | 49 | 1 | 452 | 1084 |
| 11:15 AM | 9 | 80 | 49 | 0 | 138 | 28 | 275 | 12 | 0 | 315 | 9 | 107 | 92 | 0 | 208 | 74 | 281 | 50 | 1 | 406 | 1067 |
| 11:30 AM | 7 | 82 | 50 | 0 | 139 | 35 | 307 | 19 | 0 | 361 | 9 | 62 | 84 | 0 | 155 | 80 | 273 | 53 | 0 | 406 | 1061 |
| 11:45 AM | 13 | 102 | 44 | 0 | 159 | 32 | 296 | 23 | 0 | 351 | 12 | 103 | 90 | 0 | 205 | 84 | 229 | 52 | 1 | 366 | 1081 |
| Total | 38 | 328 | 187 | 0 | 553 | 122 | 1176 | 67 | 0 | 1365 | 37 | 349 | 359 | 0 | 745 | 333 | 1090 | 204 | 3 | 1630 | 4293 |
| 12:00 PM | 7 | 68 | 44 | 0 | 119 | 29 | 310 | 16 | 1 | 356 | 14 | 90 | 88 | 0 | 192 | 80 | 338 | 48 | 1 | 467 | 1134 |
| 12:15 PM | 11 | 80 | 39 | 2 | 132 | 46 | 276 | 10 | 0 | 332 | 11 | 85 | 102 | 0 | 198 | 91 | 305 | 50 | 2 | 448 | 1110 |
| 12:30 PM | 7 | 91 | 37 | 1 | 136 | 29 | 332 | 11 | 1 | 373 | 11 | 70 | 87 | 0 | 168 | 94 | 311 | 59 | 1 | 465 | 1142 |
| 12:45 PM | 12 | 92 | 40 | 0 | 144 | 33 | 293 | 9 | 0 | 335 | 11 | 94 | 89 | 0 | 194 | 93 | 350 | 57 | 0 | 500 | 1173 |
| Total | 37 | 331 | 160 | 3 | 531 | 137 | 1211 | 46 | 2 | 1396 | 47 | 339 | 366 | 0 | 752 | 358 | 1304 | 214 | 4 | 1880 | 4559 |
| 01:00 PM | 10 | 54 | 26 | 1 | 91 | 28 | 311 | 7 | 0 | 346 | 11 | 89 | 105 | 0 | 205 | 110 | 349 | 64 | 1 | 524 | 1166 |
| 01:15 PM | 2 | 88 | 38 | 0 | 128 | 30 | 316 | 9 | 0 | 355 | 4 | 71 | 97 | 0 | 172 | 102 | 298 | 54 | 0 | 454 | 1109 |
| 01:30 PM | 13 | 70 | 44 | 0 | 127 | 32 | 321 | 15 | 0 | 368 | 17 | 77 | 89 | 0 | 183 | 141 | 369 | 51 | 0 | 561 | 1239 |
| 01:45 PM | 9 | 92 | 47 | 0 | 148 | 33 | 258 | 13 | 0 | 304 | 11 | 107 | 99 | 0 | 217 | 110 | 319 | 47 | 0 | 476 | 1145 |
| Total | 34 | 304 | 155 | 1 | 494 | 123 | 1206 | 44 | 0 | 1373 | 43 | 344 | 390 | 0 | 777 | 463 | 1335 | 216 | 1 | 2015 | 4659 |
| Grand Total | 109 | 963 | 502 | 4 | 1578 | 382 | 3593 | 157 | 2 | 4134 | 127 | 1032 | 1115 | 0 | 2274 | 1154 | 3729 | 634 | 8 | 5525 | 13511 |
| Apprch % | 6.9 | 61 | 31.8 | 0.3 | | 9.2 | 86.9 | 3.8 | 0 | | 5.6 | 45.4 | 49 | 0 | | 20.9 | 67.5 | 11.5 | 0.1 | | |
| Total % | 0.8 | 7.1 | 3.7 | 0 | 11.7 | 2.8 | 26.6 | 1.2 | 0 | 30.6 | 0.9 | 7.6 | 8.3 | 0 | 16.8 | 8.5 | 27.6 | 4.7 | 0.1 | 40.9 | |
| Cars | 104 | 962 | 501 | 4 | 1571 | 268 | 3579 | 147 | 2 | 3996 | 105 | 1028 | 1110 | 0 | 2243 | 815 | 3703 | 616 | 8 | 5142 | 12952 |
| % Cars | 95.4 | 99.9 | 99.8 | 100 | 99.6 | 70.2 | 99.6 | 93.6 | 100 | 96.7 | 82.7 | 99.6 | 99.6 | 0 | 98.6 | 70.6 | 99.3 | 97.2 | 100 | 93.1 | 95.9 |
| Heavy Vehicles | 0 | 1 | 1 | 0 | 2 | 0 | 14 | 0 | 0 | 14 | 2 | 4 | 5 | 0 | 11 | 2 | 26 | 3 | 0 | 31 | 58 |
| % Heavy Vehicles | 0 | 0.1 | 0.2 | 0 | 0.1 | 0 | 0.4 | 0 | 0 | 0.3 | 1.6 | 0.4 | 0.4 | 0 | 0.5 | 0.2 | 0.7 | 0.5 | 0 | 0.6 | 0.4 |
| RTOR | 5 | 0 | 0 | 0 | 5 | 114 | 0 | 10 | 0 | 124 | 20 | 0 | 0 | 0 | 20 | 337 | 0 | 15 | 0 | 352 | 501 |
| % RTOR | 4.6 | 0 | 0 | 0 | 0.3 | 29.8 | 0 | 6.4 | 0 | 3 | 15.7 | 0 | 0 | 0 | 0.9 | 29.2 | 0 | 2.4 | 0 | 6.4 | 3.7 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Springfield Rd/State Rd
Date: Saturday, September 6, 2014
Counter: PB PD

File Name : Del Co 09 Sat
Site Code : 09
Start Date : 9/6/2014
Page No : 2

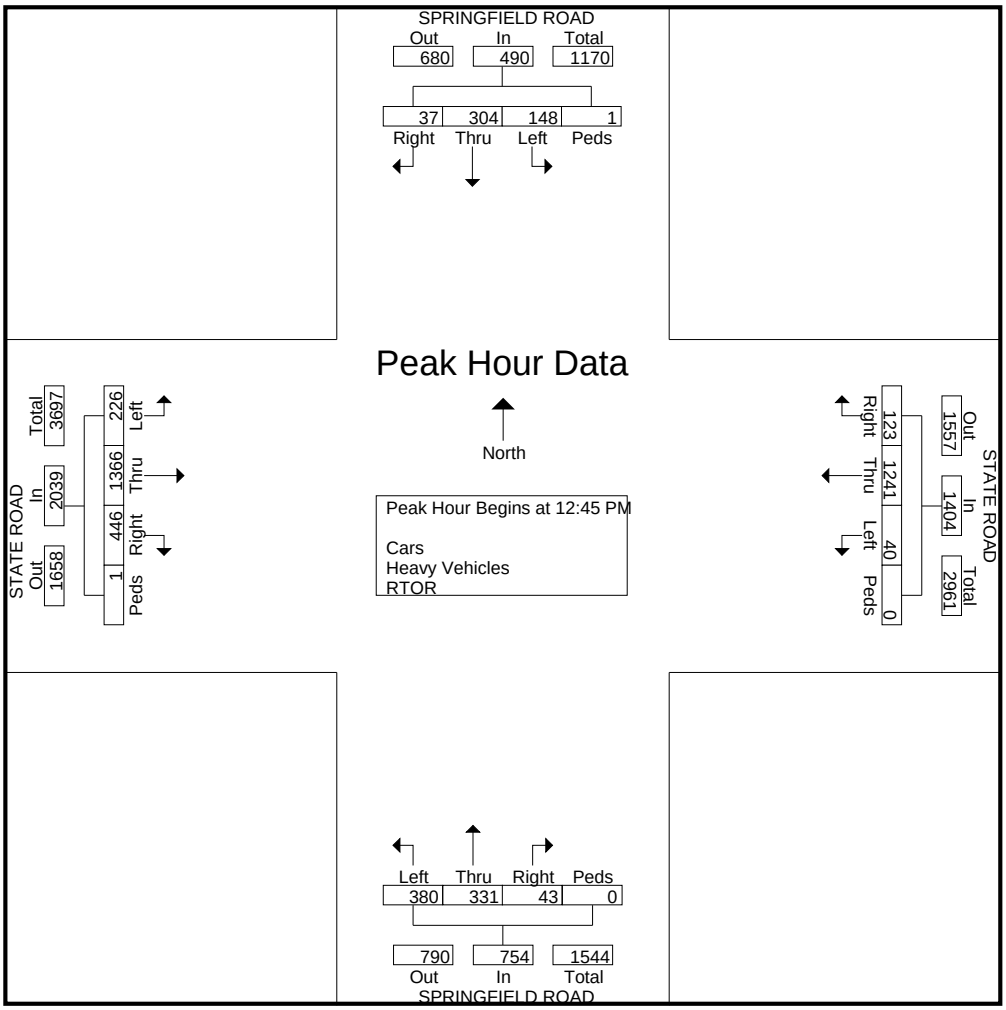


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Springfield Rd/State Rd
Date: Saturday, September 6, 2014
Counter: PB PD

File Name : Del Co 09 Sat
Site Code : 09
Start Date : 9/6/2014
Page No : 4

| | SPRINGFIELD ROAD Southbound | | | | | STATE ROAD Westbound | | | | | SPRINGFIELD ROAD Northbound | | | | | STATE ROAD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 12:45 PM | 12 | **92** | 40 | 0 | **144** | **33** | 293 | 9 | 0 | 335 | 11 | **94** | 89 | 0 | 194 | 93 | 350 | 57 | 0 | 500 | 1173 |
| 01:00 PM | 10 | 54 | 26 | **1** | 91 | 28 | 311 | 7 | 0 | 346 | 11 | 89 | **105** | 0 | **205** | 110 | 349 | **64** | **1** | 524 | 1166 |
| 01:15 PM | 2 | 88 | 38 | 0 | 128 | 30 | 316 | 9 | 0 | 355 | 4 | 71 | 97 | 0 | 172 | 102 | 298 | 54 | 0 | 454 | 1109 |
| 01:30 PM | **13** | 70 | **44** | 0 | 127 | 32 | **321** | **15** | 0 | **368** | **17** | 77 | 89 | 0 | 183 | **141** | **369** | 51 | 0 | **561** | **1239** |
| Total Volume | 37 | 304 | 148 | 1 | 490 | 123 | 1241 | 40 | 0 | 1404 | 43 | 331 | 380 | 0 | 754 | 446 | 1366 | 226 | 1 | 2039 | 4687 |
| % App. Total | 7.6 | 62 | 30.2 | 0.2 | | 8.8 | 88.4 | 2.8 | 0 | | 5.7 | 43.9 | 50.4 | 0 | | 21.9 | 67 | 11.1 | 0 | | |
| PHF | .712 | .826 | .841 | .250 | .851 | .932 | .967 | .667 | .000 | .954 | .632 | .880 | .905 | .000 | .920 | .791 | .925 | .883 | .250 | .909 | .946 |



## *SPRINGFIELD ROAD & OLD MARPLE ROAD*

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Springfield Rd/Old Marple
Date: Tuesday, September 9, 2014
Counter: MIO PB

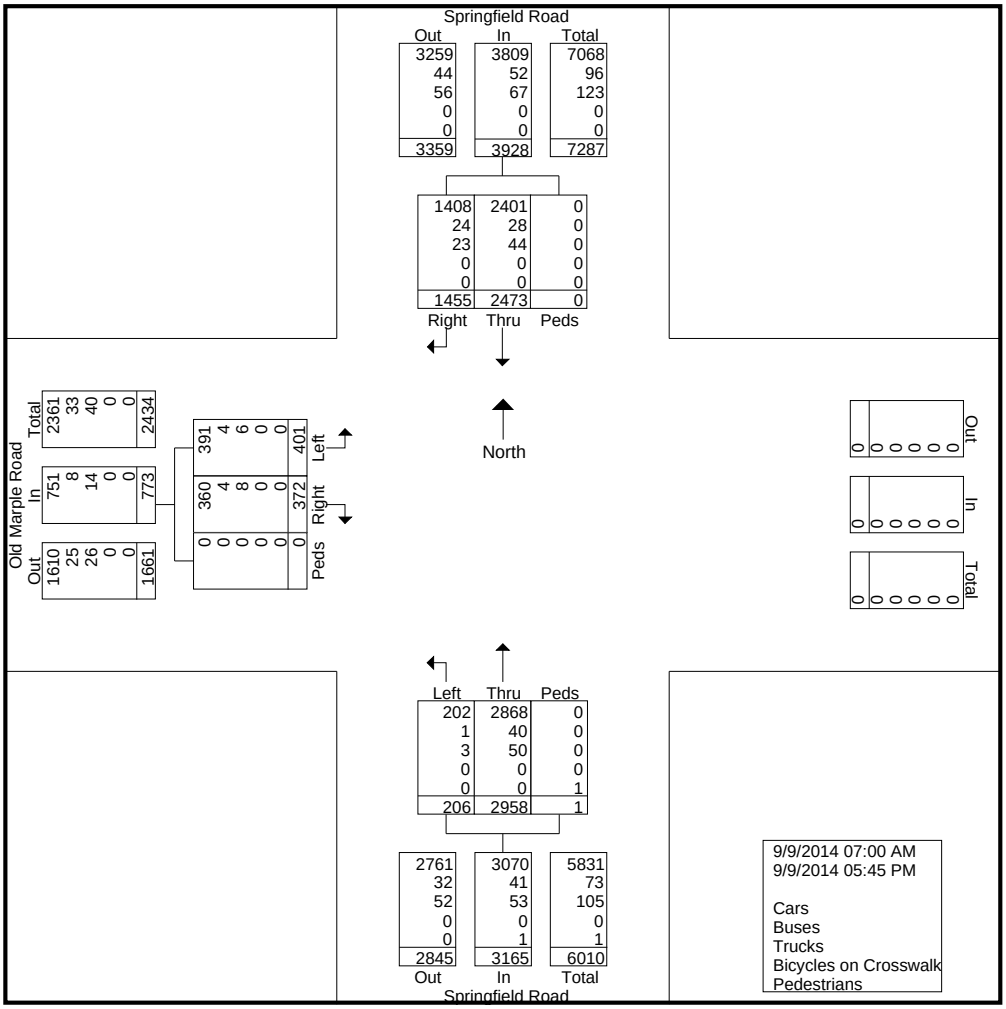
File Name : Del Co 10
Site Code : 10
Start Date : 9/9/2014
Page No : 1

Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Springfield Road Southbound | | | | Springfield Road Northbound | | | | Old Marple Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 55 | 90 | 0 | 145 | 182 | 19 | 0 | 201 | 11 | 10 | 0 | 21 | 367 |
| 07:15 AM | 84 | 101 | 0 | 185 | 187 | 10 | 0 | 197 | 9 | 12 | 0 | 21 | 403 |
| 07:30 AM | 110 | 118 | 0 | 228 | 170 | 19 | 1 | 190 | 13 | 9 | 0 | 22 | 440 |
| 07:45 AM | 104 | 107 | 0 | 211 | 185 | 9 | 0 | 194 | 7 | 12 | 0 | 19 | 424 |
| Total | 353 | 416 | 0 | 769 | 724 | 57 | 1 | 782 | 40 | 43 | 0 | 83 | 1634 |
| 08:00 AM | 99 | 104 | 0 | 203 | 184 | 19 | 0 | 203 | 18 | 9 | 0 | 27 | 433 |
| 08:15 AM | 102 | 97 | 0 | 199 | 156 | 22 | 0 | 178 | 9 | 10 | 0 | 19 | 396 |
| 08:30 AM | 88 | 100 | 0 | 188 | 162 | 13 | 0 | 175 | 9 | 13 | 0 | 22 | 385 |
| 08:45 AM | 66 | 75 | 0 | 141 | 147 | 17 | 0 | 164 | 9 | 17 | 0 | 26 | 331 |
| Total | 355 | 376 | 0 | 731 | 649 | 71 | 0 | 720 | 45 | 49 | 0 | 94 | 1545 |
| 03:00 PM | 42 | 113 | 0 | 155 | 143 | 9 | 0 | 152 | 16 | 17 | 0 | 33 | 340 |
| 03:15 PM | 56 | 145 | 0 | 201 | 113 | 10 | 0 | 123 | 34 | 30 | 0 | 64 | 388 |
| 03:30 PM | 62 | 129 | 0 | 191 | 120 | 12 | 0 | 132 | 22 | 27 | 0 | 49 | 372 |
| 03:45 PM | 60 | 126 | 0 | 186 | 128 | 6 | 0 | 134 | 17 | 24 | 0 | 41 | 361 |
| Total | 220 | 513 | 0 | 733 | 504 | 37 | 0 | 541 | 89 | 98 | 0 | 187 | 1461 |
| 04:00 PM | 74 | 124 | 0 | 198 | 110 | 5 | 0 | 115 | 29 | 14 | 0 | 43 | 356 |
| 04:15 PM | 55 | 143 | 0 | 198 | 154 | 5 | 0 | 159 | 31 | 23 | 0 | 54 | 411 |
| 04:30 PM | 62 | 141 | 0 | 203 | 132 | 3 | 0 | 135 | 19 | 29 | 0 | 48 | 386 |
| 04:45 PM | 68 | 145 | 0 | 213 | 147 | 3 | 0 | 150 | 19 | 28 | 0 | 47 | 410 |
| Total | 259 | 553 | 0 | 812 | 543 | 16 | 0 | 559 | 98 | 94 | 0 | 192 | 1563 |
| 05:00 PM | 69 | 152 | 0 | 221 | 127 | 5 | 0 | 132 | 26 | 30 | 0 | 56 | 409 |
| 05:15 PM | 61 | 158 | 0 | 219 | 132 | 7 | 0 | 139 | 28 | 34 | 0 | 62 | 420 |
| 05:30 PM | 69 | 151 | 0 | 220 | 141 | 4 | 0 | 145 | 18 | 27 | 0 | 45 | 410 |
| 05:45 PM | 69 | 154 | 0 | 223 | 138 | 9 | 0 | 147 | 28 | 26 | 0 | 54 | 424 |
| Total | 268 | 615 | 0 | 883 | 538 | 25 | 0 | 563 | 100 | 117 | 0 | 217 | 1663 |
| Grand Total | 1455 | 2473 | 0 | 3928 | 2958 | 206 | 1 | 3165 | 372 | 401 | 0 | 773 | 7866 |
| Apprch % | 37 | 63 | 0 | | 93.5 | 6.5 | 0 | | 48.1 | 51.9 | 0 | | |
| Total % | 18.5 | 31.4 | 0 | 49.9 | 37.6 | 2.6 | 0 | 40.2 | 4.7 | 5.1 | 0 | 9.8 | |
| Cars | 1408 | 2401 | 0 | 3809 | 2868 | 202 | 0 | 3070 | 360 | 391 | 0 | 751 | 7630 |
| % Cars | 96.8 | 97.1 | 0 | 97 | 97 | 98.1 | 0 | 97 | 96.8 | 97.5 | 0 | 97.2 | 97 |
| Buses | 24 | 28 | 0 | 52 | 40 | 1 | 0 | 41 | 4 | 4 | 0 | 8 | 101 |
| % Buses | 1.6 | 1.1 | 0 | 1.3 | 1.4 | 0.5 | 0 | 1.3 | 1.1 | 1 | 0 | 1 | 1.3 |
| Trucks | 23 | 44 | 0 | 67 | 50 | 3 | 0 | 53 | 8 | 6 | 0 | 14 | 134 |
| % Trucks | 1.6 | 1.8 | 0 | 1.7 | 1.7 | 1.5 | 0 | 1.7 | 2.2 | 1.5 | 0 | 1.8 | 1.7 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

File Name : Del Co 10
Site Code : 10
Start Date : 9/9/2014
Page No : 2

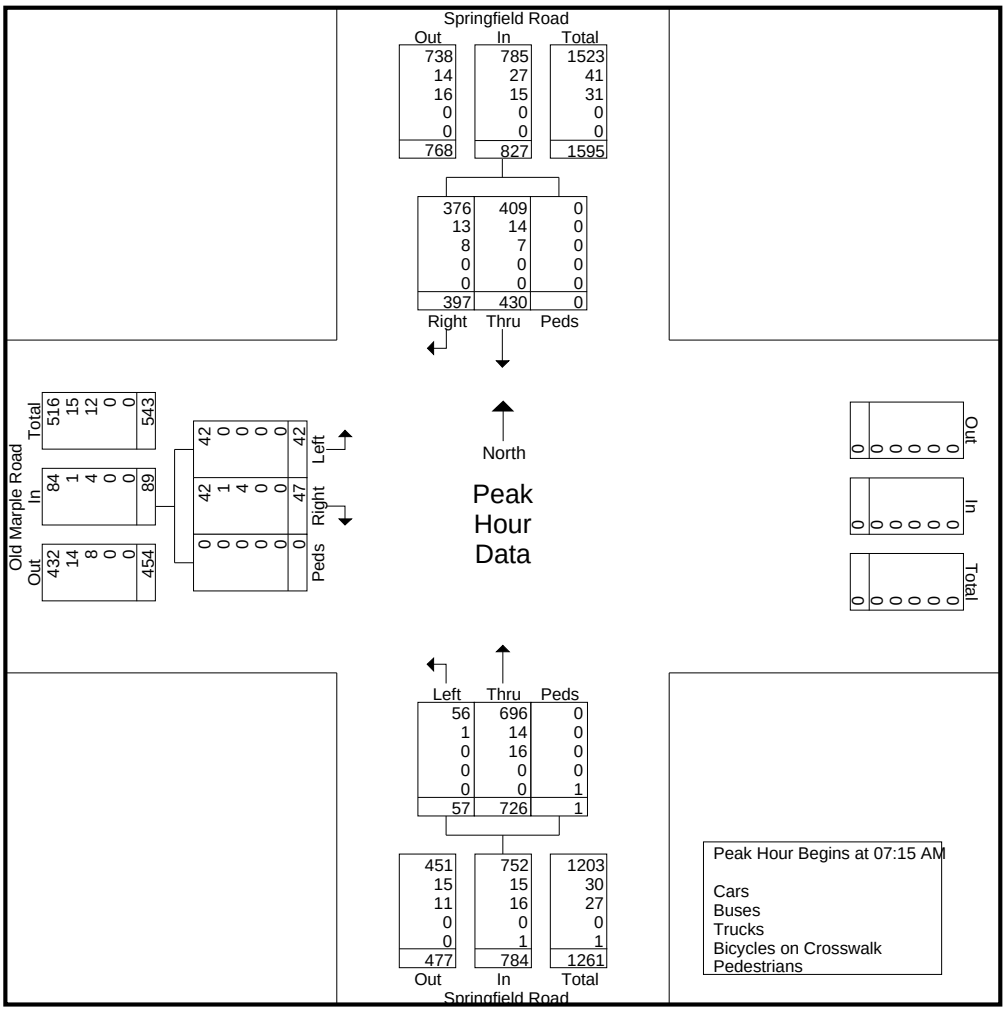


# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

File Name : Del Co 10
Site Code : 10
Start Date : 9/9/2014
Page No : 4

| | Springfield Road Southbound | | | | Springfield Road Northbound | | | | Old Marple Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | |
| 07:15 AM | 84 | 101 | 0 | 185 | **187** | 10 | 0 | 197 | 9 | **12** | 0 | 21 | 403 |
| 07:30 AM | **110** | **118** | 0 | **228** | 170 | **19** | **1** | 190 | 13 | 9 | 0 | 22 | **440** |
| 07:45 AM | 104 | 107 | 0 | 211 | 185 | 9 | 0 | 194 | 7 | 12 | 0 | 19 | 424 |
| 08:00 AM | 99 | 104 | 0 | 203 | 184 | 19 | 0 | **203** | **18** | 9 | 0 | **27** | 433 |
| Total Volume | 397 | 430 | 0 | 827 | 726 | 57 | 1 | 784 | 47 | 42 | 0 | 89 | 1700 |
| % App. Total | 48 | 52 | 0 | | 92.6 | 7.3 | 0.1 | | 52.8 | 47.2 | 0 | | |
| PHF | .902 | .911 | .000 | .907 | .971 | .750 | .250 | .966 | .653 | .875 | .000 | .824 | .966 |
| Cars | 376 | 409 | 0 | 785 | 696 | 56 | 0 | 752 | 42 | 42 | 0 | 84 | 1621 |
| % Cars | 94.7 | 95.1 | 0 | 94.9 | 95.9 | 98.2 | 0 | 95.9 | 89.4 | 100 | 0 | 94.4 | 95.4 |
| Buses | 13 | 14 | 0 | 27 | 14 | 1 | 0 | 15 | 1 | 0 | 0 | 1 | 43 |
| % Buses | 3.3 | 3.3 | 0 | 3.3 | 1.9 | 1.8 | 0 | 1.9 | 2.1 | 0 | 0 | 1.1 | 2.5 |
| Trucks | 8 | 7 | 0 | 15 | 16 | 0 | 0 | 16 | 4 | 0 | 0 | 4 | 35 |
| % Trucks | 2.0 | 1.6 | 0 | 1.8 | 2.2 | 0 | 0 | 2.0 | 8.5 | 0 | 0 | 4.5 | 2.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0 | 0 | 0.1 |

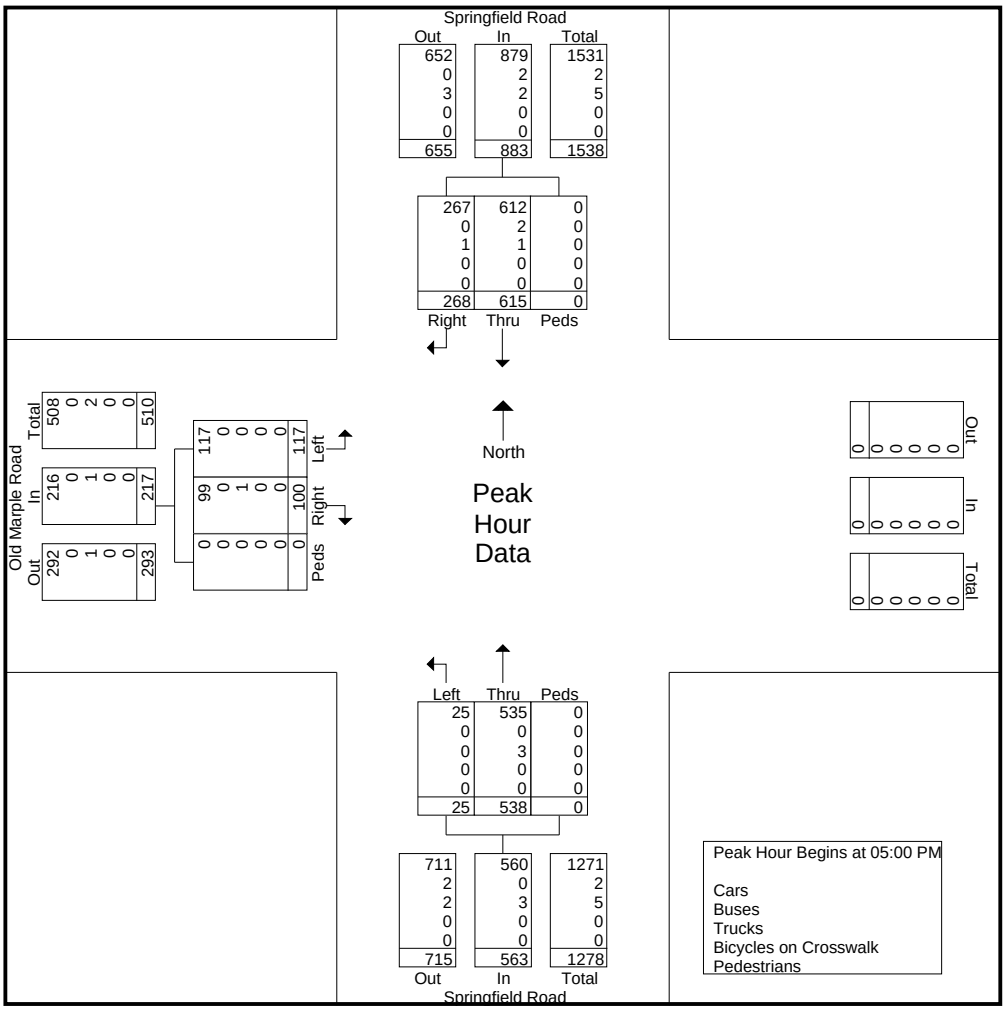


# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

File Name : Del Co 10
Site Code : 10
Start Date : 9/9/2014
Page No : 5

| | Springfield Road Southbound | | | | Springfield Road Northbound | | | | Old Marple Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Peds | App. Total | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | |
| 05:00 PM | **69** | 152 | 0 | 221 | 127 | 5 | 0 | 132 | 26 | 30 | 0 | 56 | 409 |
| 05:15 PM | 61 | **158** | 0 | 219 | 132 | 7 | 0 | 139 | **28** | **34** | 0 | **62** | 420 |
| 05:30 PM | 69 | 151 | 0 | 220 | **141** | 4 | 0 | 145 | 18 | 27 | 0 | 45 | 410 |
| 05:45 PM | 69 | 154 | 0 | **223** | 138 | **9** | 0 | **147** | 28 | 26 | 0 | 54 | **424** |
| Total Volume | 268 | 615 | 0 | 883 | 538 | 25 | 0 | 563 | 100 | 117 | 0 | 217 | 1663 |
| % App. Total | 30.4 | 69.6 | 0 | | 95.6 | 4.4 | 0 | | 46.1 | 53.9 | 0 | | |
| PHF | .971 | .973 | .000 | .990 | .954 | .694 | .000 | .957 | .893 | .860 | .000 | .875 | .981 |
| Cars | 267 | 612 | 0 | 879 | 535 | 25 | 0 | 560 | 99 | 117 | 0 | 216 | 1655 |
| % Cars | 99.6 | 99.5 | 0 | 99.5 | 99.4 | 100 | 0 | 99.5 | 99.0 | 100 | 0 | 99.5 | 99.5 |
| Buses | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Buses | 0 | 0.3 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Trucks | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 6 |
| % Trucks | 0.4 | 0.2 | 0 | 0.2 | 0.6 | 0 | 0 | 0.5 | 1.0 | 0 | 0 | 0.5 | 0.4 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Counter:: MIO
Counted By:: JW/JM
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Old Marple Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 1

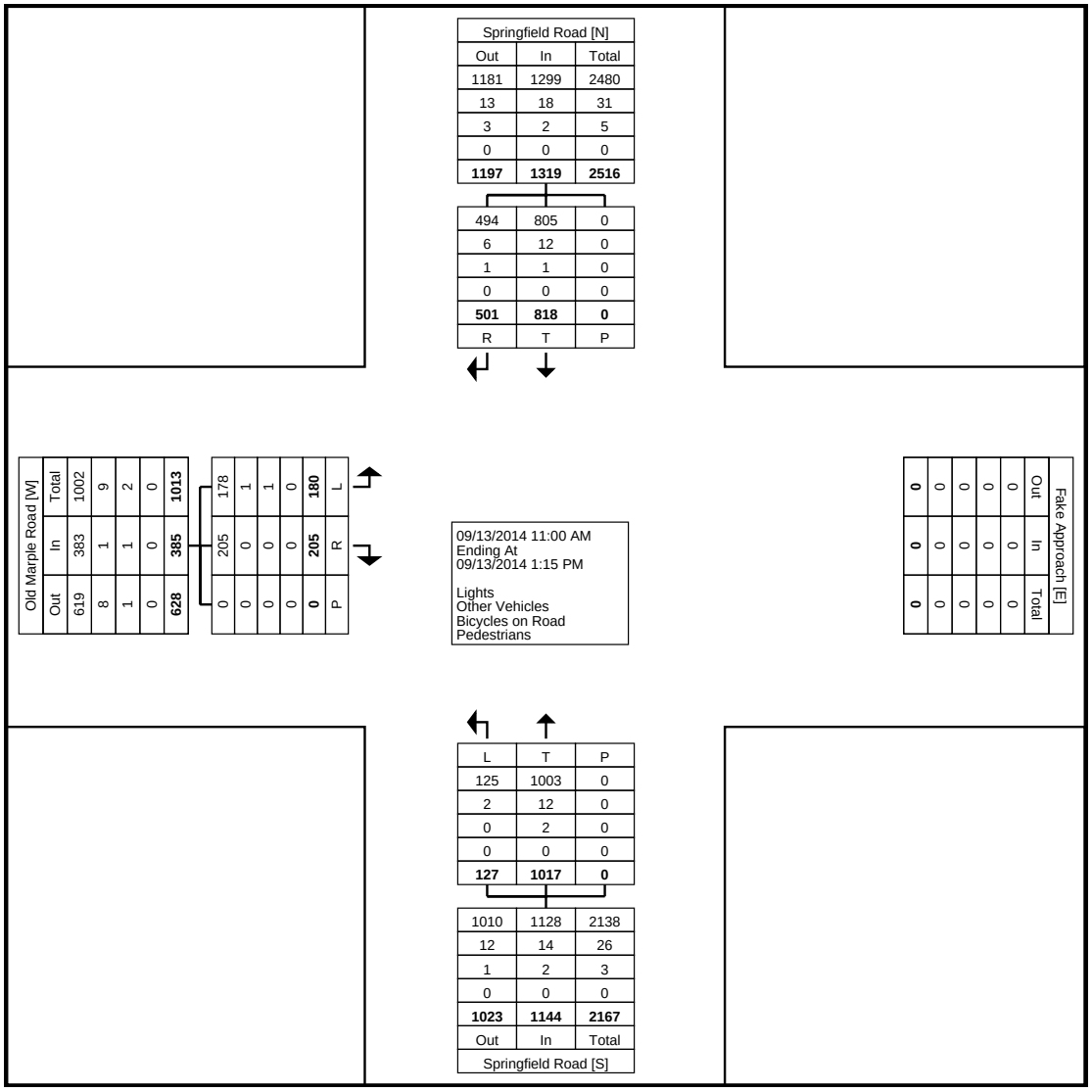
# Turning Movement Data

| Start Time | Old Marple Road Eastbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 26 | 15 | 0 | 41 | 7 | 101 | 0 | 108 | 87 | 55 | 0 | 142 | 291 |
| 11:15 AM | 15 | 20 | 0 | 35 | 15 | 143 | 0 | 158 | 116 | 78 | 0 | 194 | 387 |
| 11:30 AM | 17 | 27 | 0 | 44 | 17 | 127 | 0 | 144 | 79 | 63 | 0 | 142 | 330 |
| 11:45 AM | 26 | 22 | 0 | 48 | 23 | 127 | 0 | 150 | 121 | 43 | 0 | 164 | 362 |
| Hourly Total | 84 | 84 | 0 | 168 | 62 | 498 | 0 | 560 | 403 | 239 | 0 | 642 | 1370 |
| 12:00 PM | 18 | 35 | 0 | 53 | 17 | 181 | 0 | 198 | 116 | 68 | 0 | 184 | 435 |
| 12:15 PM | 26 | 30 | 0 | 56 | 16 | 120 | 0 | 136 | 96 | 79 | 0 | 175 | 367 |
| 12:30 PM | 33 | 25 | 0 | 58 | 14 | 118 | 0 | 132 | 94 | 55 | 0 | 149 | 339 |
| 12:45 PM | 19 | 31 | 0 | 50 | 18 | 100 | 0 | 118 | 109 | 59 | 0 | 168 | 336 |
| Hourly Total | 96 | 121 | 0 | 217 | 65 | 519 | 0 | 584 | 415 | 261 | 0 | 676 | 1477 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Grand Total | 180 | 205 | 0 | 385 | 127 | 1017 | 0 | 1144 | 818 | 501 | 0 | 1319 | 2848 |
| Approach % | 46.8 | 53.2 | - | - | 11.1 | 88.9 | - | - | 62.0 | 38.0 | - | - | - |
| Total % | 6.3 | 7.2 | - | 13.5 | 4.5 | 35.7 | - | 40.2 | 28.7 | 17.6 | - | 46.3 | - |
| Lights | 178 | 205 | - | 383 | 125 | 1003 | - | 1128 | 805 | 494 | - | 1299 | 2810 |
| % Lights | 98.9 | 100.0 | - | 99.5 | 98.4 | 98.6 | - | 98.6 | 98.4 | 98.6 | - | 98.5 | 98.7 |
| Other Vehicles | 1 | 0 | - | 1 | 2 | 12 | - | 14 | 12 | 6 | - | 18 | 33 |
| % Other Vehicles | 0.6 | 0.0 | - | 0.3 | 1.6 | 1.2 | - | 1.2 | 1.5 | 1.2 | - | 1.4 | 1.2 |
| Bicycles on Road | 1 | 0 | - | 1 | 0 | 2 | - | 2 | 1 | 1 | - | 2 | 5 |
| % Bicycles on Road | 0.6 | 0.0 | - | 0.3 | 0.0 | 0.2 | - | 0.2 | 0.1 | 0.2 | - | 0.2 | 0.2 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JW/JM
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Old Marple Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: JW/JM
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Old Marple Road - SAT
Site Code:
Start Date: 09/13/2014

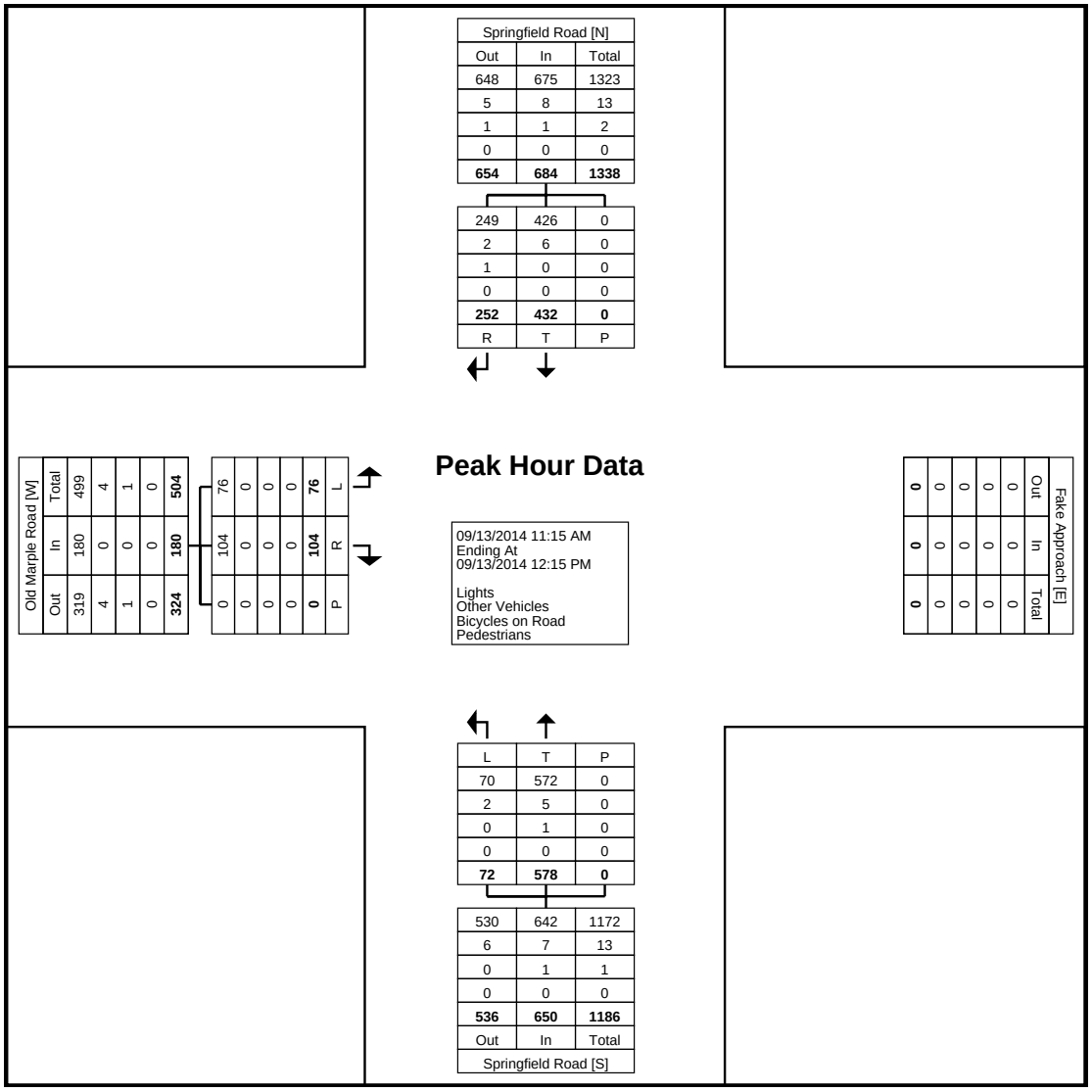

# Turning Movement Peak Hour Data (11:15 AM)

| Start Time | Old Marple Road Eastbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| 11:15 AM | 15 | 20 | 0 | 35 | 15 | 143 | 0 | 158 | 116 | 78 | 0 | 194 | 387 |
| 11:30 AM | 17 | 27 | 0 | 44 | 17 | 127 | 0 | 144 | 79 | 63 | 0 | 142 | 330 |
| 11:45 AM | 26 | 22 | 0 | 48 | 23 | 127 | 0 | 150 | 121 | 43 | 0 | 164 | 362 |
| 12:00 PM | 18 | 35 | 0 | 53 | 17 | 181 | 0 | 198 | 116 | 68 | 0 | 184 | 435 |
| Total | 76 | 104 | 0 | 180 | 72 | 578 | 0 | 650 | 432 | 252 | 0 | 684 | 1514 |
| Approach % | 42.2 | 57.8 | - | - | 11.1 | 88.9 | - | - | 63.2 | 36.8 | - | - | - |
| Total % | 5.0 | 6.9 | - | 11.9 | 4.8 | 38.2 | - | 42.9 | 28.5 | 16.6 | - | 45.2 | - |
| PHF | 0.731 | 0.743 | - | 0.849 | 0.783 | 0.798 | - | 0.821 | 0.893 | 0.808 | - | 0.881 | 0.870 |
| Lights | 76 | 104 | - | 180 | 70 | 572 | - | 642 | 426 | 249 | - | 675 | 1497 |
| % Lights | 100.0 | 100.0 | - | 100.0 | 97.2 | 99.0 | - | 98.8 | 98.6 | 98.8 | - | 98.7 | 98.9 |
| Other Vehicles | 0 | 0 | - | 0 | 2 | 5 | - | 7 | 6 | 2 | - | 8 | 15 |
| % Other Vehicles | 0.0 | 0.0 | - | 0.0 | 2.8 | 0.9 | - | 1.1 | 1.4 | 0.8 | - | 1.2 | 1.0 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 1 | - | 1 | 0 | 1 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.2 | - | 0.2 | 0.0 | 0.4 | - | 0.1 | 0.1 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: JW/JM
Weather:: Clear

Count Name: Springfield Road & Old Marple Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 4




Turning Movement Peak Hour Data Plot (11:15 AM)

## *SPRINGFIELD ROAD & EAGLE ROAD*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Springfield Rd/Eagle Rd
Date: Tuesday, April 8th, 2014
Counter: MIO

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 1

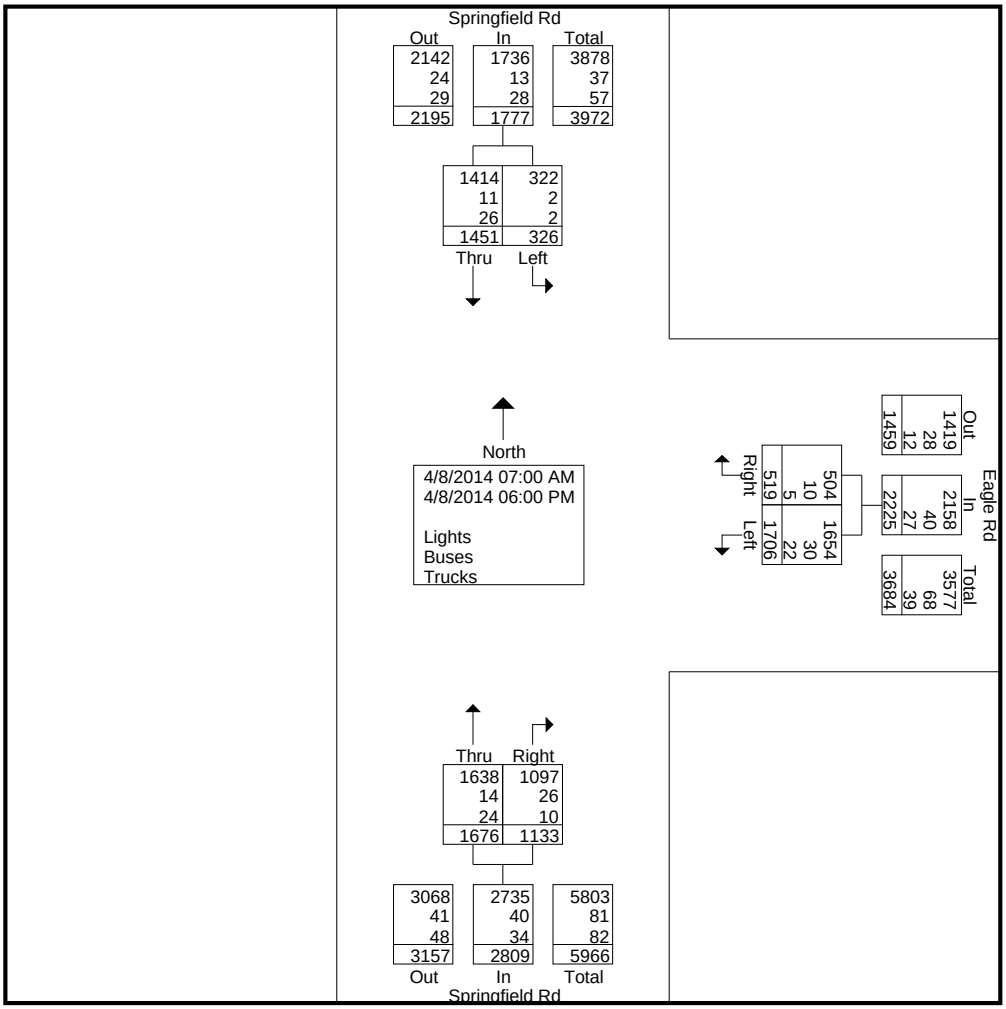
Groups Printed- Lights - Buses - Trucks

| | Eagle Rd Westbound | | | | Springfield Rd Northbound | | | | Springfield Rd Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 95 | 36 | 0 | 131 | 139 | 50 | 0 | 189 | 6 | 53 | 0 | 59 | 0 | 379 | 379 |
| 07:15 AM | 115 | 60 | 0 | 175 | 132 | 49 | 0 | 181 | 3 | 72 | 0 | 75 | 0 | 431 | 431 |
| 07:30 AM | 138 | 49 | 0 | 187 | 137 | 80 | 0 | 217 | 6 | 82 | 0 | 88 | 0 | 492 | 492 |
| 07:45 AM | 160 | 78 | 0 | 238 | 152 | 67 | 0 | 219 | 7 | 58 | 0 | 65 | 0 | 522 | 522 |
| Total | 508 | 223 | 0 | 731 | 560 | 246 | 0 | 806 | 22 | 265 | 0 | 287 | 0 | 1824 | 1824 |
| 08:00 AM | 124 | 54 | 0 | 178 | 124 | 62 | 0 | 186 | 5 | 83 | 0 | 88 | 0 | 452 | 452 |
| 08:15 AM | 137 | 56 | 0 | 193 | 122 | 58 | 0 | 180 | 3 | 70 | 0 | 73 | 0 | 446 | 446 |
| 08:30 AM | 137 | 43 | 0 | 180 | 105 | 37 | 0 | 142 | 8 | 63 | 0 | 71 | 0 | 393 | 393 |
| 08:45 AM | 103 | 38 | 0 | 141 | 120 | 54 | 0 | 174 | 7 | 66 | 0 | 73 | 0 | 388 | 388 |
| Total | 501 | 191 | 0 | 692 | 471 | 211 | 0 | 682 | 23 | 282 | 0 | 305 | 0 | 1679 | 1679 |
| 04:00 PM | 85 | 8 | 0 | 93 | 78 | 86 | 0 | 164 | 31 | 122 | 0 | 153 | 0 | 410 | 410 |
| 04:15 PM | 78 | 11 | 0 | 89 | 82 | 75 | 0 | 157 | 31 | 119 | 0 | 150 | 0 | 396 | 396 |
| 04:30 PM | 106 | 12 | 0 | 118 | 75 | 80 | 0 | 155 | 38 | 108 | 0 | 146 | 0 | 419 | 419 |
| 04:45 PM | 72 | 17 | 0 | 89 | 75 | 103 | 0 | 178 | 29 | 120 | 0 | 149 | 0 | 416 | 416 |
| Total | 341 | 48 | 0 | 389 | 310 | 344 | 0 | 654 | 129 | 469 | 0 | 598 | 0 | 1641 | 1641 |
| 05:00 PM | 106 | 11 | 0 | 117 | 88 | 94 | 0 | 182 | 41 | 103 | 0 | 144 | 0 | 443 | 443 |
| 05:15 PM | 85 | 14 | 0 | 99 | 78 | 81 | 0 | 159 | 45 | 110 | 0 | 155 | 0 | 413 | 413 |
| 05:30 PM | 81 | 19 | 0 | 100 | 93 | 73 | 0 | 166 | 32 | 115 | 0 | 147 | 0 | 413 | 413 |
| 05:45 PM | 84 | 13 | 0 | 97 | 76 | 84 | 0 | 160 | 34 | 107 | 0 | 141 | 0 | 398 | 398 |
| Total | 356 | 57 | 0 | 413 | 335 | 332 | 0 | 667 | 152 | 435 | 0 | 587 | 0 | 1667 | 1667 |
| Grand Total | 1706 | 519 | 0 | 2225 | 1676 | 1133 | 0 | 2809 | 326 | 1451 | 0 | 1777 | 0 | 6811 | 6811 |
| Apprch % | 76.7 | 23.3 | | | 59.7 | 40.3 | | | 18.3 | 81.7 | | | | | |
| Total % | 25 | 7.6 | | 32.7 | 24.6 | 16.6 | | 41.2 | 4.8 | 21.3 | | 26.1 | 0 | 100 | |
| Lights | 1654 | 504 | | 2158 | 1638 | 1097 | | 2735 | 322 | 1414 | | 1736 | 0 | 0 | 6629 |
| % Lights | 97 | 97.1 | 0 | 97 | 97.7 | 96.8 | 0 | 97.4 | 98.8 | 97.5 | 0 | 97.7 | 0 | 0 | 97.3 |
| Buses | 30 | 10 | | 40 | 14 | 26 | | 40 | 2 | 11 | | 13 | 0 | 0 | 93 |
| % Buses | 1.8 | 1.9 | 0 | 1.8 | 0.8 | 2.3 | 0 | 1.4 | 0.6 | 0.8 | 0 | 0.7 | 0 | 0 | 1.4 |
| Trucks | 22 | 5 | | 27 | 24 | 10 | | 34 | 2 | 26 | | 28 | 0 | 0 | 89 |
| % Trucks | 1.3 | 1 | 0 | 1.2 | 1.4 | 0.9 | 0 | 1.2 | 0.6 | 1.8 | 0 | 1.6 | 0 | 0 | 1.3 |

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 2

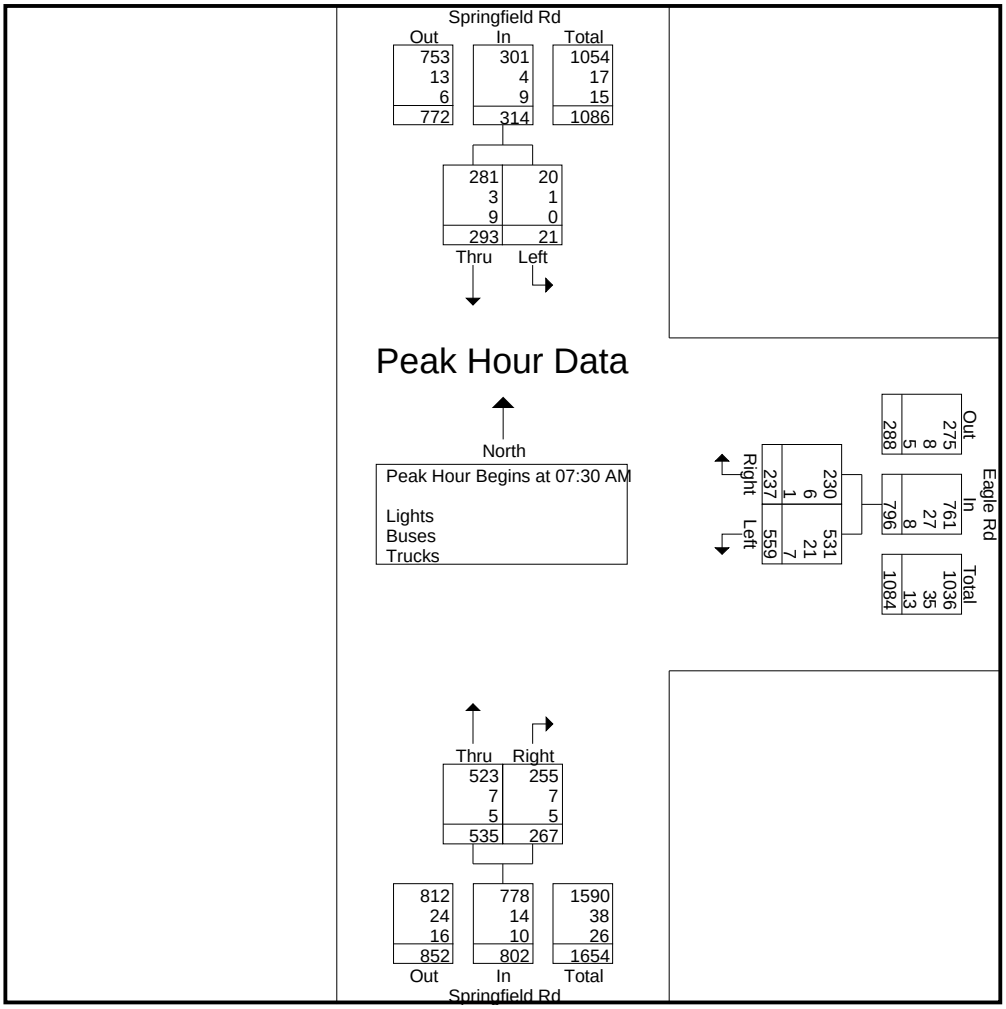


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 3

| | Eagle Rd Westbound | | | Springfield Rd Northbound | | | Springfield Rd Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 138 | 49 | 187 | 137 | **80** | 217 | 6 | 82 | **88** | 492 |
| 07:45 AM | **160** | **78** | **238** | **152** | 67 | **219** | **7** | 58 | 65 | **522** |
| 08:00 AM | 124 | 54 | 178 | 124 | 62 | 186 | 5 | **83** | 88 | 452 |
| 08:15 AM | 137 | 56 | 193 | 122 | 58 | 180 | 3 | 70 | 73 | 446 |
| Total Volume | 559 | 237 | 796 | 535 | 267 | 802 | 21 | 293 | 314 | 1912 |
| % App. Total | 70.2 | 29.8 | | 66.7 | 33.3 | | 6.7 | 93.3 | | |
| PHF | .873 | .760 | .836 | .880 | .834 | .916 | .750 | .883 | .892 | .916 |
| Lights | 531 | 230 | 761 | 523 | 255 | 778 | 20 | 281 | 301 | 1840 |
| % Lights | 95.0 | 97.0 | 95.6 | 97.8 | 95.5 | 97.0 | 95.2 | 95.9 | 95.9 | 96.2 |
| Buses | 21 | 6 | 27 | 7 | 7 | 14 | 1 | 3 | 4 | 45 |
| % Buses | 3.8 | 2.5 | 3.4 | 1.3 | 2.6 | 1.7 | 4.8 | 1.0 | 1.3 | 2.4 |
| Trucks | 7 | 1 | 8 | 5 | 5 | 10 | 0 | 9 | 9 | 27 |
| % Trucks | 1.3 | 0.4 | 1.0 | 0.9 | 1.9 | 1.2 | 0 | 3.1 | 2.9 | 1.4 |

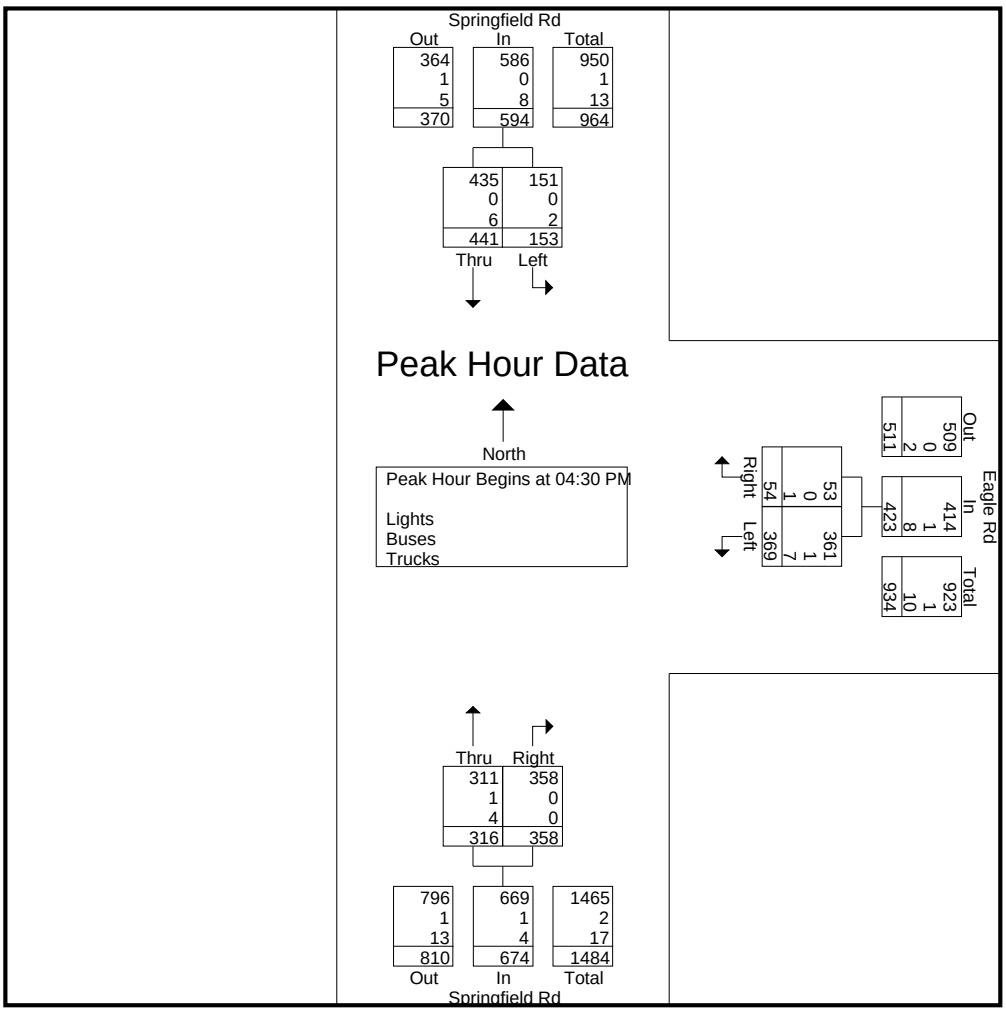


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 4

| | Eagle Rd Westbound | | | Springfield Rd Northbound | | | Springfield Rd Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | **106** | 12 | **118** | 75 | 80 | 155 | 38 | 108 | 146 | 419 |
| 04:45 PM | 72 | **17** | 89 | 75 | **103** | 178 | 29 | **120** | 149 | 416 |
| 05:00 PM | 106 | 11 | 117 | **88** | 94 | **182** | 41 | 103 | 144 | **443** |
| 05:15 PM | 85 | 14 | 99 | 78 | 81 | 159 | **45** | 110 | **155** | 413 |
| Total Volume | 369 | 54 | 423 | 316 | 358 | 674 | 153 | 441 | 594 | 1691 |
| % App. Total | 87.2 | 12.8 | | 46.9 | 53.1 | | 25.8 | 74.2 | | |
| PHF | .870 | .794 | .896 | .898 | .869 | .926 | .850 | .919 | .958 | .954 |
| Lights | 361 | 53 | 414 | 311 | 358 | 669 | 151 | 435 | 586 | 1669 |
| % Lights | 97.8 | 98.1 | 97.9 | 98.4 | 100 | 99.3 | 98.7 | 98.6 | 98.7 | 98.7 |
| Buses | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| % Buses | 0.3 | 0 | 0.2 | 0.3 | 0 | 0.1 | 0 | 0 | 0 | 0.1 |
| Trucks | 7 | 1 | 8 | 4 | 0 | 4 | 2 | 6 | 8 | 20 |
| % Trucks | 1.9 | 1.9 | 1.9 | 1.3 | 0 | 0.6 | 1.3 | 1.4 | 1.3 | 1.2 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

Location: Delaware County, PA
Intersection: Springfield Rd/Eagle Rd
Date: Tuesday, April 8th, 2014
Counter: MIO

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 1

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Eagle Rd Westbound | | | | Springfield Rd Northbound | | | | Springfield Rd Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 3 |
| 04:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

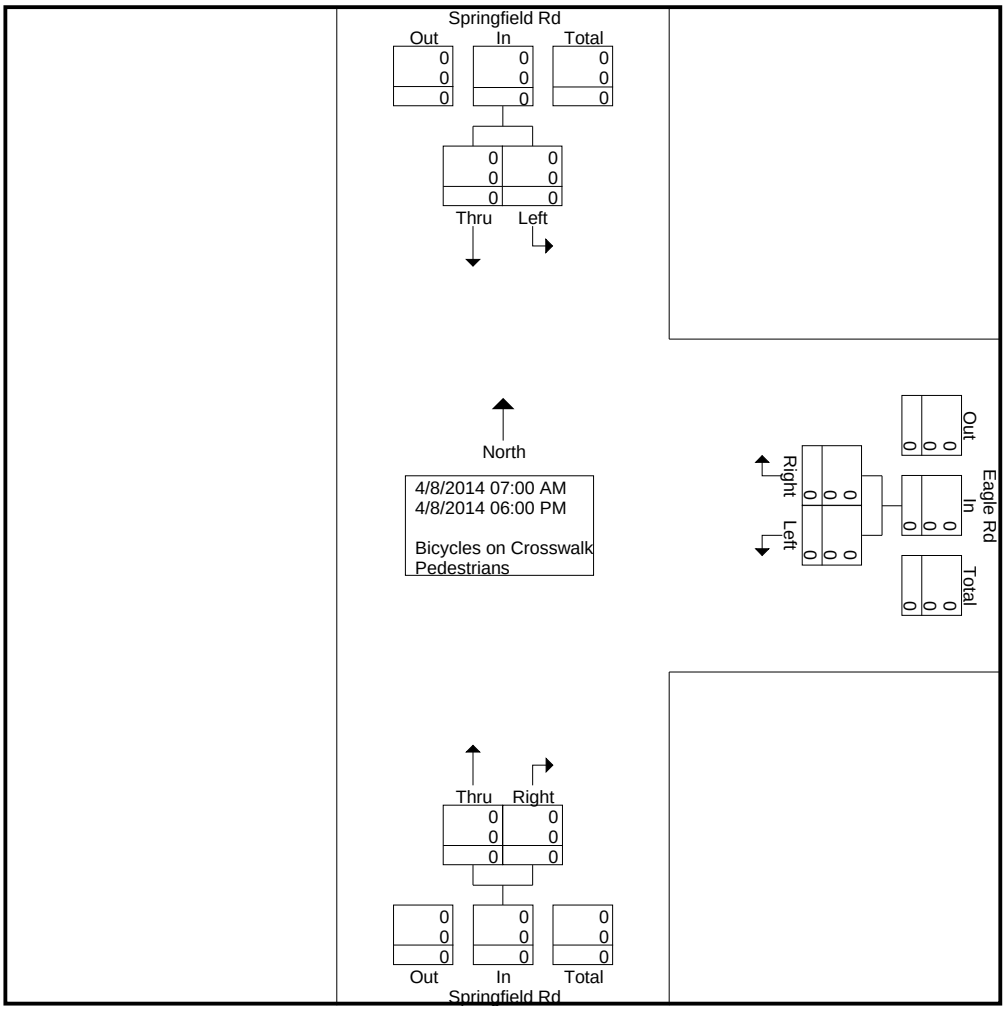
Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Springfield Road & Eagle Road
# Marple Township, Delaware County

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 2

Groups Printed- Bicycles on Crosswalk - Pedestrians

| | Eagle Rd Westbound | | | | Springfield Rd Northbound | | | | Springfield Rd Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0 | 5 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | 0 | 7 |
| Apprch % | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | | | | |
| Total % | | | | | | | | | | | | | 100 | 0 | |
| Bicycles on Crosswalk | | | | | | | | | | | | | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | | | | | | | | | | | | | 0 | 0 | 7 |
| % Pedestrians | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 100 |

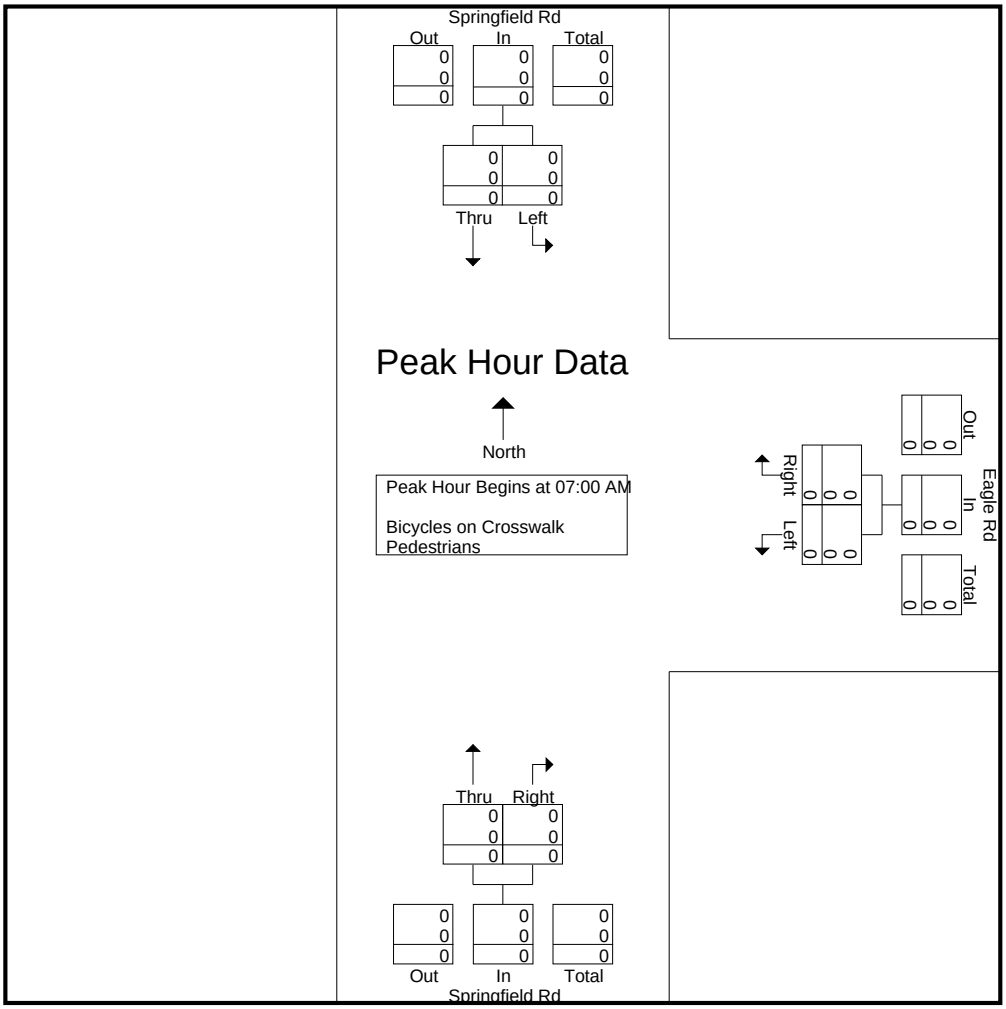


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Springfield Road & Eagle Road**
**Marple Township, Delaware County**

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 3

| | Eagle Rd Westbound | | | Springfield Rd Northbound | | | Springfield Rd Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

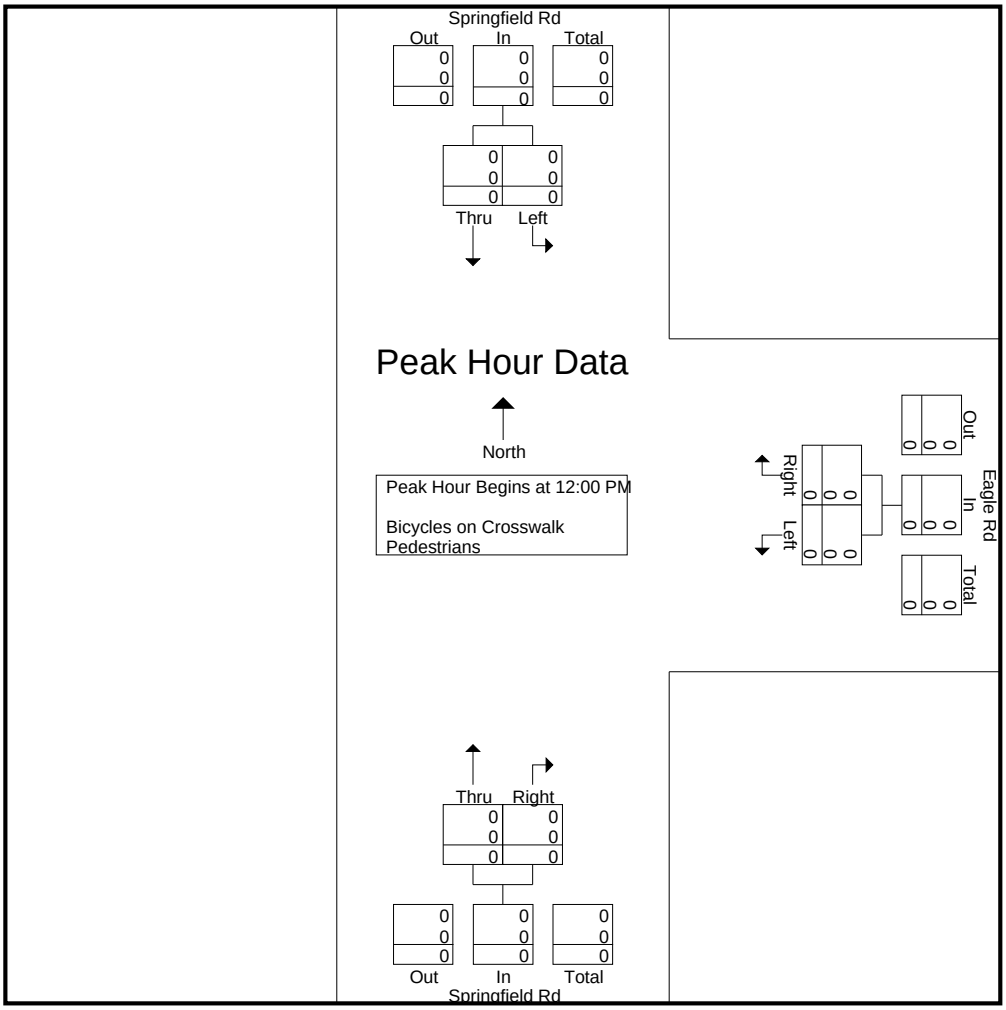


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

**Springfield Road & Eagle Road**
**Marple Township, Delaware County**

File Name : 101_MS 0408 12_Springfield & Eagle
Site Code : 12
Start Date : 4/8/2014
Page No : 4

| | Eagle Rd Westbound | | | Springfield Rd Northbound | | | Springfield Rd Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Eagle Road - SAT
Site Code:
Start Date: 09/13/2014

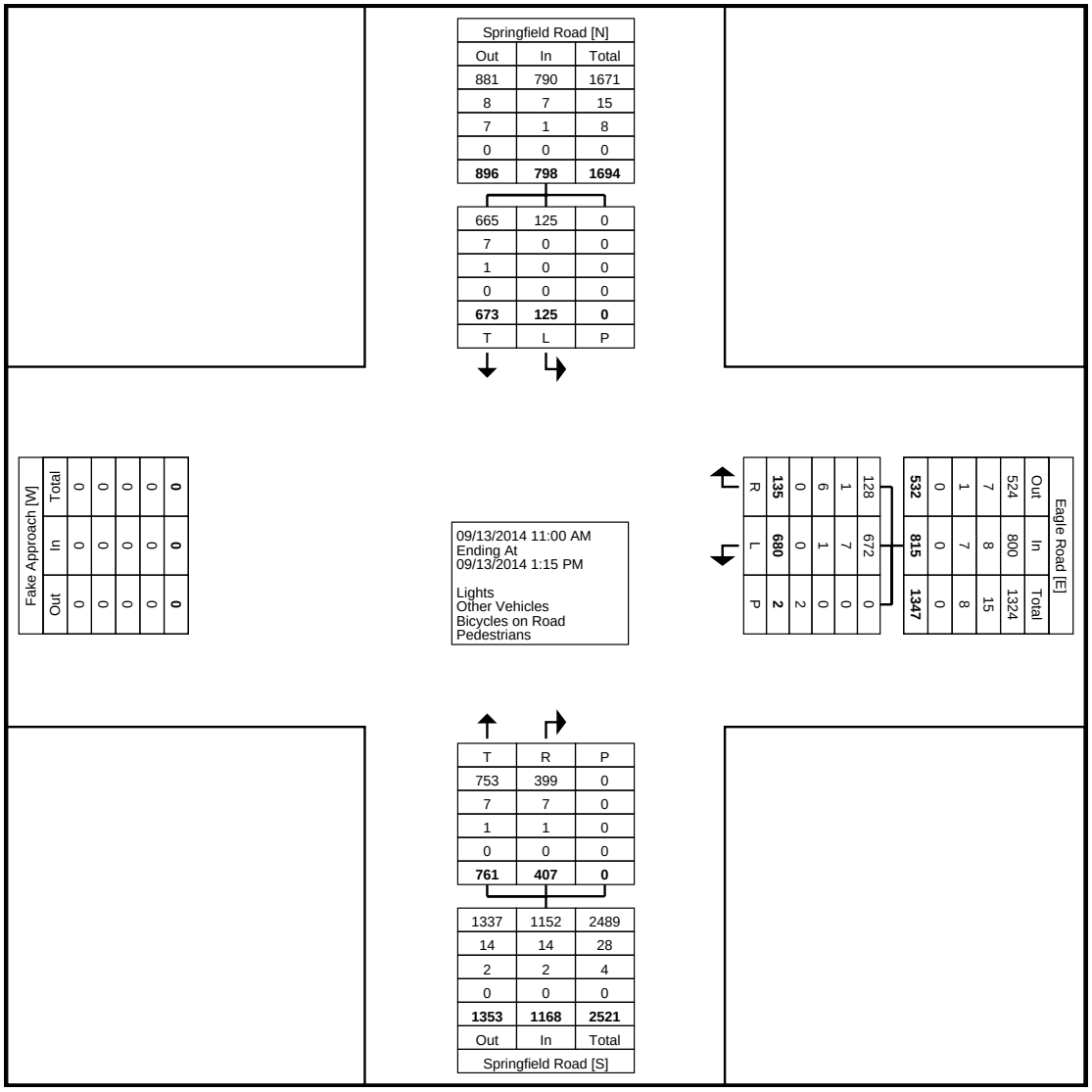

# Turning Movement Data

| Start Time | Eagle Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Int. Total |
| 11:00 AM | 73 | 10 | 1 | 83 | 63 | 52 | 0 | 115 | 13 | 72 | 0 | 85 | 283 |
| 11:15 AM | 124 | 19 | 0 | 143 | 110 | 39 | 0 | 149 | 7 | 75 | 0 | 82 | 374 |
| 11:30 AM | 77 | 28 | 0 | 105 | 104 | 46 | 0 | 150 | 10 | 62 | 0 | 72 | 327 |
| 11:45 AM | 71 | 15 | 0 | 86 | 100 | 55 | 0 | 155 | 15 | 101 | 0 | 116 | 357 |
| Hourly Total | 345 | 72 | 1 | 417 | 377 | 192 | 0 | 569 | 45 | 310 | 0 | 355 | 1341 |
| 12:00 PM | 81 | 12 | 1 | 93 | 134 | 50 | 0 | 184 | 16 | 104 | 0 | 120 | 397 |
| 12:15 PM | 91 | 22 | 0 | 113 | 95 | 48 | 0 | 143 | 19 | 83 | 0 | 102 | 358 |
| 12:30 PM | 82 | 18 | 0 | 100 | 68 | 68 | 0 | 136 | 15 | 81 | 0 | 96 | 332 |
| 12:45 PM | 81 | 11 | 0 | 92 | 87 | 49 | 0 | 136 | 29 | 95 | 0 | 124 | 352 |
| Hourly Total | 335 | 63 | 1 | 398 | 384 | 215 | 0 | 599 | 79 | 363 | 0 | 442 | 1439 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| Grand Total | 680 | 135 | 2 | 815 | 761 | 407 | 0 | 1168 | 125 | 673 | 0 | 798 | 2781 |
| Approach % | 83.4 | 16.6 | - | - | 65.2 | 34.8 | - | - | 15.7 | 84.3 | - | - | - |
| Total % | 24.5 | 4.9 | - | 29.3 | 27.4 | 14.6 | - | 42.0 | 4.5 | 24.2 | - | 28.7 | - |
| Lights | 672 | 128 | - | 800 | 753 | 399 | - | 1152 | 125 | 665 | - | 790 | 2742 |
| % Lights | 98.8 | 94.8 | - | 98.2 | 98.9 | 98.0 | - | 98.6 | 100.0 | 98.8 | - | 99.0 | 98.6 |
| Other Vehicles | 7 | 1 | - | 8 | 7 | 7 | - | 14 | 0 | 7 | - | 7 | 29 |
| % Other Vehicles | 1.0 | 0.7 | - | 1.0 | 0.9 | 1.7 | - | 1.2 | 0.0 | 1.0 | - | 0.9 | 1.0 |
| Bicycles on Road | 1 | 6 | - | 7 | 1 | 1 | - | 2 | 0 | 1 | - | 1 | 10 |
| % Bicycles on Road | 0.1 | 4.4 | - | 0.9 | 0.1 | 0.2 | - | 0.2 | 0.0 | 0.1 | - | 0.1 | 0.4 |
| Pedestrians | - | - | 2 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Eagle Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Eagle Road - SAT
Site Code:
Start Date: 09/13/2014


# Turning Movement Peak Hour Data (11:15 AM)

| Start Time | Eagle Road Westbound | | | | Springfield Road Northbound | | | | Springfield Road Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Int. Total |
| 11:15 AM | 124 | 19 | 0 | 143 | 110 | 39 | 0 | 149 | 7 | 75 | 0 | 82 | 374 |
| 11:30 AM | 77 | 28 | 0 | 105 | 104 | 46 | 0 | 150 | 10 | 62 | 0 | 72 | 327 |
| 11:45 AM | 71 | 15 | 0 | 86 | 100 | 55 | 0 | 155 | 15 | 101 | 0 | 116 | 357 |
| 12:00 PM | 81 | 12 | 1 | 93 | 134 | 50 | 0 | 184 | 16 | 104 | 0 | 120 | 397 |
| Total | 353 | 74 | 1 | 427 | 448 | 190 | 0 | 638 | 48 | 342 | 0 | 390 | 1455 |
| Approach % | 82.7 | 17.3 | - | - | 70.2 | 29.8 | - | - | 12.3 | 87.7 | - | - | - |
| Total % | 24.3 | 5.1 | - | 29.3 | 30.8 | 13.1 | - | 43.8 | 3.3 | 23.5 | - | 26.8 | - |
| PHF | 0.712 | 0.661 | - | 0.747 | 0.836 | 0.864 | - | 0.867 | 0.750 | 0.822 | - | 0.813 | 0.916 |
| Lights | 352 | 67 | - | 419 | 443 | 189 | - | 632 | 48 | 338 | - | 386 | 1437 |
| % Lights | 99.7 | 90.5 | - | 98.1 | 98.9 | 99.5 | - | 99.1 | 100.0 | 98.8 | - | 99.0 | 98.8 |
| Other Vehicles | 1 | 1 | - | 2 | 4 | 1 | - | 5 | 0 | 4 | - | 4 | 11 |
| % Other Vehicles | 0.3 | 1.4 | - | 0.5 | 0.9 | 0.5 | - | 0.8 | 0.0 | 1.2 | - | 1.0 | 0.8 |
| Bicycles on Road | 0 | 6 | - | 6 | 1 | 0 | - | 1 | 0 | 0 | - | 0 | 7 |
| % Bicycles on Road | 0.0 | 8.1 | - | 1.4 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.5 |
| Pedestrians | - | - | 1 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Springfield Road & Eagle Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 4

| Springfield Road [N] | | |
|---|---|---|
| Out | In | Total |
| 510 | 386 | 896 |
| 5 | 4 | 9 |
| 7 | 0 | 7 |
| 0 | 0 | 0 |
| **522** | **390** | **912** |

| | | |
|---|---|---|
| 338 | 48 | 0 |
| 4 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **342** | **48** | **0** |
| T | L | P |

## Peak Hour Data

09/13/2014 11:15 AM
Ending At
09/13/2014 12:15 PM

Lights
Other Vehicles
Bicycles on Road
Pedestrians

| Eagle Road [E] | | |
|---|---|---|
| Out | In | Total |
| 237 | 419 | 656 |
| 1 | 2 | 3 |
| 0 | 6 | 6 |
| 0 | 0 | 0 |
| **238** | **427** | **665** |

| | | |
|---|---|---|
| 67 | 352 | 0 |
| 1 | 1 | 0 |
| 6 | 0 | 0 |
| 0 | 0 | 1 |
| **74** | **353** | **1** |
| R | L | P |

| Fake Approach [W] | | |
|---|---|---|
| Out | In | Total |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **0** | **0** | **0** |

| | | |
|---|---|---|
| T | R | P |
| 443 | 189 | 0 |
| 4 | 1 | 0 |
| 1 | 0 | 0 |
| 0 | 0 | 0 |
| **448** | **190** | **0** |

| | | |
|---|---|---|
| 690 | 632 | 1322 |
| 5 | 5 | 10 |
| 0 | 1 | 1 |
| 0 | 0 | 0 |
| **695** | **638** | **1333** |
| Out | In | Total |
| Springfield Road [S] | | |

Turning Movement Peak Hour Data Plot (11:15 AM)

## *LAWRENCE ROAD & PARKWAY AVENUE*

# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue/Lawrence Rd
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 11
Site Code : 11
Start Date : 9/9/2014
Page No : 1

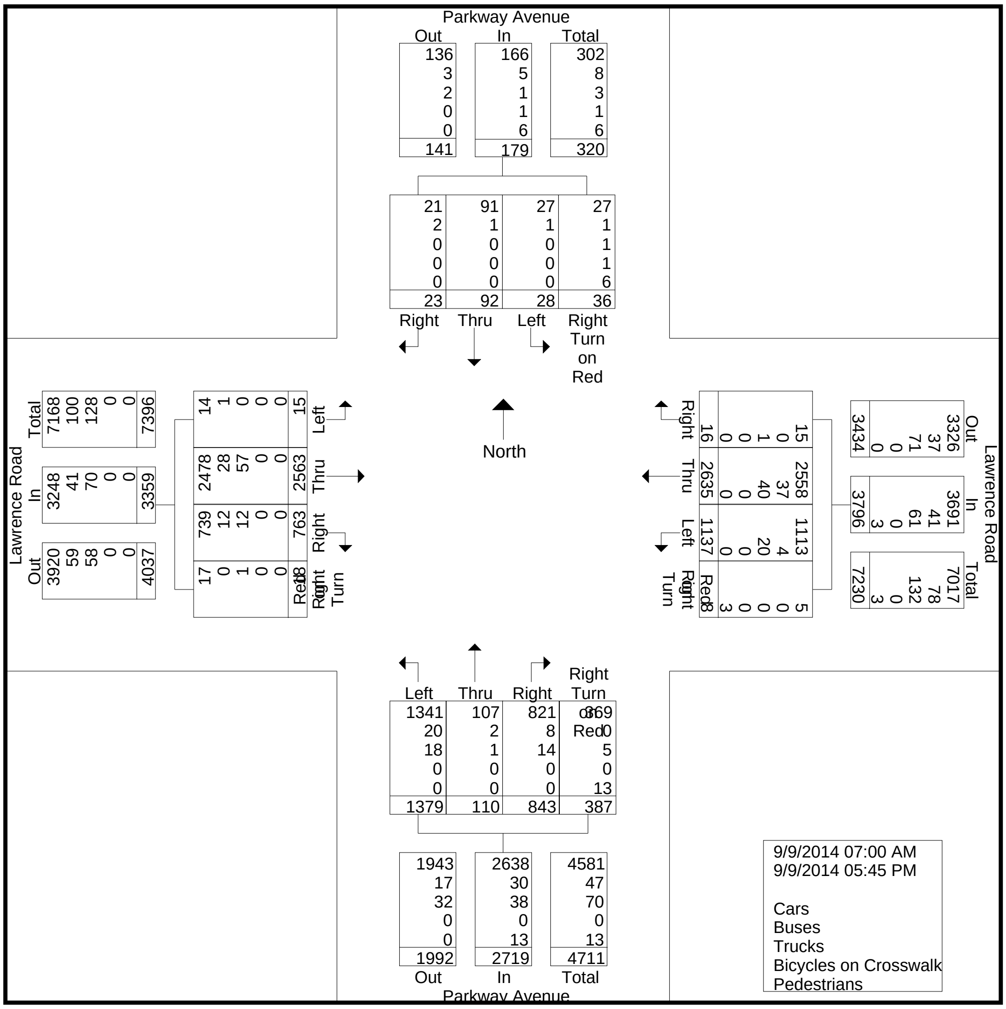
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Parkway Avenue Southbound | | | | | Lawrence Road Westbound | | | | | Parkway Avenue Northbound | | | | | Lawrence Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 07:00 AM | 1 | 2 | 1 | 5 | 9 | 0 | 107 | 18 | 0 | 125 | 57 | 3 | 83 | 21 | 164 | 12 | 145 | 0 | 0 | 157 | 455 |
| 07:15 AM | 1 | 0 | 3 | 1 | 5 | 1 | 124 | 25 | 0 | 150 | 57 | 3 | 99 | 27 | 186 | 21 | 125 | 1 | 0 | 147 | 488 |
| 07:30 AM | 7 | 3 | 5 | 0 | 15 | 0 | 115 | 29 | 0 | 144 | 67 | 3 | 93 | 13 | 176 | 17 | 165 | 1 | 0 | 183 | 518 |
| 07:45 AM | 0 | 1 | 3 | 0 | 4 | 0 | 101 | 21 | 1 | 123 | 80 | 5 | 114 | 17 | 216 | 27 | 187 | 0 | 0 | 214 | 557 |
| Total | 9 | 6 | 12 | 6 | 33 | 1 | 447 | 93 | 1 | 542 | 261 | 14 | 389 | 78 | 742 | 77 | 622 | 2 | 0 | 701 | 2018 |
| 08:00 AM | 0 | 3 | 1 | 1 | 5 | 1 | 115 | 32 | 0 | 148 | 93 | 5 | 81 | 13 | 192 | 26 | 198 | 1 | 0 | 225 | 570 |
| 08:15 AM | 0 | 3 | 0 | 2 | 5 | 1 | 128 | 31 | 0 | 160 | 69 | 3 | 92 | 16 | 180 | 24 | 178 | 0 | 0 | 202 | 547 |
| 08:30 AM | 0 | 3 | 4 | 4 | 11 | 1 | 141 | 51 | 1 | 194 | 58 | 2 | 99 | 12 | 171 | 26 | 142 | 0 | 0 | 168 | 544 |
| 08:45 AM | 0 | 3 | 1 | 5 | 9 | 1 | 129 | 44 | 0 | 174 | 51 | 9 | 78 | 10 | 148 | 30 | 150 | 0 | 0 | 180 | 511 |
| Total | 0 | 12 | 6 | 12 | 30 | 4 | 513 | 158 | 1 | 676 | 271 | 19 | 350 | 51 | 691 | 106 | 668 | 1 | 0 | 775 | 2172 |
| 03:00 PM | 1 | 4 | 1 | 0 | 6 | 0 | 120 | 41 | 0 | 161 | 38 | 6 | 37 | 13 | 94 | 34 | 105 | 2 | 2 | 143 | 404 |
| 03:15 PM | 2 | 0 | 1 | 1 | 4 | 0 | 122 | 45 | 0 | 167 | 19 | 8 | 40 | 20 | 87 | 36 | 89 | 0 | 2 | 127 | 385 |
| 03:30 PM | 5 | 2 | 0 | 0 | 7 | 2 | 130 | 54 | 3 | 189 | 14 | 7 | 49 | 18 | 88 | 27 | 95 | 1 | 0 | 123 | 407 |
| 03:45 PM | 1 | 4 | 0 | 1 | 6 | 0 | 132 | 70 | 1 | 203 | 23 | 3 | 49 | 18 | 93 | 58 | 95 | 0 | 2 | 155 | 457 |
| Total | 9 | 10 | 2 | 2 | 23 | 2 | 504 | 210 | 4 | 720 | 94 | 24 | 175 | 69 | 362 | 155 | 384 | 3 | 6 | 548 | 1653 |
| 04:00 PM | 1 | 4 | 0 | 3 | 8 | 1 | 150 | 73 | 1 | 225 | 14 | 7 | 51 | 34 | 106 | 45 | 105 | 1 | 2 | 153 | 492 |
| 04:15 PM | 0 | 5 | 0 | 2 | 7 | 1 | 133 | 72 | 0 | 206 | 12 | 10 | 35 | 25 | 82 | 56 | 118 | 0 | 0 | 174 | 469 |
| 04:30 PM | 0 | 6 | 1 | 0 | 7 | 2 | 133 | 85 | 1 | 221 | 17 | 8 | 65 | 31 | 121 | 51 | 110 | 0 | 1 | 162 | 511 |
| 04:45 PM | 2 | 11 | 2 | 3 | 18 | 0 | 138 | 88 | 0 | 226 | 25 | 5 | 56 | 24 | 110 | 53 | 132 | 2 | 0 | 187 | 541 |
| Total | 3 | 26 | 3 | 8 | 40 | 4 | 554 | 318 | 2 | 878 | 68 | 30 | 207 | 114 | 419 | 205 | 465 | 3 | 3 | 676 | 2013 |
| 05:00 PM | 0 | 8 | 2 | 1 | 11 | 2 | 180 | 90 | 0 | 272 | 34 | 5 | 68 | 17 | 124 | 53 | 111 | 3 | 5 | 172 | 579 |
| 05:15 PM | 1 | 12 | 1 | 1 | 15 | 3 | 152 | 83 | 0 | 238 | 33 | 6 | 62 | 26 | 127 | 65 | 112 | 1 | 3 | 181 | 561 |
| 05:30 PM | 1 | 7 | 1 | 4 | 13 | 0 | 156 | 98 | 0 | 254 | 40 | 6 | 69 | 25 | 140 | 43 | 103 | 1 | 1 | 148 | 555 |
| 05:45 PM | 0 | 11 | 1 | 2 | 14 | 0 | 129 | 87 | 0 | 216 | 42 | 6 | 59 | 7 | 114 | 59 | 98 | 1 | 0 | 158 | 502 |
| Total | 2 | 38 | 5 | 8 | 53 | 5 | 617 | 358 | 0 | 980 | 149 | 23 | 258 | 75 | 505 | 220 | 424 | 6 | 9 | 659 | 2197 |
| Grand Total | 23 | 92 | 28 | 36 | 179 | 16 | 2635 | 1137 | 8 | 3796 | 843 | 110 | 1379 | 387 | 2719 | 763 | 2563 | 15 | 18 | 3359 | 10053 |
| Apprch % | 12.8 | 51.4 | 15.6 | 20.1 | | 0.4 | 69.4 | 30 | 0.2 | | 31 | 4 | 50.7 | 14.2 | | 22.7 | 76.3 | 0.4 | 0.5 | | |
| Total % | 0.2 | 0.9 | 0.3 | 0.4 | 1.8 | 0.2 | 26.2 | 11.3 | 0.1 | 37.8 | 8.4 | 1.1 | 13.7 | 3.8 | 27 | 7.6 | 25.5 | 0.1 | 0.2 | 33.4 | |
| Cars | 21 | 91 | 27 | 27 | 166 | 15 | 2558 | 1113 | 5 | 3691 | 821 | 107 | 1341 | 369 | 2638 | 739 | 2478 | 14 | 17 | 3248 | 9743 |
| % Cars | 91.3 | 98.9 | 96.4 | 75 | 92.7 | 93.8 | 97.1 | 97.9 | 62.5 | 97.2 | 97.4 | 97.3 | 97.2 | 95.3 | 97 | 96.9 | 96.7 | 93.3 | 94.4 | 96.7 | 96.9 |
| Buses | 2 | 1 | 1 | 1 | 5 | 0 | 37 | 4 | 0 | 41 | 8 | 2 | 20 | 0 | 30 | 12 | 28 | 1 | 0 | 41 | 117 |
| % Buses | 8.7 | 1.1 | 3.6 | 2.8 | 2.8 | 0 | 1.4 | 0.4 | 0 | 1.1 | 0.9 | 1.8 | 1.5 | 0 | 1.1 | 1.6 | 1.1 | 6.7 | 0 | 1.2 | 1.2 |
| Trucks | 0 | 0 | 0 | 1 | 1 | 1 | 40 | 20 | 0 | 61 | 14 | 1 | 18 | 5 | 38 | 12 | 57 | 0 | 1 | 70 | 170 |
| % Trucks | 0 | 0 | 0 | 2.8 | 0.6 | 6.2 | 1.5 | 1.8 | 0 | 1.6 | 1.7 | 0.9 | 1.3 | 1.3 | 1.4 | 1.6 | 2.2 | 0 | 5.6 | 2.1 | 1.7 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 2.8 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 22 |
| % Pedestrians | 0 | 0 | 0 | 16.7 | 3.4 | 0 | 0 | 0 | 37.5 | 0.1 | 0 | 0 | 0 | 3.4 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0.2 |

# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

| | |
|---|---|
| Location: Delaware County, PA | File Name : Del Co 11 |
| Intersection: Parkway Avenue/Lawrence Rd | Site Code : 11 |
| Date: Tuesday, September 9, 2014 | Start Date : 9/9/2014 |
| Counter: MIO PB | Page No : 2 |



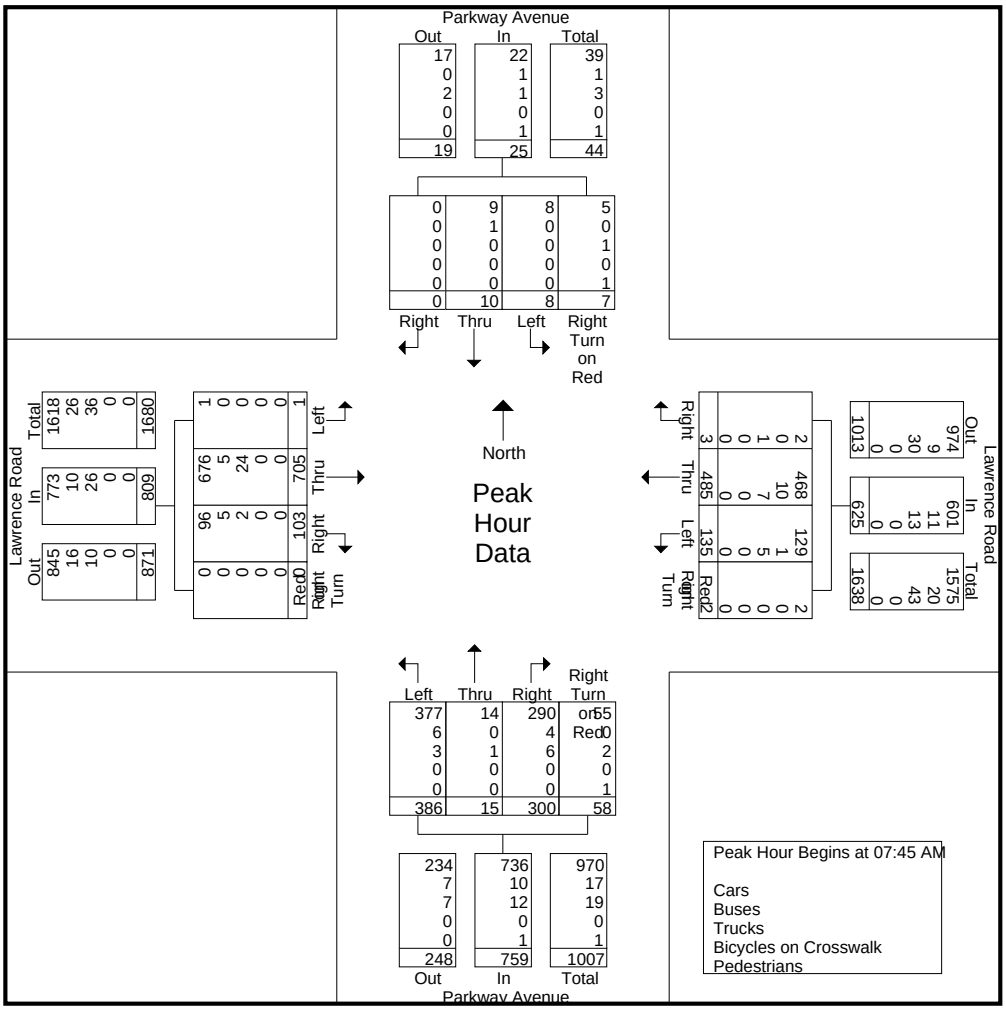
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue/Lawrence Rd
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 11
Site Code : 11
Start Date : 9/9/2014
Page No : 4

| | Parkway Avenue Southbound | | | | | Lawrence Road Westbound | | | | | Parkway Avenue Northbound | | | | | Lawrence Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 1 | 3 | 0 | 4 | 0 | 101 | 21 | **1** | 123 | 80 | **5** | **114** | **17** | **216** | **27** | 187 | 0 | 0 | 214 | 557 |
| 08:00 AM | 0 | **3** | 1 | 1 | 5 | **1** | 115 | 32 | 0 | 148 | **93** | 5 | 81 | 13 | 192 | 26 | **198** | **1** | 0 | **225** | **570** |
| 08:15 AM | 0 | 3 | 0 | 2 | 5 | 1 | 128 | 31 | 0 | 160 | 69 | 3 | 92 | 16 | 180 | 24 | 178 | 0 | 0 | 202 | 547 |
| 08:30 AM | 0 | 3 | **4** | **4** | **11** | 1 | **141** | **51** | 1 | **194** | 58 | 2 | 99 | 12 | 171 | 26 | 142 | 0 | 0 | 168 | 544 |
| Total Volume | 0 | 10 | 8 | 7 | 25 | 3 | 485 | 135 | 2 | 625 | 300 | 15 | 386 | 58 | 759 | 103 | 705 | 1 | 0 | 809 | 2218 |
| % App. Total | 0 | 40 | 32 | 28 | | 0.5 | 77.6 | 21.6 | 0.3 | | 39.5 | 2 | 50.9 | 7.6 | | 12.7 | 87.1 | 0.1 | 0 | | |
| PHF | .000 | .833 | .500 | .438 | .568 | .750 | .860 | .662 | .500 | .805 | .806 | .750 | .846 | .853 | .878 | .954 | .890 | .250 | .000 | .899 | .973 |
| Cars | 0 | 9 | 8 | 5 | 22 | 2 | 468 | 129 | 2 | 601 | 290 | 14 | 377 | 55 | 736 | 96 | 676 | 1 | 0 | 773 | 2132 |
| % Cars | 0 | 90.0 | 100 | 71.4 | 88.0 | 66.7 | 96.5 | 95.6 | 100 | 96.2 | 96.7 | 93.3 | 97.7 | 94.8 | 97.0 | 93.2 | 95.9 | 100 | 0 | 95.6 | 96.1 |
| Buses | 0 | 1 | 0 | 0 | 1 | 0 | 10 | 1 | 0 | 11 | 4 | 0 | 6 | 0 | 10 | 5 | 5 | 0 | 0 | 10 | 32 |
| % Buses | 0 | 10.0 | 0 | 0 | 4.0 | 0 | 2.1 | 0.7 | 0 | 1.8 | 1.3 | 0 | 1.6 | 0 | 1.3 | 4.9 | 0.7 | 0 | 0 | 1.2 | 1.4 |
| Trucks | 0 | 0 | 0 | 1 | 1 | 1 | 7 | 5 | 0 | 13 | 6 | 1 | 3 | 2 | 12 | 2 | 24 | 0 | 0 | 26 | 52 |
| % Trucks | 0 | 0 | 0 | 14.3 | 4.0 | 33.3 | 1.4 | 3.7 | 0 | 2.1 | 2.0 | 6.7 | 0.8 | 3.4 | 1.6 | 1.9 | 3.4 | 0 | 0 | 3.2 | 2.3 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 0 | 14.3 | 4.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.7 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 |



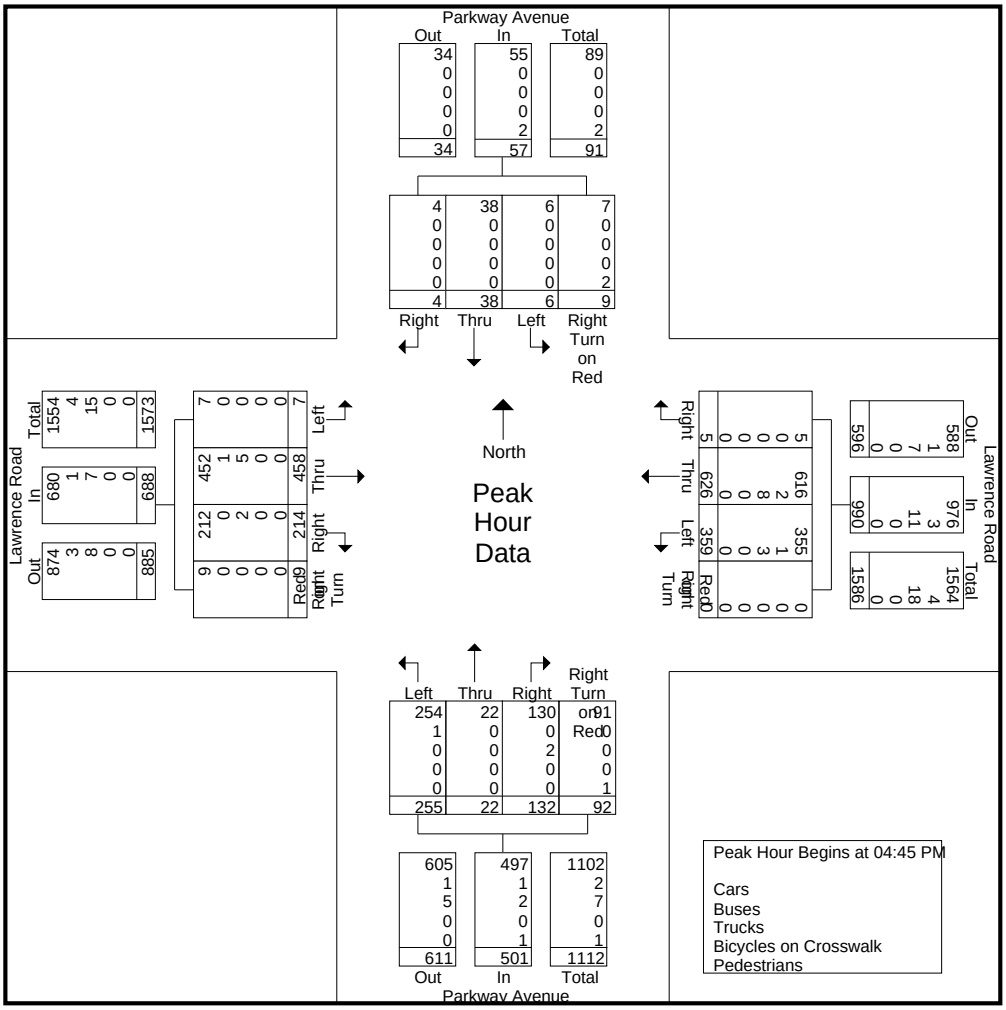
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue/Lawrence Rd
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 11
Site Code : 11
Start Date : 9/9/2014
Page No : 5

| | Parkway Avenue Southbound | | | | | Lawrence Road Westbound | | | | | Parkway Avenue Northbound | | | | | Lawrence Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | **2** | 11 | **2** | 3 | **18** | 0 | 138 | 88 | 0 | 226 | 25 | 5 | 56 | 24 | 110 | 53 | **132** | 2 | 0 | **187** | 541 |
| 05:00 PM | 0 | 8 | 2 | 1 | 11 | 2 | **180** | 90 | 0 | **272** | 34 | 5 | 68 | 17 | 124 | 53 | 111 | **3** | **5** | 172 | **579** |
| 05:15 PM | 1 | **12** | 1 | 1 | 15 | **3** | 152 | 83 | 0 | 238 | 33 | **6** | 62 | **26** | 127 | **65** | 112 | 1 | 3 | 181 | 561 |
| 05:30 PM | 1 | 7 | 1 | **4** | 13 | 0 | 156 | **98** | 0 | 254 | **40** | 6 | **69** | 25 | **140** | 43 | 103 | 1 | 1 | 148 | 555 |
| Total Volume | 4 | 38 | 6 | 9 | 57 | 5 | 626 | 359 | 0 | 990 | 132 | 22 | 255 | 92 | 501 | 214 | 458 | 7 | 9 | 688 | 2236 |
| % App. Total | 7 | 66.7 | 10.5 | 15.8 | | 0.5 | 63.2 | 36.3 | 0 | | 26.3 | 4.4 | 50.9 | 18.4 | | 31.1 | 66.6 | 1 | 1.3 | | |
| PHF | .500 | .792 | .750 | .563 | .792 | .417 | .869 | .916 | .000 | .910 | .825 | .917 | .924 | .885 | .895 | .823 | .867 | .583 | .450 | .920 | .965 |
| Cars | 4 | 38 | 6 | 7 | 55 | 5 | 616 | 355 | 0 | 976 | 130 | 22 | 254 | 91 | 497 | 212 | 452 | 7 | 9 | 680 | 2208 |
| % Cars | 100 | 100 | 100 | 77.8 | 96.5 | 100 | 98.4 | 98.9 | 0 | 98.6 | 98.5 | 100 | 99.6 | 98.9 | 99.2 | 99.1 | 98.7 | 100 | 100 | 98.8 | 98.7 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 5 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.3 | 0 | 0.3 | 0 | 0 | 0.4 | 0 | 0.2 | 0 | 0.2 | 0 | 0 | 0.1 | 0.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | 0 | 11 | 2 | 0 | 0 | 0 | 2 | 2 | 5 | 0 | 0 | 7 | 20 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1.3 | 0.8 | 0 | 1.1 | 1.5 | 0 | 0 | 0 | 0.4 | 0.9 | 1.1 | 0 | 0 | 1.0 | 0.9 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| % Pedestrians | 0 | 0 | 0 | 22.2 | 3.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.1 |



# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/Lawrence Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 11 Sat
Site Code : 11
Start Date : 9/6/2014
Page No : 1

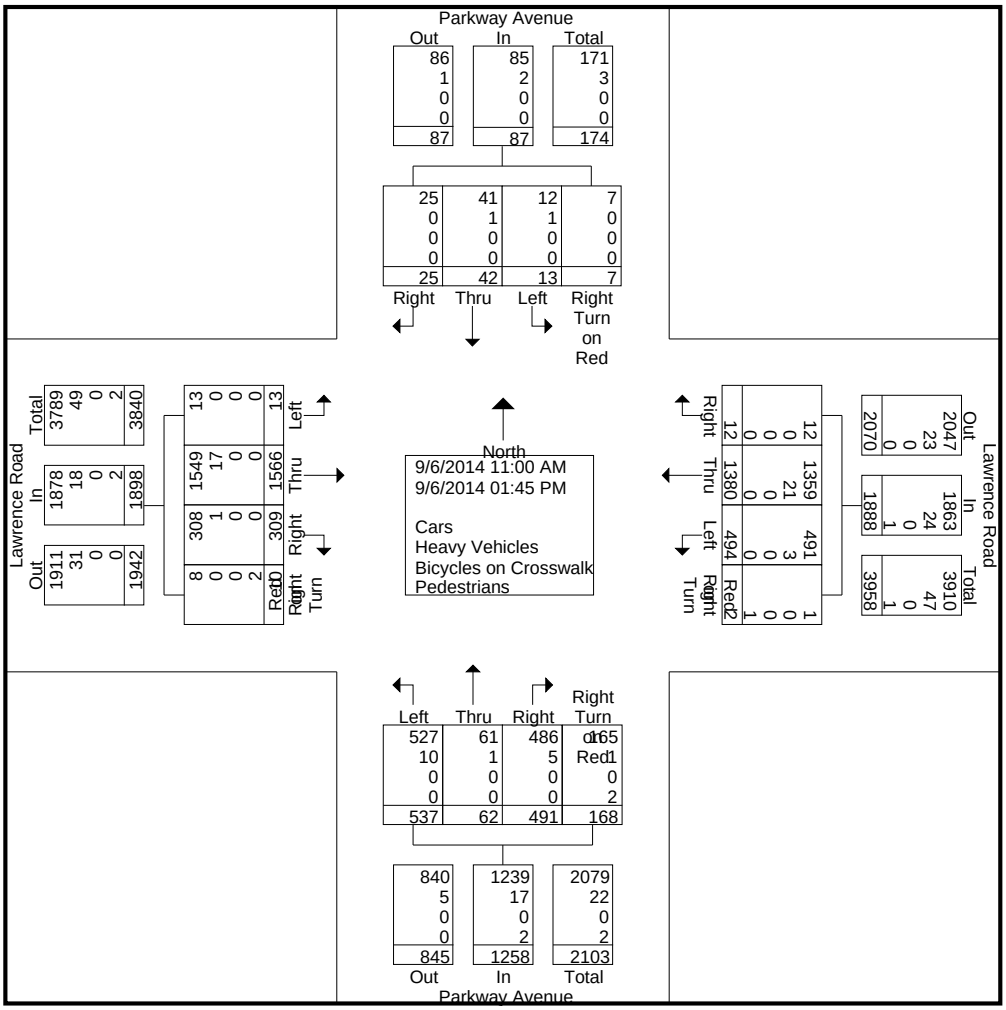
Groups Printed- Cars - Heavy Vehicles - Bicycles on Crosswalk - Pedestrians

| | Parkway Avenue Southbound | | | | | Lawrence Road Westbound | | | | | Parkway Avenue Northbound | | | | | Lawrence Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 11:00 AM | 2 | 2 | 2 | 0 | 6 | 0 | 83 | 43 | 0 | 126 | 29 | 2 | 41 | 21 | 93 | 21 | 143 | 1 | 0 | 165 | 390 |
| 11:15 AM | 1 | 3 | 1 | 0 | 5 | 1 | 89 | 38 | 1 | 129 | 20 | 5 | 42 | 16 | 83 | 25 | 141 | 1 | 0 | 167 | 384 |
| 11:30 AM | 5 | 5 | 2 | 1 | 13 | 0 | 96 | 42 | 0 | 138 | 33 | 4 | 52 | 8 | 97 | 26 | 130 | 1 | 1 | 158 | 406 |
| 11:45 AM | 4 | 6 | 1 | 0 | 11 | 2 | 107 | 59 | 0 | 168 | 43 | 2 | 44 | 21 | 110 | 25 | 122 | 1 | 1 | 149 | 438 |
| Total | 12 | 16 | 6 | 1 | 35 | 3 | 375 | 182 | 1 | 561 | 125 | 13 | 179 | 66 | 383 | 97 | 536 | 4 | 2 | 639 | 1618 |
| 12:00 PM | 2 | 1 | 2 | 2 | 7 | 2 | 140 | 46 | 0 | 188 | 57 | 9 | 53 | 17 | 136 | 28 | 124 | 2 | 3 | 157 | 488 |
| 12:15 PM | 0 | 4 | 2 | 0 | 6 | 2 | 190 | 40 | 0 | 232 | 48 | 5 | 48 | 22 | 123 | 35 | 117 | 0 | 0 | 152 | 513 |
| 12:30 PM | 5 | 3 | 1 | 0 | 9 | 2 | 106 | 33 | 1 | 142 | 62 | 9 | 58 | 21 | 150 | 38 | 117 | 1 | 0 | 156 | 457 |
| 12:45 PM | 2 | 6 | 1 | 0 | 9 | 1 | 111 | 43 | 0 | 155 | 39 | 11 | 53 | 14 | 117 | 21 | 121 | 2 | 2 | 146 | 427 |
| Total | 9 | 14 | 6 | 2 | 31 | 7 | 547 | 162 | 1 | 717 | 206 | 34 | 212 | 74 | 526 | 122 | 479 | 5 | 5 | 611 | 1885 |
| 01:00 PM | 0 | 3 | 1 | 0 | 4 | 0 | 124 | 45 | 0 | 169 | 56 | 9 | 38 | 7 | 110 | 22 | 150 | 2 | 1 | 175 | 458 |
| 01:15 PM | 2 | 2 | 0 | 1 | 5 | 1 | 97 | 43 | 0 | 141 | 43 | 0 | 35 | 5 | 83 | 21 | 149 | 0 | 1 | 171 | 400 |
| 01:30 PM | 1 | 4 | 0 | 2 | 7 | 0 | 114 | 26 | 0 | 140 | 30 | 5 | 42 | 9 | 86 | 18 | 140 | 1 | 1 | 160 | 393 |
| 01:45 PM | 1 | 3 | 0 | 1 | 5 | 1 | 123 | 36 | 0 | 160 | 31 | 1 | 31 | 7 | 70 | 29 | 112 | 1 | 0 | 142 | 377 |
| Total | 4 | 12 | 1 | 4 | 21 | 2 | 458 | 150 | 0 | 610 | 160 | 15 | 146 | 28 | 349 | 90 | 551 | 4 | 3 | 648 | 1628 |
| Grand Total | 25 | 42 | 13 | 7 | 87 | 12 | 1380 | 494 | 2 | 1888 | 491 | 62 | 537 | 168 | 1258 | 309 | 1566 | 13 | 10 | 1898 | 5131 |
| Apprch % | 28.7 | 48.3 | 14.9 | 8 | | 0.6 | 73.1 | 26.2 | 0.1 | | 39 | 4.9 | 42.7 | 13.4 | | 16.3 | 82.5 | 0.7 | 0.5 | | |
| Total % | 0.5 | 0.8 | 0.3 | 0.1 | 1.7 | 0.2 | 26.9 | 9.6 | 0 | 36.8 | 9.6 | 1.2 | 10.5 | 3.3 | 24.5 | 6 | 30.5 | 0.3 | 0.2 | 37 | |
| Cars | 25 | 41 | 12 | 7 | 85 | 12 | 1359 | 491 | 1 | 1863 | 486 | 61 | 527 | 165 | 1239 | 308 | 1549 | 13 | 8 | 1878 | 5065 |
| % Cars | 100 | 97.6 | 92.3 | 100 | 97.7 | 100 | 98.5 | 99.4 | 50 | 98.7 | 99 | 98.4 | 98.1 | 98.2 | 98.5 | 99.7 | 98.9 | 100 | 80 | 98.9 | 98.7 |
| Heavy Vehicles | 0 | 1 | 1 | 0 | 2 | 0 | 21 | 3 | 0 | 24 | 5 | 1 | 10 | 1 | 17 | 1 | 17 | 0 | 0 | 18 | 61 |
| % Heavy Vehicles | 0 | 2.4 | 7.7 | 0 | 2.3 | 0 | 1.5 | 0.6 | 0 | 1.3 | 1 | 1.6 | 1.9 | 0.6 | 1.4 | 0.3 | 1.1 | 0 | 0 | 0.9 | 1.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 5 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0.1 | 0 | 0 | 0 | 1.2 | 0.2 | 0 | 0 | 0 | 20 | 0.1 | 0.1 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/Lawrence Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 11 Sat
Site Code : 11
Start Date : 9/6/2014
Page No : 2



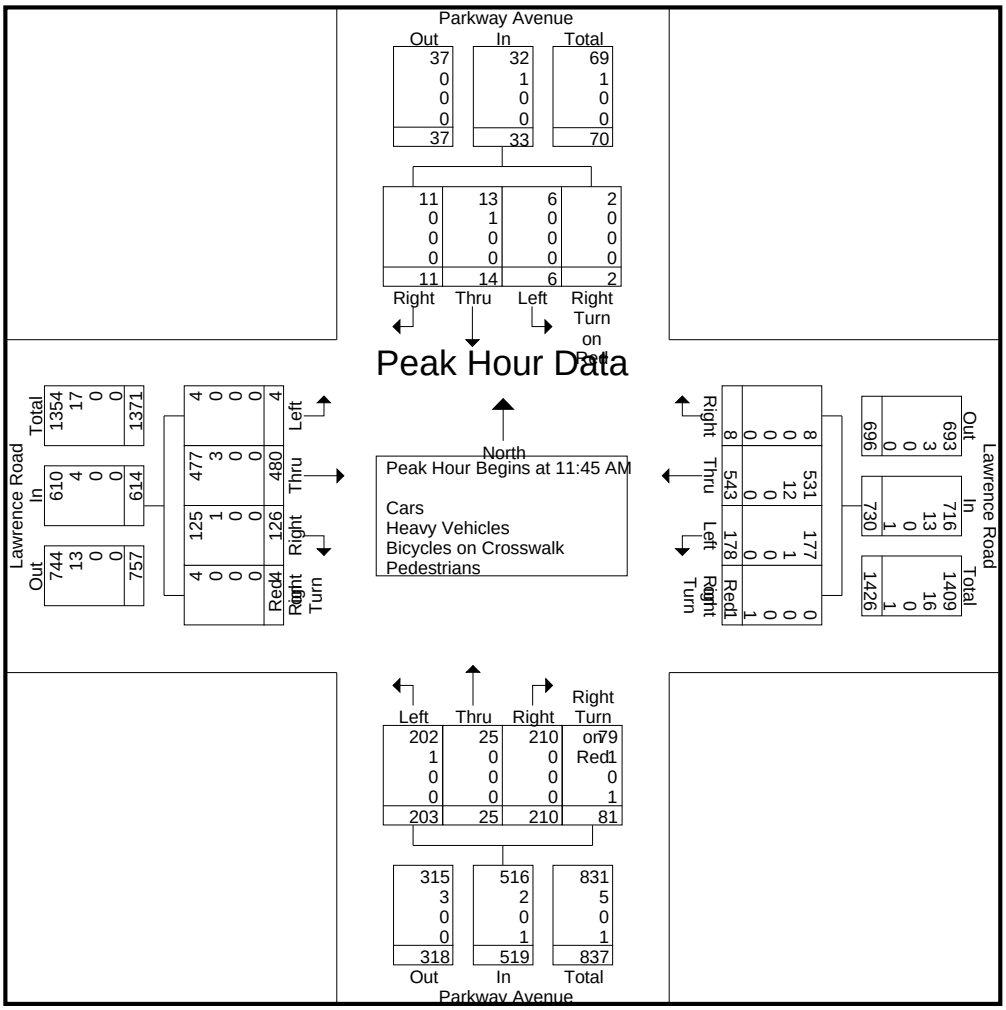
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/Lawrence Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 11 Sat
Site Code : 11
Start Date : 9/6/2014
Page No : 4

| | Parkway Avenue Southbound | | | | | Lawrence Road Westbound | | | | | Parkway Avenue Northbound | | | | | Lawrence Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 11:45 AM | 4 | **6** | 1 | 0 | **11** | **2** | 107 | **59** | 0 | 168 | 43 | 2 | 44 | 21 | 110 | 25 | 122 | 1 | 1 | 149 | 438 |
| 12:00 PM | 2 | 1 | **2** | **2** | 7 | 2 | 140 | 46 | 0 | 188 | 57 | **9** | 53 | 17 | 136 | 28 | **124** | **2** | **3** | **157** | 488 |
| 12:15 PM | 0 | 4 | 2 | 0 | 6 | 2 | **190** | 40 | 0 | **232** | 48 | 5 | 48 | **22** | 123 | 35 | 117 | 0 | 0 | 152 | **513** |
| 12:30 PM | **5** | 3 | 1 | 0 | 9 | 2 | 106 | 33 | **1** | 142 | **62** | 9 | **58** | 21 | **150** | **38** | 117 | 1 | 0 | 156 | 457 |
| Total Volume | 11 | 14 | 6 | 2 | 33 | 8 | 543 | 178 | 1 | 730 | 210 | 25 | 203 | 81 | 519 | 126 | 480 | 4 | 4 | 614 | 1896 |
| % App. Total | 33.3 | 42.4 | 18.2 | 6.1 | | 1.1 | 74.4 | 24.4 | 0.1 | | 40.5 | 4.8 | 39.1 | 15.6 | | 20.5 | 78.2 | 0.7 | 0.7 | | |
| PHF | .550 | .583 | .750 | .250 | .750 | 1.00 | .714 | .754 | .250 | .787 | .847 | .694 | .875 | .920 | .865 | .829 | .968 | .500 | .333 | .978 | .924 |
| Cars | 11 | 13 | 6 | 2 | 32 | 8 | 531 | 177 | 0 | 716 | 210 | 25 | 202 | 79 | 516 | 125 | 477 | 4 | 4 | 610 | 1874 |
| % Cars | 100 | 92.9 | 100 | 100 | 97.0 | 100 | 97.8 | 99.4 | 0 | 98.1 | 100 | 100 | 99.5 | 97.5 | 99.4 | 99.2 | 99.4 | 100 | 100 | 99.3 | 98.8 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 0 | 7.1 | 0 | 0 | 3.0 | 0 | 2.2 | 0.6 | 0 | 1.8 | 0 | 0 | 0.5 | 1.2 | 0.4 | 0.8 | 0.6 | 0 | 0 | 0.7 | 1.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0 | 1.2 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.1 |



***REED ROAD/REDHILL DRIVE &***
***PARKWAY AVENUE/REED ROAD***

# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave N/Reed Rd
Date:Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 12
Site Code : 12
Start Date : 9/9/2014
Page No : 1

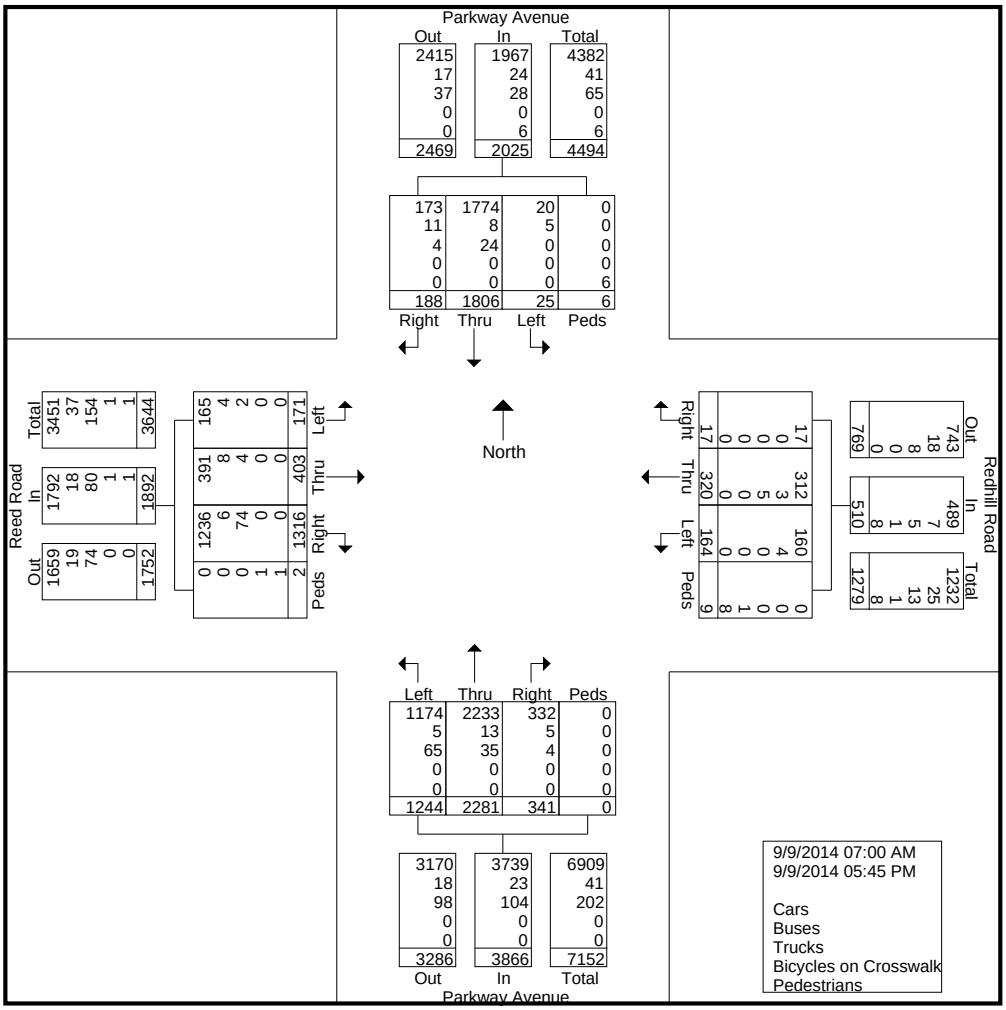
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Parkway Avenue Southbound | | | | | Redhill Road Westbound | | | | | Parkway Avenue Northbound | | | | | Reed Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 6 | 30 | 1 | 0 | 37 | 0 | 19 | 4 | 0 | 23 | 12 | 133 | 40 | 0 | 185 | 43 | 4 | 11 | 0 | 58 | 303 |
| 07:15 AM | 10 | 42 | 2 | 1 | 55 | 1 | 20 | 6 | 0 | 27 | 32 | 168 | 56 | 0 | 256 | 61 | 7 | 2 | 0 | 70 | 408 |
| 07:30 AM | 4 | 43 | 2 | 0 | 49 | 0 | 25 | 13 | 0 | 38 | 28 | 185 | 68 | 0 | 281 | 42 | 7 | 5 | 0 | 54 | 422 |
| 07:45 AM | 5 | 46 | 0 | 0 | 51 | 1 | 21 | 8 | 0 | 30 | 31 | 178 | 62 | 0 | 271 | 74 | 14 | 10 | 0 | 98 | 450 |
| Total | 25 | 161 | 5 | 1 | 192 | 2 | 85 | 31 | 0 | 118 | 103 | 664 | 226 | 0 | 993 | 220 | 32 | 28 | 0 | 280 | 1583 |
| 08:00 AM | 11 | 45 | 0 | 0 | 56 | 0 | 18 | 5 | 2 | 25 | 34 | 171 | 56 | 0 | 261 | 71 | 16 | 21 | 0 | 108 | 450 |
| 08:15 AM | 9 | 50 | 2 | 2 | 63 | 0 | 20 | 4 | 1 | 25 | 25 | 150 | 58 | 0 | 233 | 63 | 16 | 21 | 0 | 100 | 421 |
| 08:30 AM | 8 | 50 | 0 | 0 | 58 | 1 | 27 | 13 | 0 | 41 | 15 | 128 | 51 | 0 | 194 | 74 | 28 | 11 | 0 | 113 | 406 |
| 08:45 AM | 8 | 53 | 2 | 0 | 63 | 3 | 18 | 9 | 2 | 32 | 13 | 117 | 67 | 0 | 197 | 73 | 21 | 10 | 0 | 104 | 396 |
| Total | 36 | 198 | 4 | 2 | 240 | 4 | 83 | 31 | 5 | 123 | 87 | 566 | 232 | 0 | 885 | 281 | 81 | 63 | 0 | 425 | 1673 |
| 03:00 PM | 13 | 86 | 1 | 1 | 101 | 0 | 10 | 3 | 1 | 14 | 9 | 77 | 54 | 0 | 140 | 56 | 23 | 6 | 0 | 85 | 340 |
| 03:15 PM | 10 | 80 | 3 | 0 | 93 | 1 | 13 | 6 | 0 | 20 | 15 | 78 | 43 | 0 | 136 | 55 | 25 | 6 | 0 | 86 | 335 |
| 03:30 PM | 9 | 77 | 1 | 0 | 87 | 1 | 28 | 15 | 0 | 44 | 7 | 81 | 66 | 0 | 154 | 69 | 23 | 8 | 0 | 100 | 385 |
| 03:45 PM | 10 | 90 | 0 | 0 | 100 | 0 | 13 | 2 | 0 | 15 | 8 | 74 | 54 | 0 | 136 | 73 | 22 | 2 | 0 | 97 | 348 |
| Total | 42 | 333 | 5 | 1 | 381 | 2 | 64 | 26 | 1 | 93 | 39 | 310 | 217 | 0 | 566 | 253 | 93 | 22 | 0 | 368 | 1408 |
| 04:00 PM | 7 | 108 | 2 | 0 | 117 | 0 | 12 | 7 | 0 | 19 | 10 | 78 | 59 | 0 | 147 | 74 | 22 | 5 | 0 | 101 | 384 |
| 04:15 PM | 15 | 108 | 1 | 0 | 124 | 1 | 9 | 7 | 0 | 17 | 7 | 71 | 53 | 0 | 131 | 64 | 18 | 5 | 0 | 87 | 359 |
| 04:30 PM | 11 | 142 | 1 | 0 | 154 | 3 | 13 | 12 | 2 | 30 | 10 | 98 | 89 | 0 | 197 | 76 | 34 | 9 | 0 | 119 | 500 |
| 04:45 PM | 6 | 131 | 2 | 2 | 141 | 0 | 5 | 8 | 1 | 14 | 25 | 97 | 70 | 0 | 192 | 63 | 22 | 11 | 1 | 97 | 444 |
| Total | 39 | 489 | 6 | 2 | 536 | 4 | 39 | 34 | 3 | 80 | 52 | 344 | 271 | 0 | 667 | 277 | 96 | 30 | 1 | 404 | 1687 |
| 05:00 PM | 11 | 143 | 1 | 0 | 155 | 3 | 14 | 9 | 0 | 26 | 13 | 98 | 87 | 0 | 198 | 75 | 31 | 7 | 1 | 114 | 493 |
| 05:15 PM | 13 | 172 | 1 | 0 | 186 | 1 | 10 | 7 | 0 | 18 | 14 | 110 | 68 | 0 | 192 | 81 | 29 | 9 | 0 | 119 | 515 |
| 05:30 PM | 13 | 161 | 1 | 0 | 175 | 1 | 11 | 12 | 0 | 24 | 19 | 99 | 81 | 0 | 199 | 70 | 19 | 8 | 0 | 97 | 495 |
| 05:45 PM | 9 | 149 | 2 | 0 | 160 | 0 | 14 | 14 | 0 | 28 | 14 | 90 | 62 | 0 | 166 | 59 | 22 | 4 | 0 | 85 | 439 |
| Total | 46 | 625 | 5 | 0 | 676 | 5 | 49 | 42 | 0 | 96 | 60 | 397 | 298 | 0 | 755 | 285 | 101 | 28 | 1 | 415 | 1942 |
| Grand Total | 188 | 1806 | 25 | 6 | 2025 | 17 | 320 | 164 | 9 | 510 | 341 | 2281 | 1244 | 0 | 3866 | 1316 | 403 | 171 | 2 | 1892 | 8293 |
| Apprch % | 9.3 | 89.2 | 1.2 | 0.3 | | 3.3 | 62.7 | 32.2 | 1.8 | | 8.8 | 59 | 32.2 | 0 | | 69.6 | 21.3 | 9 | 0.1 | | |
| Total % | 2.3 | 21.8 | 0.3 | 0.1 | 24.4 | 0.2 | 3.9 | 2 | 0.1 | 6.1 | 4.1 | 27.5 | 15 | 0 | 46.6 | 15.9 | 4.9 | 2.1 | 0 | 22.8 | |
| Cars | 173 | 1774 | 20 | 0 | 1967 | 17 | 312 | 160 | 0 | 489 | 332 | 2233 | 1174 | 0 | 3739 | 1236 | 391 | 165 | 0 | 1792 | 7987 |
| % Cars | 92 | 98.2 | 80 | 0 | 97.1 | 100 | 97.5 | 97.6 | 0 | 95.9 | 97.4 | 97.9 | 94.4 | 0 | 96.7 | 93.9 | 97 | 96.5 | 0 | 94.7 | 96.3 |
| Buses | 11 | 8 | 5 | 0 | 24 | 0 | 3 | 4 | 0 | 7 | 5 | 13 | 5 | 0 | 23 | 6 | 8 | 4 | 0 | 18 | 72 |
| % Buses | 5.9 | 0.4 | 20 | 0 | 1.2 | 0 | 0.9 | 2.4 | 0 | 1.4 | 1.5 | 0.6 | 0.4 | 0 | 0.6 | 0.5 | 2 | 2.3 | 0 | 1 | 0.9 |
| Trucks | 4 | 24 | 0 | 0 | 28 | 0 | 5 | 0 | 0 | 5 | 4 | 35 | 65 | 0 | 104 | 74 | 4 | 2 | 0 | 80 | 217 |
| % Trucks | 2.1 | 1.3 | 0 | 0 | 1.4 | 0 | 1.6 | 0 | 0 | 1 | 1.2 | 1.5 | 5.2 | 0 | 2.7 | 5.6 | 1 | 1.2 | 0 | 4.2 | 2.6 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.1 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0.1 | 0 |
| Pedestrians | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 15 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0.3 | 0 | 0 | 0 | 88.9 | 1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0.1 | 0.2 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave N/Reed Rd
Date:Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 12
Site Code : 12
Start Date : 9/9/2014
Page No : 2



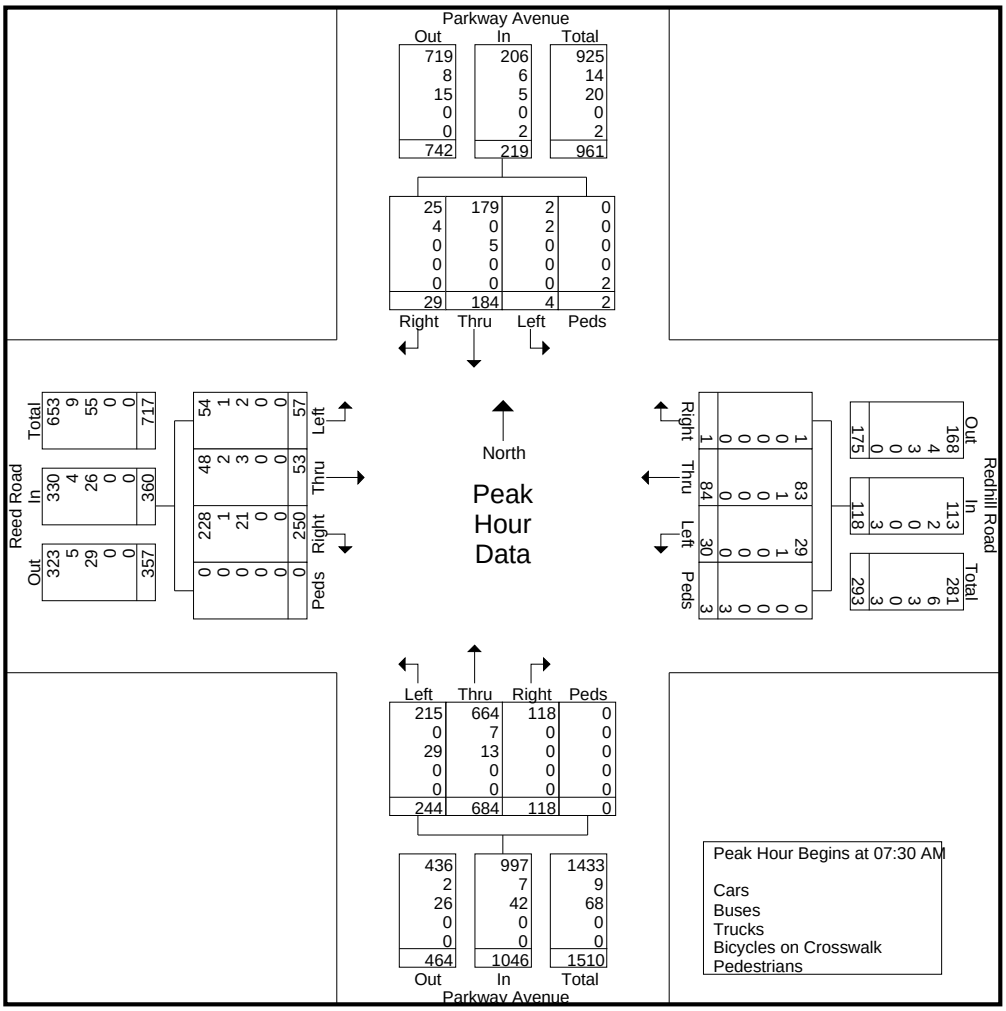
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave N/Reed Rd
Date:Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 12
Site Code : 12
Start Date : 9/9/2014
Page No : 4

| | Parkway Avenue Southbound | | | | | Redhill Road Westbound | | | | | Parkway Avenue Northbound | | | | | Reed Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 4 | 43 | **2** | 0 | 49 | 0 | **25** | **13** | 0 | **38** | 28 | **185** | **68** | 0 | **281** | 42 | 7 | 5 | 0 | 54 | 422 |
| 07:45 AM | 5 | 46 | 0 | 0 | 51 | **1** | 21 | 8 | 0 | 30 | 31 | 178 | 62 | 0 | 271 | **74** | 14 | 10 | 0 | 98 | **450** |
| 08:00 AM | **11** | 45 | 0 | 0 | 56 | 0 | 18 | 5 | **2** | 25 | **34** | 171 | 56 | 0 | 261 | 71 | **16** | **21** | 0 | **108** | 450 |
| 08:15 AM | 9 | **50** | 2 | **2** | **63** | 0 | 20 | 4 | 1 | 25 | 25 | 150 | 58 | 0 | 233 | 63 | 16 | 21 | 0 | 100 | 421 |
| Total Volume | 29 | 184 | 4 | 2 | 219 | 1 | 84 | 30 | 3 | 118 | 118 | 684 | 244 | 0 | 1046 | 250 | 53 | 57 | 0 | 360 | 1743 |
| % App. Total | 13.2 | 84 | 1.8 | 0.9 | | 0.8 | 71.2 | 25.4 | 2.5 | | 11.3 | 65.4 | 23.3 | 0 | | 69.4 | 14.7 | 15.8 | 0 | | |
| PHF | .659 | .920 | .500 | .250 | .869 | .250 | .840 | .577 | .375 | .776 | .868 | .924 | .897 | .000 | .931 | .845 | .828 | .679 | .000 | .833 | .968 |
| Cars | 25 | 179 | 2 | 0 | 206 | 1 | 83 | 29 | 0 | 113 | 118 | 664 | 215 | 0 | 997 | 228 | 48 | 54 | 0 | 330 | 1646 |
| % Cars | 86.2 | 97.3 | 50.0 | 0 | 94.1 | 100 | 98.8 | 96.7 | 0 | 95.8 | 100 | 97.1 | 88.1 | 0 | 95.3 | 91.2 | 90.6 | 94.7 | 0 | 91.7 | 94.4 |
| Buses | 4 | 0 | 2 | 0 | 6 | 0 | 1 | 1 | 0 | 2 | 0 | 7 | 0 | 0 | 7 | 1 | 2 | 1 | 0 | 4 | 19 |
| % Buses | 13.8 | 0 | 50.0 | 0 | 2.7 | 0 | 1.2 | 3.3 | 0 | 1.7 | 0 | 1.0 | 0 | 0 | 0.7 | 0.4 | 3.8 | 1.8 | 0 | 1.1 | 1.1 |
| Trucks | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 29 | 0 | 42 | 21 | 3 | 2 | 0 | 26 | 73 |
| % Trucks | 0 | 2.7 | 0 | 0 | 2.3 | 0 | 0 | 0 | 0 | 0 | 0 | 1.9 | 11.9 | 0 | 4.0 | 8.4 | 5.7 | 3.5 | 0 | 7.2 | 4.2 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0.9 | 0 | 0 | 0 | 100 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |



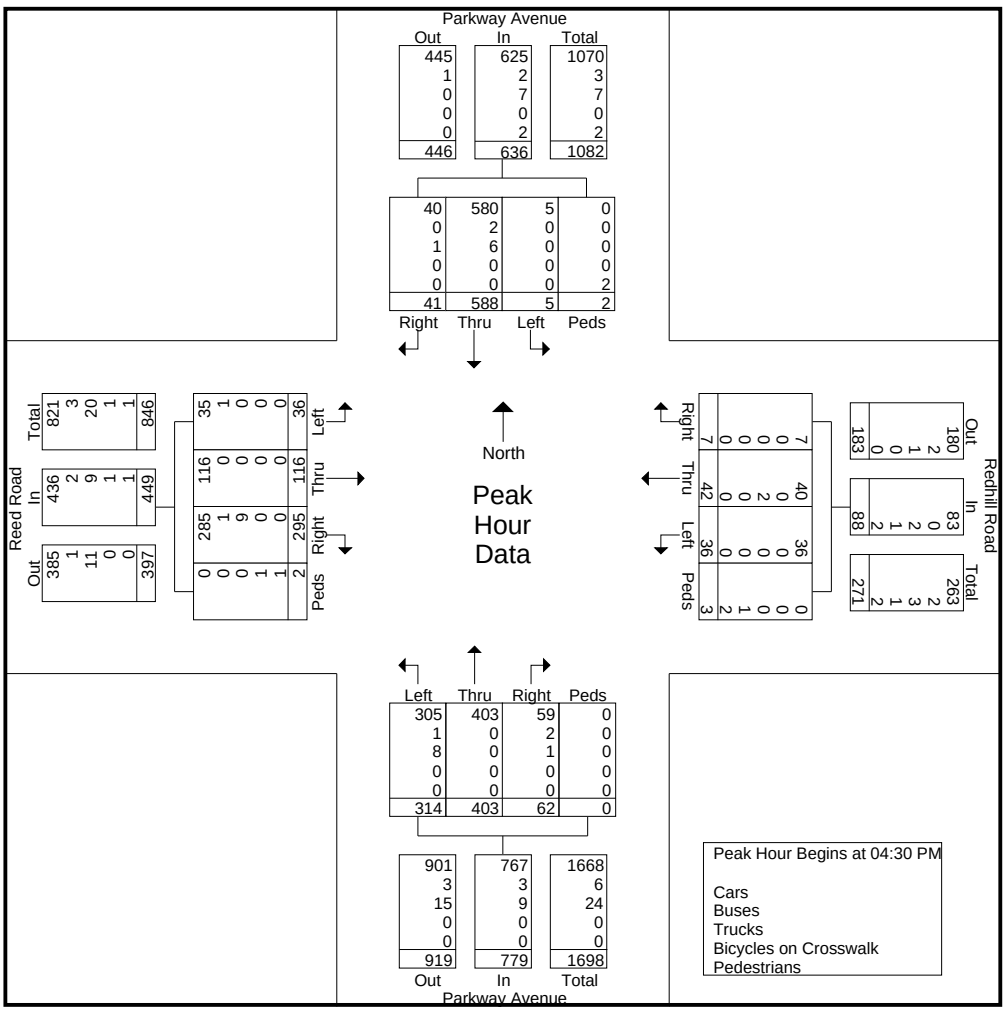
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave N/Reed Rd
Date:Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 12
Site Code : 12
Start Date : 9/9/2014
Page No : 5

| | Parkway Avenue Southbound | | | | | Redhill Road Westbound | | | | | Parkway Avenue Northbound | | | | | Reed Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 11 | 142 | 1 | 0 | 154 | **3** | 13 | **12** | **2** | **30** | 10 | 98 | **89** | 0 | 197 | 76 | **34** | 9 | 0 | **119** | 500 |
| 04:45 PM | 6 | 131 | **2** | **2** | 141 | 0 | 5 | 8 | 1 | 14 | **25** | 97 | 70 | 0 | 192 | 63 | 22 | **11** | **1** | 97 | 444 |
| 05:00 PM | 11 | 143 | 1 | 0 | 155 | 3 | **14** | 9 | 0 | 26 | 13 | 98 | 87 | 0 | **198** | 75 | 31 | 7 | 1 | 114 | 493 |
| 05:15 PM | **13** | **172** | 1 | 0 | **186** | 1 | 10 | 7 | 0 | 18 | 14 | **110** | 68 | 0 | 192 | **81** | 29 | 9 | 0 | 119 | **515** |
| Total Volume | 41 | 588 | 5 | 2 | 636 | 7 | 42 | 36 | 3 | 88 | 62 | 403 | 314 | 0 | 779 | 295 | 116 | 36 | 2 | 449 | 1952 |
| % App. Total | 6.4 | 92.5 | 0.8 | 0.3 | | 8 | 47.7 | 40.9 | 3.4 | | 8 | 51.7 | 40.3 | 0 | | 65.7 | 25.8 | 8 | 0.4 | | |
| PHF | .788 | .855 | .625 | .250 | .855 | .583 | .750 | .750 | .375 | .733 | .620 | .916 | .882 | .000 | .984 | .910 | .853 | .818 | .500 | .943 | .948 |
| Cars | 40 | 580 | 5 | 0 | 625 | 7 | 40 | 36 | 0 | 83 | 59 | 403 | 305 | 0 | 767 | 285 | 116 | 35 | 0 | 436 | 1911 |
| % Cars | 97.6 | 98.6 | 100 | 0 | 98.3 | 100 | 95.2 | 100 | 0 | 94.3 | 95.2 | 100 | 97.1 | 0 | 98.5 | 96.6 | 100 | 97.2 | 0 | 97.1 | 97.9 |
| Buses | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 7 |
| % Buses | 0 | 0.3 | 0 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 3.2 | 0 | 0.3 | 0 | 0.4 | 0.3 | 0 | 2.8 | 0 | 0.4 | 0.4 |
| Trucks | 1 | 6 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 8 | 0 | 9 | 9 | 0 | 0 | 0 | 9 | 27 |
| % Trucks | 2.4 | 1.0 | 0 | 0 | 1.1 | 0 | 4.8 | 0 | 0 | 2.3 | 1.6 | 0 | 2.5 | 0 | 1.2 | 3.1 | 0 | 0 | 0 | 2.0 | 1.4 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33.3 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50.0 | 0.2 | 0.1 |
| Pedestrians | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 |
| % Pedestrians | 0 | 0 | 0 | 100 | 0.3 | 0 | 0 | 0 | 66.7 | 2.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50.0 | 0.2 | 0.3 |



**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/N Reed Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 12 Sat
Site Code : 12
Start Date : 9/6/2014
Page No : 1

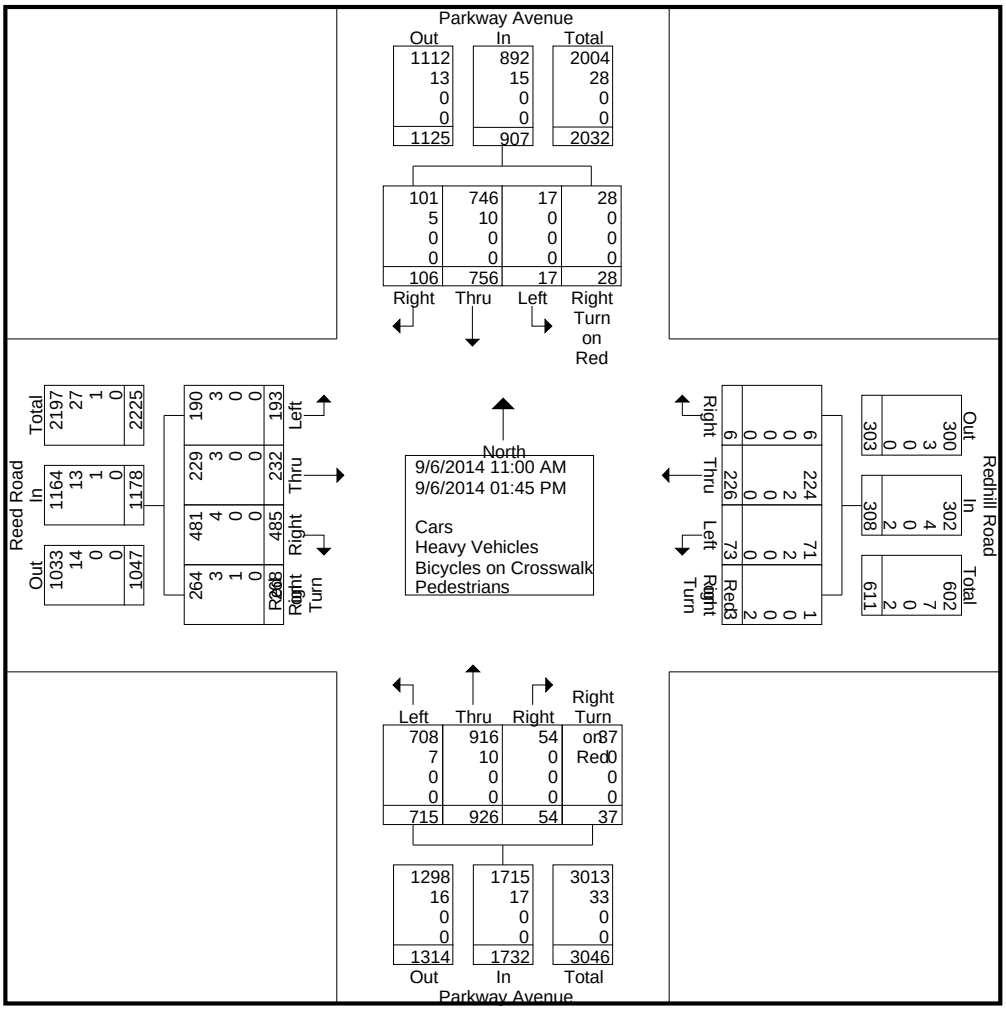
Groups Printed- Cars - Heavy Vehicles - Bicycles on Crosswalk - Pedestrians

| | Parkway Avenue Southbound | | | | | Redhill Road Westbound | | | | | Parkway Avenue Northbound | | | | | Reed Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| 11:00 AM | 5 | 65 | 2 | 2 | 74 | 1 | 26 | 5 | 1 | 33 | 10 | 83 | 70 | 2 | 165 | 38 | 25 | 7 | 27 | 97 | 369 |
| 11:15 AM | 3 | 56 | 1 | 5 | 65 | 0 | 15 | 4 | 0 | 19 | 4 | 80 | 51 | 1 | 136 | 49 | 22 | 5 | 25 | 101 | 321 |
| 11:30 AM | 7 | 55 | 1 | 0 | 63 | 0 | 21 | 6 | 0 | 27 | 4 | 73 | 71 | 1 | 149 | 37 | 16 | 12 | 27 | 92 | 331 |
| 11:45 AM | 8 | 76 | 2 | 2 | 88 | 0 | 23 | 7 | 0 | 30 | 8 | 74 | 72 | 1 | 155 | 38 | 19 | 10 | 20 | 87 | 360 |
| Total | 23 | 252 | 6 | 9 | 290 | 1 | 85 | 22 | 1 | 109 | 26 | 310 | 264 | 5 | 605 | 162 | 82 | 34 | 99 | 377 | 1381 |
| 12:00 PM | 15 | 76 | 1 | 2 | 94 | 1 | 21 | 3 | 2 | 27 | 10 | 87 | 67 | 1 | 165 | 59 | 14 | 25 | 1 | 99 | 385 |
| 12:15 PM | 10 | 67 | 1 | 4 | 82 | 0 | 26 | 7 | 0 | 33 | 3 | 78 | 50 | 0 | 131 | 45 | 20 | 41 | 3 | 109 | 355 |
| 12:30 PM | 7 | 65 | 0 | 6 | 78 | 0 | 10 | 5 | 0 | 15 | 4 | 93 | 48 | 0 | 145 | 55 | 25 | 28 | 16 | 124 | 362 |
| 12:45 PM | 8 | 59 | 1 | 2 | 70 | 0 | 22 | 12 | 0 | 34 | 6 | 83 | 62 | 1 | 152 | 56 | 21 | 18 | 5 | 100 | 356 |
| Total | 40 | 267 | 3 | 14 | 324 | 1 | 79 | 27 | 2 | 109 | 23 | 341 | 227 | 2 | 593 | 215 | 80 | 112 | 25 | 432 | 1458 |
| 01:00 PM | 15 | 55 | 2 | 2 | 74 | 1 | 18 | 10 | 0 | 29 | 1 | 84 | 55 | 7 | 147 | 32 | 24 | 14 | 26 | 96 | 346 |
| 01:15 PM | 5 | 63 | 1 | 3 | 72 | 0 | 11 | 3 | 0 | 14 | 1 | 66 | 56 | 8 | 131 | 30 | 15 | 16 | 33 | 94 | 311 |
| 01:30 PM | 12 | 64 | 2 | 0 | 78 | 3 | 15 | 5 | 0 | 23 | 1 | 67 | 55 | 6 | 129 | 16 | 13 | 8 | 40 | 77 | 307 |
| 01:45 PM | 11 | 55 | 3 | 0 | 69 | 0 | 18 | 6 | 0 | 24 | 2 | 58 | 58 | 9 | 127 | 30 | 18 | 9 | 45 | 102 | 322 |
| Total | 43 | 237 | 8 | 5 | 293 | 4 | 62 | 24 | 0 | 90 | 5 | 275 | 224 | 30 | 534 | 108 | 70 | 47 | 144 | 369 | 1286 |
| Grand Total | 106 | 756 | 17 | 28 | 907 | 6 | 226 | 73 | 3 | 308 | 54 | 926 | 715 | 37 | 1732 | 485 | 232 | 193 | 268 | 1178 | 4125 |
| Apprch % | 11.7 | 83.4 | 1.9 | 3.1 | | 1.9 | 73.4 | 23.7 | 1 | | 3.1 | 53.5 | 41.3 | 2.1 | | 41.2 | 19.7 | 16.4 | 22.8 | | |
| Total % | 2.6 | 18.3 | 0.4 | 0.7 | 22 | 0.1 | 5.5 | 1.8 | 0.1 | 7.5 | 1.3 | 22.4 | 17.3 | 0.9 | 42 | 11.8 | 5.6 | 4.7 | 6.5 | 28.6 | |
| Cars | 101 | 746 | 17 | 28 | 892 | 6 | 224 | 71 | 1 | 302 | 54 | 916 | 708 | 37 | 1715 | 481 | 229 | 190 | 264 | 1164 | 4073 |
| % Cars | 95.3 | 98.7 | 100 | 100 | 98.3 | 100 | 99.1 | 97.3 | 33.3 | 98.1 | 100 | 98.9 | 99 | 100 | 99 | 99.2 | 98.7 | 98.4 | 98.5 | 98.8 | 98.7 |
| Heavy Vehicles | 5 | 10 | 0 | 0 | 15 | 0 | 2 | 2 | 0 | 4 | 0 | 10 | 7 | 0 | 17 | 4 | 3 | 3 | 3 | 13 | 49 |
| % Heavy Vehicles | 4.7 | 1.3 | 0 | 0 | 1.7 | 0 | 0.9 | 2.7 | 0 | 1.3 | 0 | 1.1 | 1 | 0 | 1 | 0.8 | 1.3 | 1.6 | 1.1 | 1.1 | 1.2 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.1 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66.7 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/N Reed Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 12 Sat
Site Code : 12
Start Date : 9/6/2014
Page No : 2



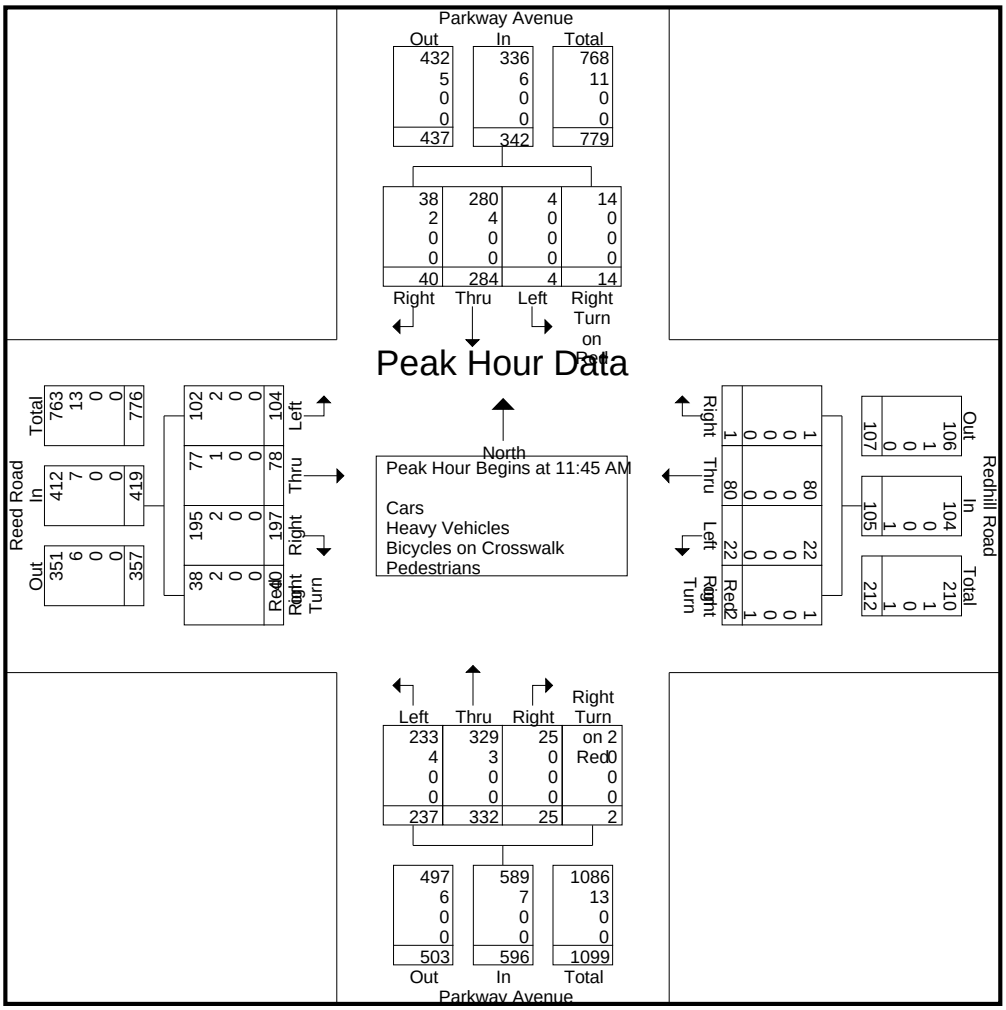
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Ave/N Reed Rd
Date: Saturday, September 6th, 2014
Counter: MIO CT

File Name : Del Co 12 Sat
Site Code : 12
Start Date : 9/6/2014
Page No : 4

| | Parkway Avenue Southbound | | | | | Redhill Road Westbound | | | | | Parkway Avenue Northbound | | | | | Reed Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Right | Thru | Left | Right Turn on Red | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 11:45 AM | 8 | **76** | **2** | 2 | 88 | 0 | 23 | **7** | 0 | 30 | 8 | 74 | **72** | **1** | 155 | 38 | 19 | 10 | **20** | 87 | 360 |
| 12:00 PM | **15** | 76 | 1 | 2 | **94** | **1** | 21 | 3 | **2** | 27 | **10** | 87 | 67 | 1 | **165** | **59** | 14 | 25 | 1 | 99 | **385** |
| 12:15 PM | 10 | 67 | 1 | 4 | 82 | 0 | **26** | 7 | 0 | **33** | 3 | 78 | 50 | 0 | 131 | 45 | 20 | **41** | 3 | 109 | 355 |
| 12:30 PM | 7 | 65 | 0 | **6** | 78 | 0 | 10 | 5 | 0 | 15 | 4 | **93** | 48 | 0 | 145 | 55 | **25** | 28 | 16 | **124** | 362 |
| Total Volume | 40 | 284 | 4 | 14 | 342 | 1 | 80 | 22 | 2 | 105 | 25 | 332 | 237 | 2 | 596 | 197 | 78 | 104 | 40 | 419 | 1462 |
| % App. Total | 11.7 | 83 | 1.2 | 4.1 | | 1 | 76.2 | 21 | 1.9 | | 4.2 | 55.7 | 39.8 | 0.3 | | 47 | 18.6 | 24.8 | 9.5 | | |
| PHF | .667 | .934 | .500 | .583 | .910 | .250 | .769 | .786 | .250 | .795 | .625 | .892 | .823 | .500 | .903 | .835 | .780 | .634 | .500 | .845 | .949 |
| Cars | 38 | 280 | 4 | 14 | 336 | 1 | 80 | 22 | 1 | 104 | 25 | 329 | 233 | 2 | 589 | 195 | 77 | 102 | 38 | 412 | 1441 |
| % Cars | 95.0 | 98.6 | 100 | 100 | 98.2 | 100 | 100 | 100 | 50.0 | 99.0 | 100 | 99.1 | 98.3 | 100 | 98.8 | 99.0 | 98.7 | 98.1 | 95.0 | 98.3 | 98.6 |
| Heavy Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Heavy Vehicles | 5.0 | 1.4 | 0 | 0 | 1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 1.7 | 0 | 1.2 | 1.0 | 1.3 | 1.9 | 5.0 | 1.7 | 1.4 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50.0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |



# *REED ROAD & SHOPPING CENTER DRIVEWAY*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

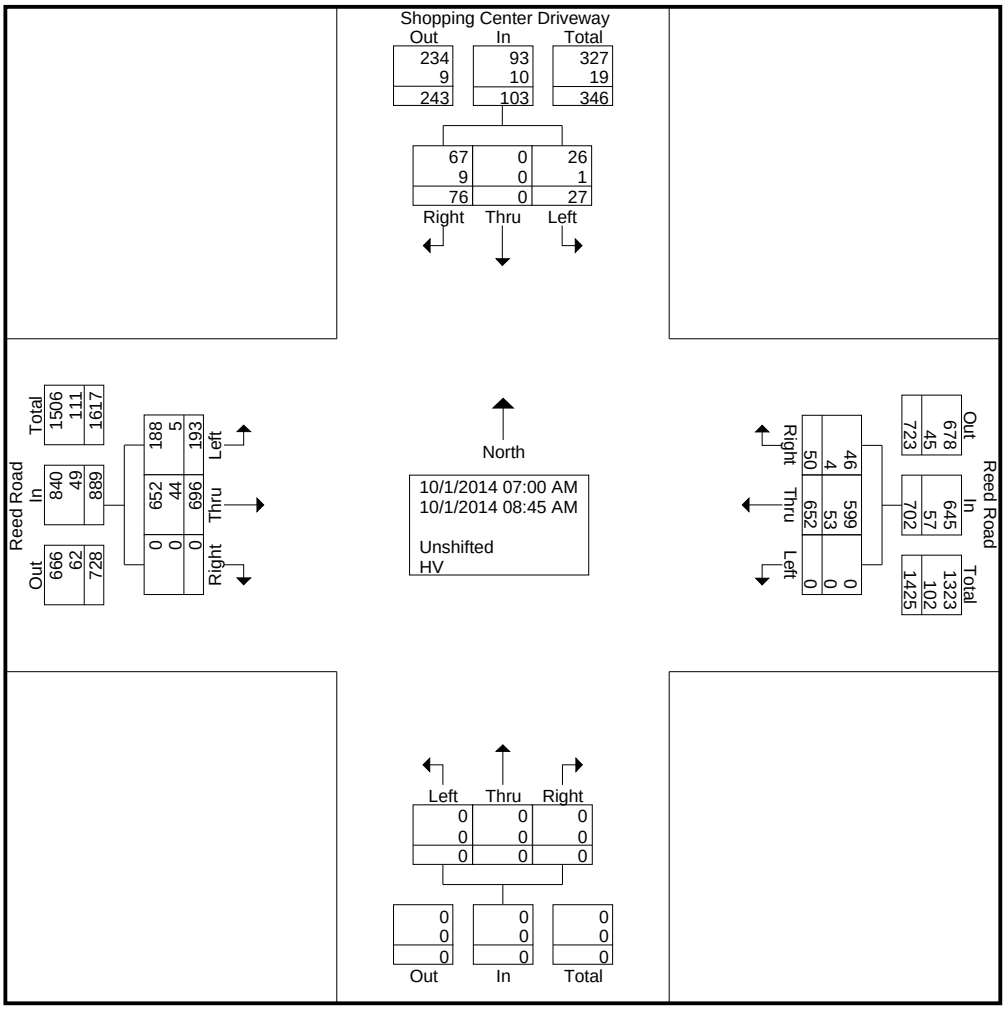
# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

Counter: 11
Counted by: RK
Weather: Clear

File Name : 2014-10-01 AM Reed Shopping Center
Site Code : 00000000
Start Date : 10/1/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Reed Road Eastbound | | | | | Reed Road Westbound | | | | | Northbound | | | | | Shopping Center Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 13 | 52 | 0 | 0 | 65 | 0 | 56 | 5 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0 | 8 | 0 | 134 | 134 |
| 07:15 AM | 16 | 59 | 0 | 0 | 75 | 0 | 78 | 7 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 7 | 0 | 167 | 167 |
| 07:30 AM | 32 | 71 | 0 | 0 | 103 | 0 | 94 | 8 | 0 | 102 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 8 | 0 | 213 | 213 |
| 07:45 AM | 21 | 109 | 0 | 0 | 130 | 0 | 77 | 6 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 11 | 0 | 17 | 0 | 230 | 230 |
| Total | 82 | 291 | 0 | 0 | 373 | 0 | 305 | 26 | 0 | 331 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 24 | 0 | 40 | 0 | 744 | 744 |
| 08:00 AM | 29 | 108 | 0 | 0 | 137 | 0 | 74 | 7 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 227 | 227 |
| 08:15 AM | 30 | 81 | 0 | 0 | 111 | 0 | 82 | 7 | 0 | 89 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 15 | 0 | 20 | 0 | 220 | 220 |
| 08:30 AM | 29 | 102 | 0 | 0 | 131 | 0 | 100 | 6 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 0 | 12 | 0 | 249 | 249 |
| 08:45 AM | 23 | 114 | 0 | 0 | 137 | 0 | 91 | 4 | 0 | 95 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 20 | 0 | 22 | 0 | 254 | 254 |
| Total | 111 | 405 | 0 | 0 | 516 | 0 | 347 | 24 | 0 | 371 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 52 | 0 | 63 | 0 | 950 | 950 |
| Grand Total | 193 | 696 | 0 | 0 | 889 | 0 | 652 | 50 | 0 | 702 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 76 | 0 | 103 | 0 | 1694 | 1694 |
| Apprch % | 21.7 | 78.3 | 0 | | | 0 | 92.9 | 7.1 | | | 0 | 0 | 0 | | | 26.2 | 0 | 73.8 | | | | | |
| Total % | 11.4 | 41.1 | 0 | | 52.5 | 0 | 38.5 | 3 | | 41.4 | 0 | 0 | 0 | | 0 | 1.6 | 0 | 4.5 | | 6.1 | 0 | 100 | |
| Unshifted | 188 | 652 | 0 | | 840 | 0 | 599 | 46 | | 645 | 0 | 0 | 0 | | 0 | 26 | 0 | 67 | | 93 | 0 | 0 | 1578 |
| % Unshifted | 97.4 | 93.7 | 0 | 0 | 94.5 | 0 | 91.9 | 92 | 0 | 91.9 | 0 | 0 | 0 | 0 | 0 | 96.3 | 0 | 88.2 | 0 | 90.3 | 0 | 0 | 93.2 |
| HV | 5 | 44 | 0 | | 49 | 0 | 53 | 4 | | 57 | 0 | 0 | 0 | | 0 | 1 | 0 | 9 | | 10 | 0 | 0 | 116 |
| % HV | 2.6 | 6.3 | 0 | 0 | 5.5 | 0 | 8.1 | 8 | 0 | 8.1 | 0 | 0 | 0 | 0 | 0 | 3.7 | 0 | 11.8 | 0 | 9.7 | 0 | 0 | 6.8 |

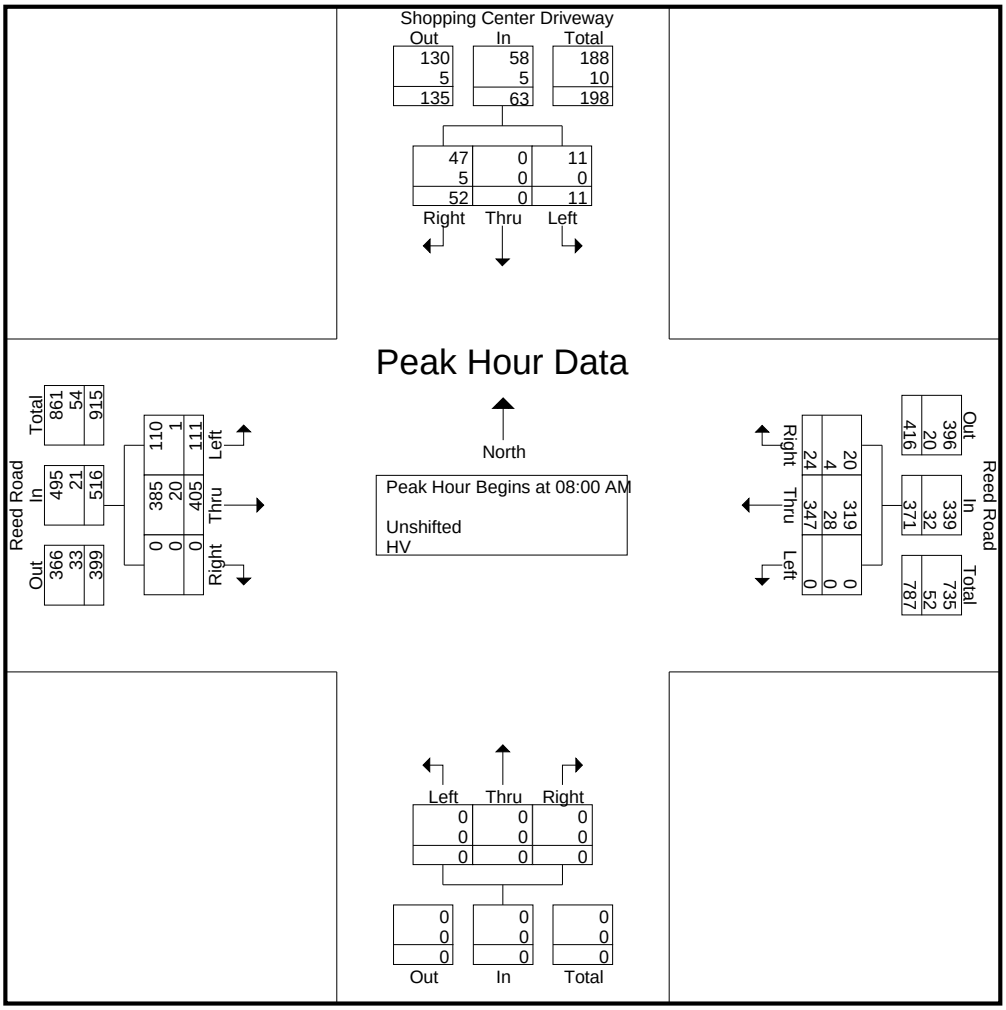


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

File Name : 2014-10-01 AM Reed Shopping Center
Site Code : 00000000
Start Date : 10/1/2014
Page No : 2

| | Reed Road Eastbound | | | | Reed Road Westbound | | | | Northbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | |
| 08:00 AM | 29 | 108 | 0 | **137** | 0 | 74 | **7** | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 227 |
| 08:15 AM | **30** | 81 | 0 | 111 | 0 | 82 | 7 | 89 | 0 | 0 | 0 | 0 | **5** | 0 | 15 | 20 | 220 |
| 08:30 AM | 29 | 102 | 0 | 131 | 0 | **100** | 6 | **106** | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 12 | 249 |
| 08:45 AM | 23 | **114** | 0 | 137 | 0 | 91 | 4 | 95 | 0 | 0 | 0 | 0 | 2 | 0 | **20** | **22** | **254** |
| Total Volume | 111 | 405 | 0 | 516 | 0 | 347 | 24 | 371 | 0 | 0 | 0 | 0 | 11 | 0 | 52 | 63 | 950 |
| % App. Total | 21.5 | 78.5 | 0 | | 0 | 93.5 | 6.5 | | 0 | 0 | 0 | | 17.5 | 0 | 82.5 | | |
| PHF | .925 | .888 | .000 | .942 | .000 | .868 | .857 | .875 | .000 | .000 | .000 | .000 | .550 | .000 | .650 | .716 | .935 |
| Unshifted | 110 | 385 | 0 | 495 | 0 | 319 | 20 | 339 | 0 | 0 | 0 | 0 | 11 | 0 | 47 | 58 | 892 |
| % Unshifted | 99.1 | 95.1 | 0 | 95.9 | 0 | 91.9 | 83.3 | 91.4 | 0 | 0 | 0 | 0 | 100 | 0 | 90.4 | 92.1 | 93.9 |
| HV | 1 | 20 | 0 | 21 | 0 | 28 | 4 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 58 |
| % HV | 0.9 | 4.9 | 0 | 4.1 | 0 | 8.1 | 16.7 | 8.6 | 0 | 0 | 0 | 0 | 0 | 0 | 9.6 | 7.9 | 6.1 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

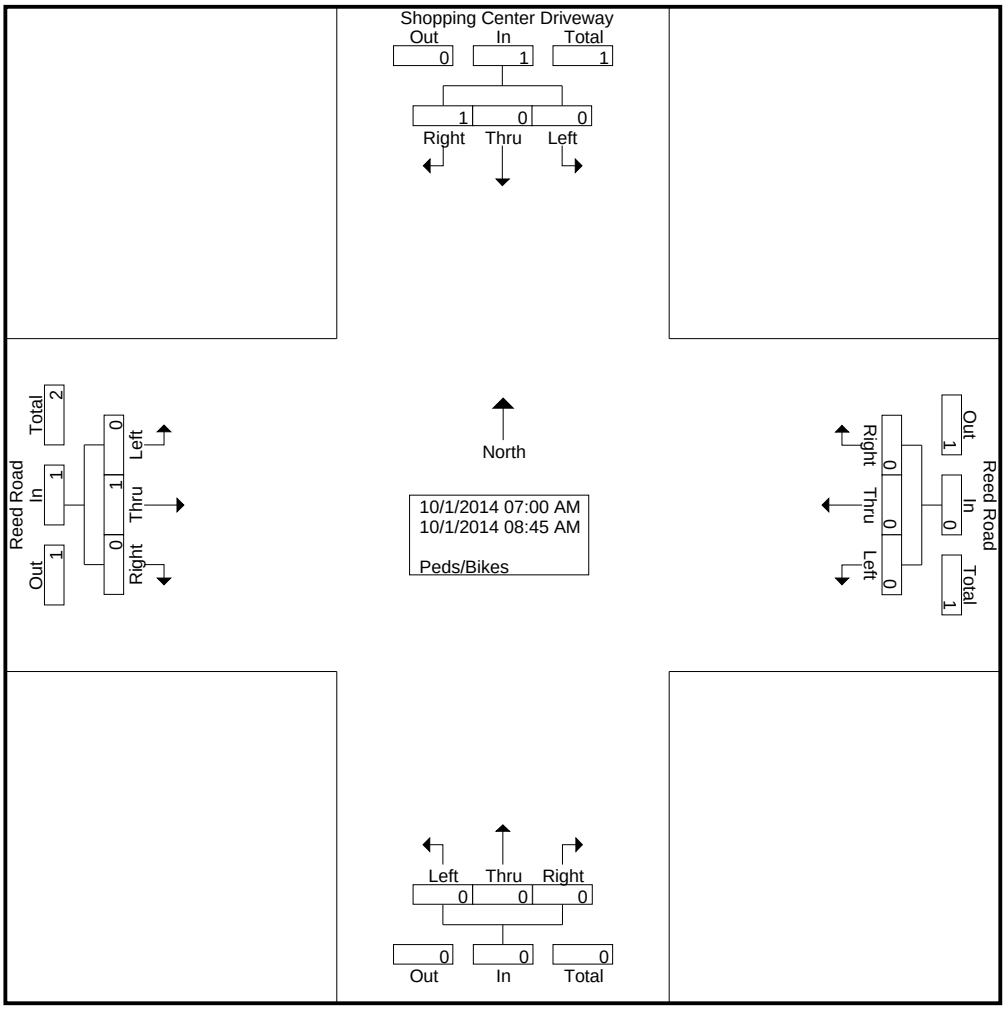
# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

Counter: 11
Counted by: RK
Weather: Clear

File Name : 2014-10-01 AM Reed Shopping Center
Site Code : 00000000
Start Date : 10/1/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Reed Road Eastbound | | | | | Reed Road Westbound | | | | | Northbound | | | | | Shopping Center Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Grand Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 |
| Apprch % | 0 | 100 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 100 | | | | | |
| Total % | 0 | 50 | 0 | | 50 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 50 | | 50 | 0 | 100 | |

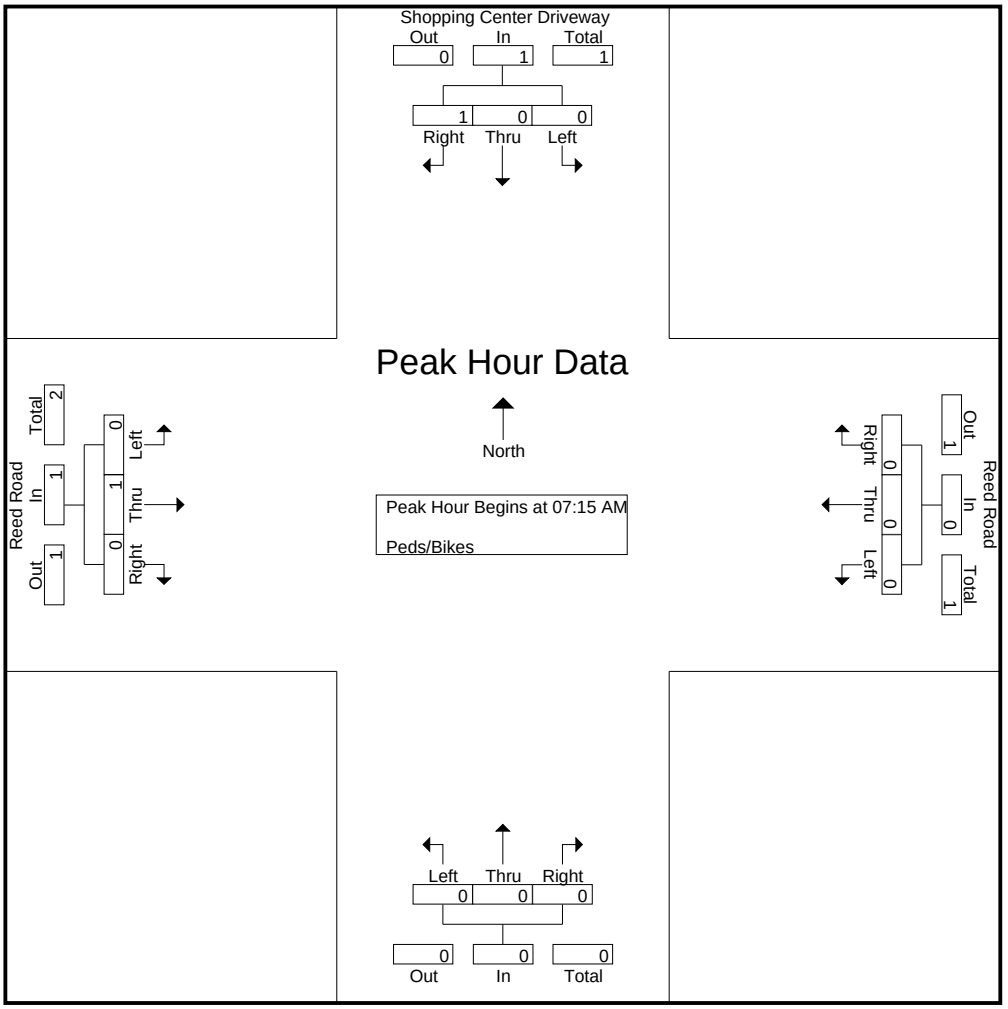


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

File Name : 2014-10-01 AM Reed Shopping Center
Site Code : 00000000
Start Date : 10/1/2014
Page No : 2

| | Reed Road Eastbound | | | | Reed Road Westbound | | | | Northbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | **1** | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 1 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 100 | | |
| PHF | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .500 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

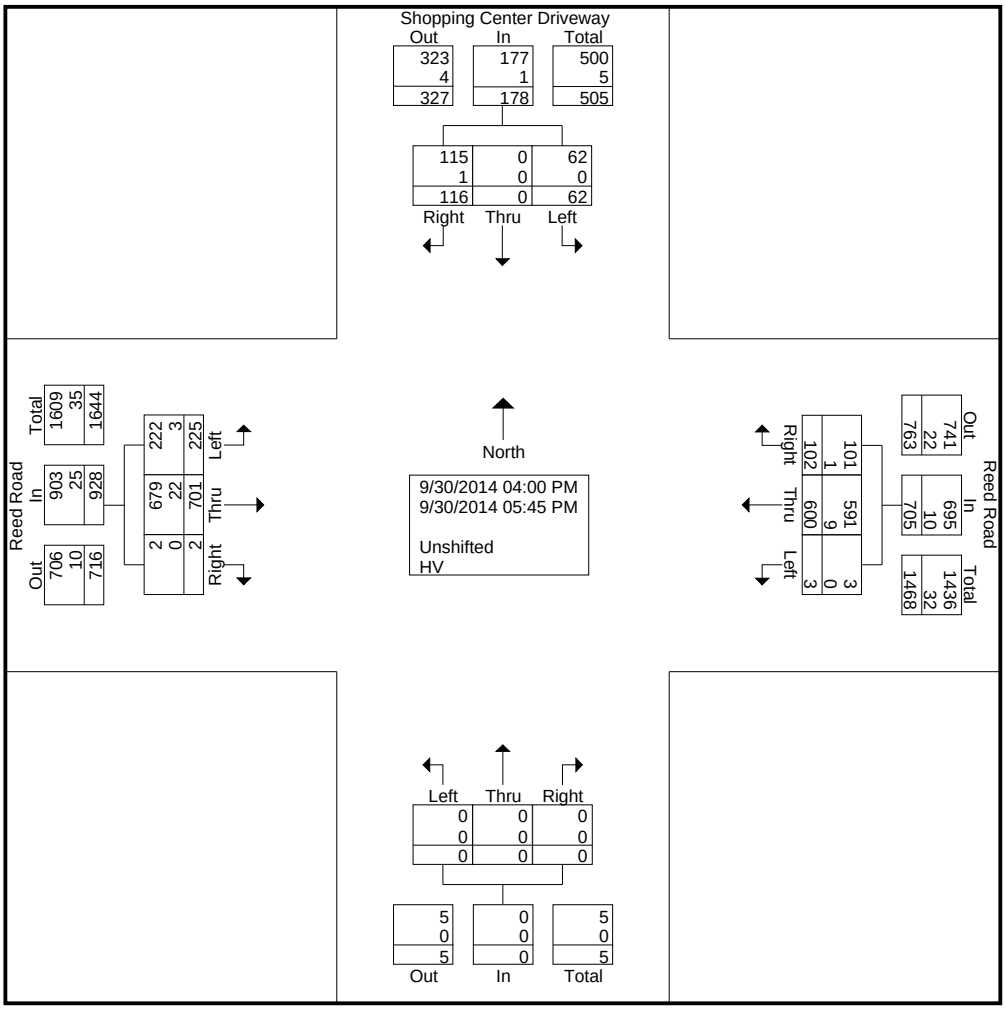
# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

Counter: 7
Counted by: J.Gable
Weather: Clear

File Name : 2014-09-30 PM Reed Shopping Center
Site Code : 00000000
Start Date : 9/30/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Reed Road Eastbound | | | | | Reed Road Westbound | | | | | Northbound | | | | | Shopping Center Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 27 | 114 | 1 | 0 | 142 | 0 | 88 | 16 | 0 | 104 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 19 | 0 | 30 | 0 | 276 | 276 |
| 04:15 PM | 29 | 107 | 0 | 0 | 136 | 0 | 73 | 15 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 14 | 0 | 25 | 0 | 249 | 249 |
| 04:30 PM | 18 | 52 | 1 | 0 | 71 | 3 | 72 | 6 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 10 | 0 | 162 | 162 |
| 04:45 PM | 28 | 105 | 0 | 0 | 133 | 0 | 76 | 14 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 13 | 0 | 23 | 0 | 246 | 246 |
| Total | 102 | 378 | 2 | 0 | 482 | 3 | 309 | 51 | 0 | 363 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 51 | 0 | 88 | 0 | 933 | 933 |
| 05:00 PM | 37 | 100 | 0 | 0 | 137 | 0 | 93 | 16 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 11 | 0 | 19 | 0 | 265 | 265 |
| 05:15 PM | 28 | 88 | 0 | 0 | 116 | 0 | 90 | 17 | 3 | 107 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 18 | 0 | 23 | 3 | 246 | 249 |
| 05:30 PM | 29 | 71 | 0 | 0 | 100 | 0 | 50 | 8 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 18 | 0 | 20 | 0 | 178 | 178 |
| 05:45 PM | 29 | 64 | 0 | 0 | 93 | 0 | 58 | 10 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 18 | 0 | 28 | 0 | 189 | 189 |
| Total | 123 | 323 | 0 | 0 | 446 | 0 | 291 | 51 | 3 | 342 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 65 | 0 | 90 | 3 | 878 | 881 |
| Grand Total | 225 | 701 | 2 | 0 | 928 | 3 | 600 | 102 | 3 | 705 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 116 | 0 | 178 | 3 | 1811 | 1814 |
| Apprch % | 24.2 | 75.5 | 0.2 | | | 0.4 | 85.1 | 14.5 | | | 0 | 0 | 0 | | | 34.8 | 0 | 65.2 | | | | | |
| Total % | 12.4 | 38.7 | 0.1 | | 51.2 | 0.2 | 33.1 | 5.6 | | 38.9 | 0 | 0 | 0 | | 0 | 3.4 | 0 | 6.4 | | 9.8 | 0.2 | 99.8 | |
| Unshifted | 222 | 679 | 2 | | 903 | 3 | 591 | 101 | | 698 | 0 | 0 | 0 | | 0 | 62 | 0 | 115 | | 177 | 0 | 0 | 1778 |
| % Unshifted | 98.7 | 96.9 | 100 | 0 | 97.3 | 100 | 98.5 | 99 | 100 | 98.6 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 99.1 | 0 | 99.4 | 0 | 0 | 98 |
| HV | 3 | 22 | 0 | | 25 | 0 | 9 | 1 | | 10 | 0 | 0 | 0 | | 0 | 0 | 0 | 1 | | 1 | 0 | 0 | 36 |
| % HV | 1.3 | 3.1 | 0 | 0 | 2.7 | 0 | 1.5 | 1 | 0 | 1.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0.6 | 0 | 0 | 2 |

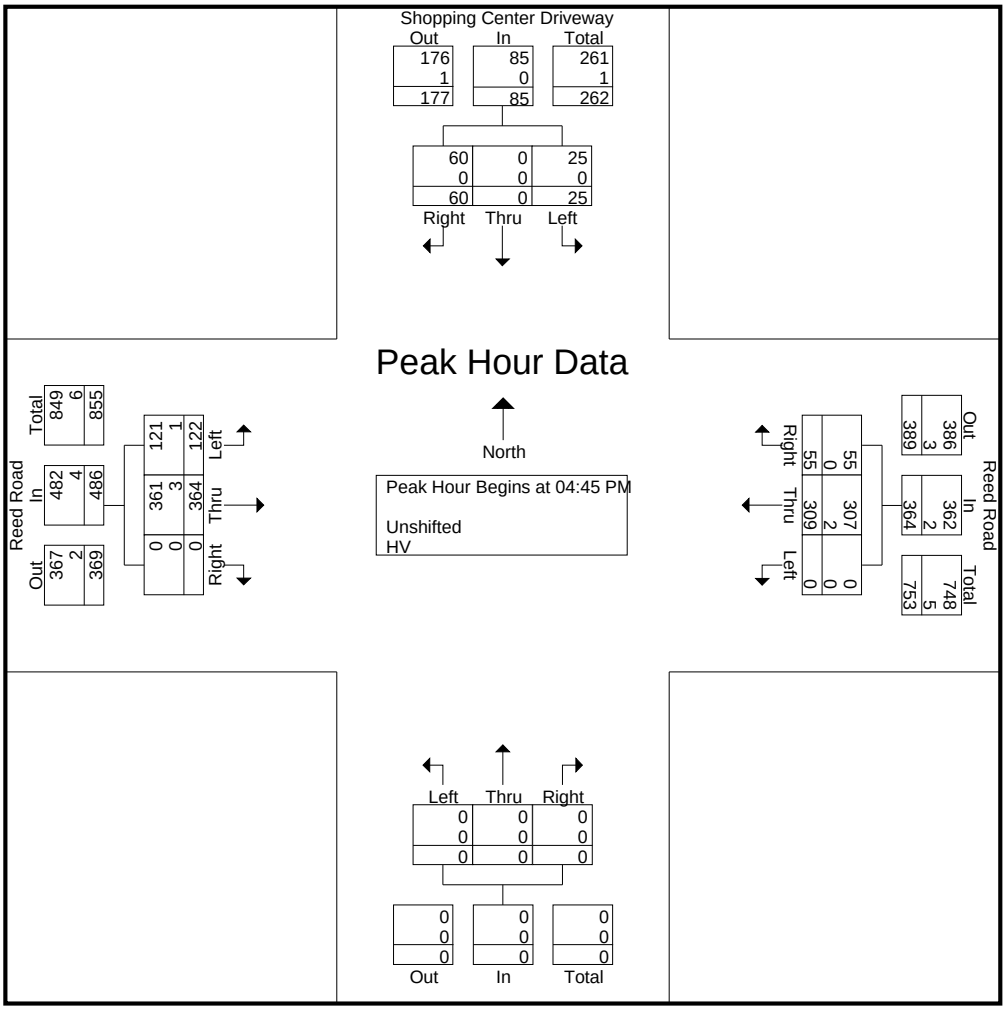


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

File Name : 2014-09-30 PM Reed Shopping Center
Site Code : 00000000
Start Date : 9/30/2014
Page No : 2

| | Reed Road Eastbound | | | | Reed Road Westbound | | | | Northbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 28 | **105** | 0 | 133 | 0 | 76 | 14 | 90 | 0 | 0 | 0 | 0 | **10** | 0 | 13 | **23** | 246 |
| 05:00 PM | **37** | 100 | 0 | **137** | 0 | **93** | 16 | **109** | 0 | 0 | 0 | 0 | 8 | 0 | 11 | 19 | **265** |
| 05:15 PM | 28 | 88 | 0 | 116 | 0 | 90 | **17** | 107 | 0 | 0 | 0 | 0 | 5 | 0 | **18** | 23 | 246 |
| 05:30 PM | 29 | 71 | 0 | 100 | 0 | 50 | 8 | 58 | 0 | 0 | 0 | 0 | 2 | 0 | 18 | 20 | 178 |
| Total Volume | 122 | 364 | 0 | 486 | 0 | 309 | 55 | 364 | 0 | 0 | 0 | 0 | 25 | 0 | 60 | 85 | 935 |
| % App. Total | 25.1 | 74.9 | 0 | | 0 | 84.9 | 15.1 | | 0 | 0 | 0 | | 29.4 | 0 | 70.6 | | |
| PHF | .824 | .867 | .000 | .887 | .000 | .831 | .809 | .835 | .000 | .000 | .000 | .000 | .625 | .000 | .833 | .924 | .882 |
| Unshifted | 121 | 361 | 0 | 482 | 0 | 307 | 55 | 362 | 0 | 0 | 0 | 0 | 25 | 0 | 60 | 85 | 929 |
| % Unshifted | 99.2 | 99.2 | 0 | 99.2 | 0 | 99.4 | 100 | 99.5 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 100 | 99.4 |
| HV | 1 | 3 | 0 | 4 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| % HV | 0.8 | 0.8 | 0 | 0.8 | 0 | 0.6 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

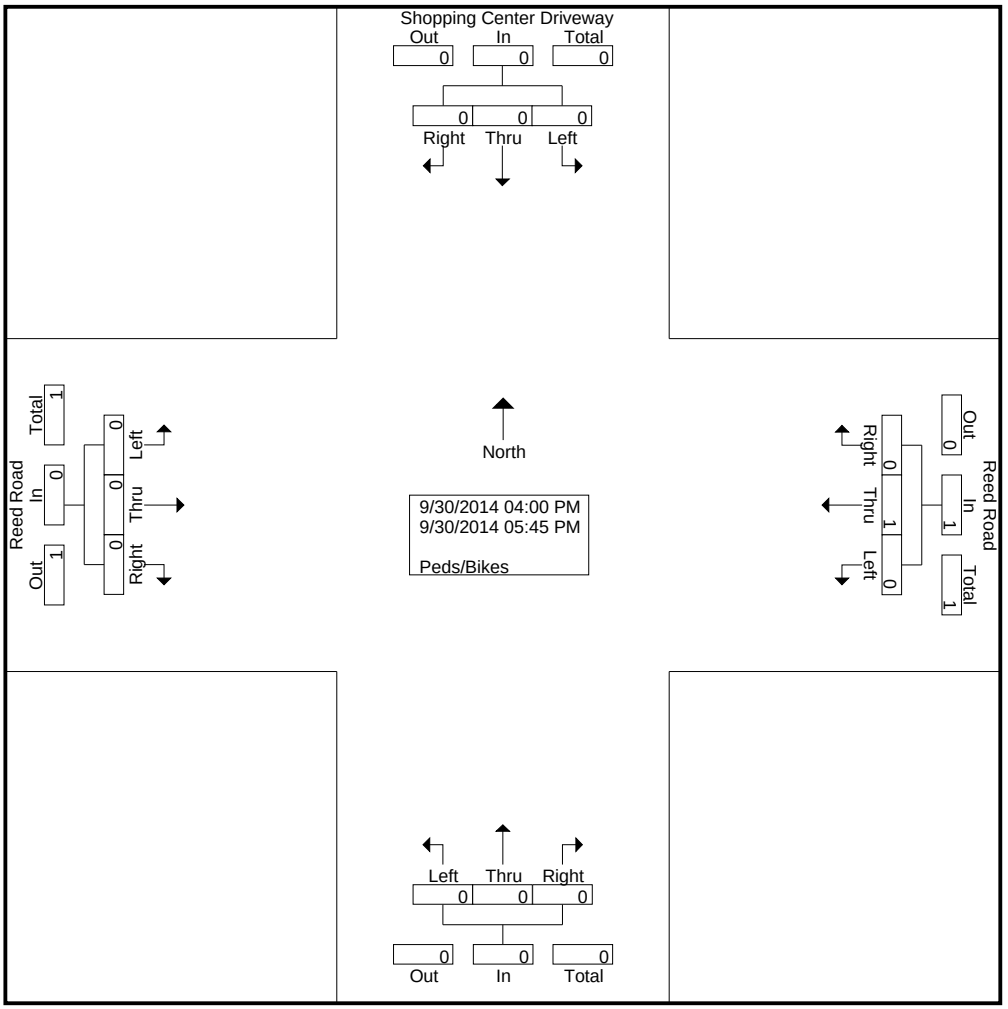
# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

Counter: 7
Counted by: J.Gable
Weather: Clear

File Name : 2014-09-30 PM Reed Shopping Center
Site Code : 00000000
Start Date : 9/30/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Reed Road Eastbound | | | | | Reed Road Westbound | | | | | Northbound | | | | | Shopping Center Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Left | Thru | Right | RTOR | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Apprch % | 0 | 0 | 0 | | | 0 | 100 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 100 | 0 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 100 | |

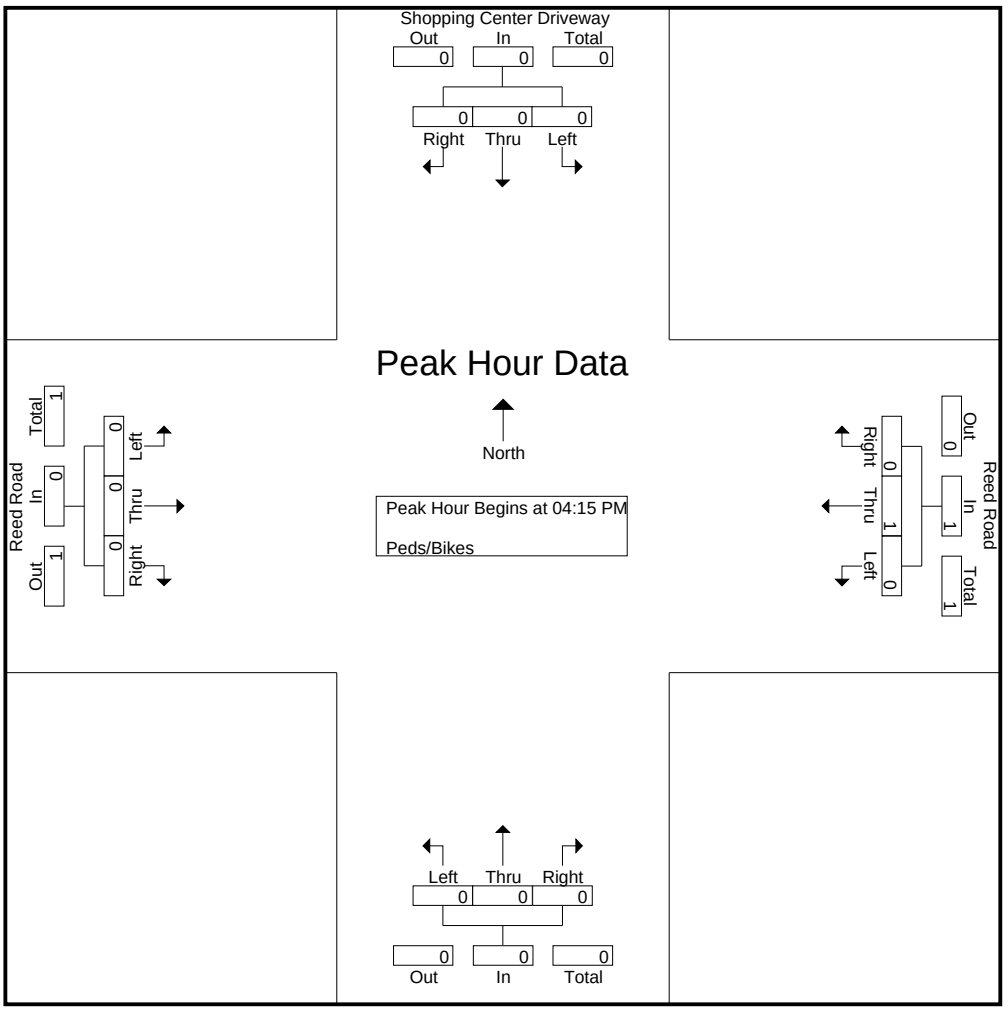


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Reed Road & Shopping Center Driveway
# Marple Township, Delaware County

File Name : 2014-09-30 PM Reed Shopping Center
Site Code : 00000000
Start Date : 9/30/2014
Page No : 2

| | Reed Road Eastbound | | | | Reed Road Westbound | | | | Northbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | | | | | | |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | **1** | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |



Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Shopping Center Driveway - SAT
Site Code:
Start Date: 10/04/2014

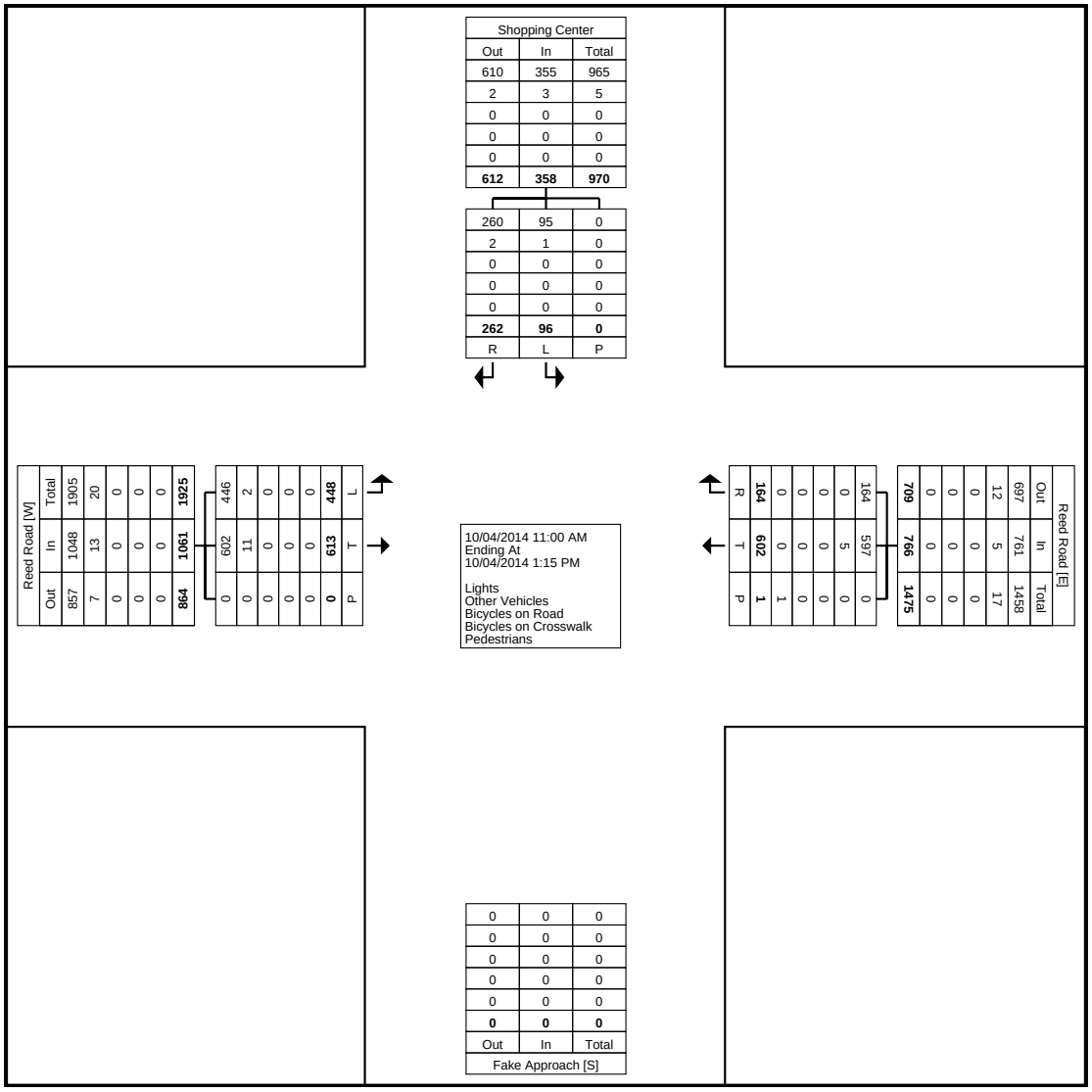

# Turning Movement Data

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 60 | 84 | 0 | 144 | 59 | 16 | 0 | 75 | 16 | 31 | 0 | 47 | 266 |
| 11:15 AM | 47 | 62 | 0 | 109 | 78 | 15 | 0 | 93 | 11 | 29 | 0 | 40 | 242 |
| 11:30 AM | 61 | 61 | 0 | 122 | 83 | 25 | 0 | 108 | 5 | 34 | 0 | 39 | 269 |
| 11:45 AM | 61 | 88 | 0 | 149 | 68 | 16 | 1 | 84 | 17 | 35 | 0 | 52 | 285 |
| Hourly Total | 229 | 295 | 0 | 524 | 288 | 72 | 1 | 360 | 49 | 129 | 0 | 178 | 1062 |
| 12:00 PM | 63 | 81 | 0 | 144 | 77 | 24 | 0 | 101 | 15 | 42 | 0 | 57 | 302 |
| 12:15 PM | 58 | 78 | 0 | 136 | 93 | 26 | 0 | 119 | 11 | 31 | 0 | 42 | 297 |
| 12:30 PM | 47 | 81 | 0 | 128 | 82 | 20 | 0 | 102 | 9 | 23 | 0 | 32 | 262 |
| 12:45 PM | 51 | 78 | 0 | 129 | 62 | 22 | 0 | 84 | 12 | 37 | 0 | 49 | 262 |
| Hourly Total | 219 | 318 | 0 | 537 | 314 | 92 | 0 | 406 | 47 | 133 | 0 | 180 | 1123 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 448 | 613 | 0 | 1061 | 602 | 164 | 1 | 766 | 96 | 262 | 0 | 358 | 2185 |
| Approach % | 42.2 | 57.8 | - | - | 78.6 | 21.4 | - | - | 26.8 | 73.2 | - | - | - |
| Total % | 20.5 | 28.1 | - | 48.6 | 27.6 | 7.5 | - | 35.1 | 4.4 | 12.0 | - | 16.4 | - |
| Lights | 446 | 602 | - | 1048 | 597 | 164 | - | 761 | 95 | 260 | - | 355 | 2164 |
| % Lights | 99.6 | 98.2 | - | 98.8 | 99.2 | 100.0 | - | 99.3 | 99.0 | 99.2 | - | 99.2 | 99.0 |
| Other Vehicles | 2 | 11 | - | 13 | 5 | 0 | - | 5 | 1 | 2 | - | 3 | 21 |
| % Other Vehicles | 0.4 | 1.8 | - | 1.2 | 0.8 | 0.0 | - | 0.7 | 1.0 | 0.8 | - | 0.8 | 1.0 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | 0.0 | - | - | - | - | - | - |
| Pedestrians | - | - | 0 | - | - | - | 1 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | 100.0 | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Shopping Center Driveway - SAT
Site Code:
Start Date: 10/04/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Shopping Center Driveway - SAT
Site Code:
Start Date: 10/04/2014

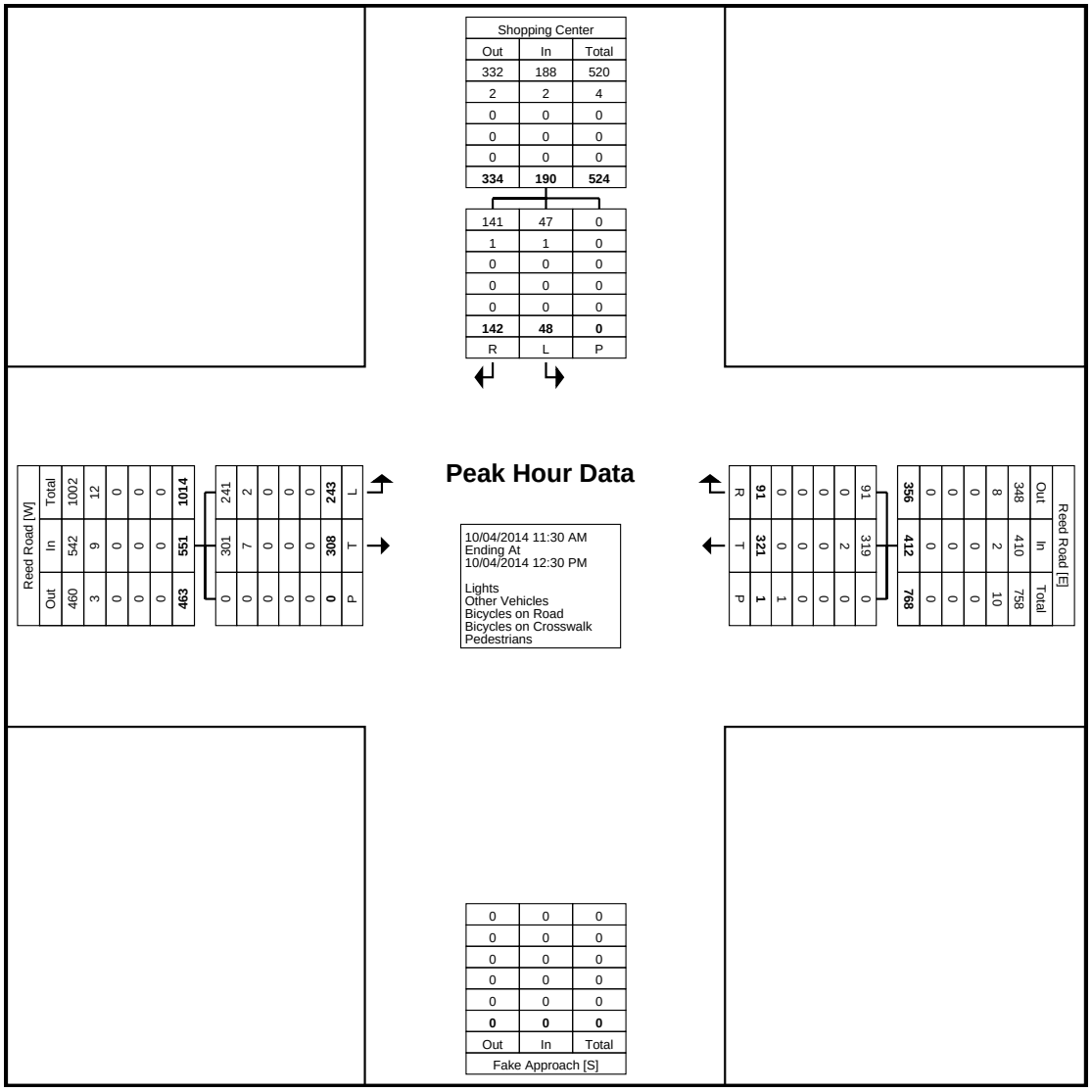

# Turning Movement Peak Hour Data (11:30 AM)

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Shopping Center Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:30 AM | 61 | 61 | 0 | 122 | 83 | 25 | 0 | 108 | 5 | 34 | 0 | 39 | 269 |
| 11:45 AM | 61 | 88 | 0 | 149 | 68 | 16 | 1 | 84 | 17 | 35 | 0 | 52 | 285 |
| 12:00 PM | 63 | 81 | 0 | 144 | 77 | 24 | 0 | 101 | 15 | 42 | 0 | 57 | 302 |
| 12:15 PM | 58 | 78 | 0 | 136 | 93 | 26 | 0 | 119 | 11 | 31 | 0 | 42 | 297 |
| Total | 243 | 308 | 0 | 551 | 321 | 91 | 1 | 412 | 48 | 142 | 0 | 190 | 1153 |
| Approach % | 44.1 | 55.9 | - | - | 77.9 | 22.1 | - | - | 25.3 | 74.7 | - | - | - |
| Total % | 21.1 | 26.7 | - | 47.8 | 27.8 | 7.9 | - | 35.7 | 4.2 | 12.3 | - | 16.5 | - |
| PHF | 0.964 | 0.875 | - | 0.924 | 0.863 | 0.875 | - | 0.866 | 0.706 | 0.845 | - | 0.833 | 0.954 |
| Lights | 241 | 301 | - | 542 | 319 | 91 | - | 410 | 47 | 141 | - | 188 | 1140 |
| % Lights | 99.2 | 97.7 | - | 98.4 | 99.4 | 100.0 | - | 99.5 | 97.9 | 99.3 | - | 98.9 | 98.9 |
| Other Vehicles | 2 | 7 | - | 9 | 2 | 0 | - | 2 | 1 | 1 | - | 2 | 13 |
| % Other Vehicles | 0.8 | 2.3 | - | 1.6 | 0.6 | 0.0 | - | 0.5 | 2.1 | 0.7 | - | 1.1 | 1.1 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | 0.0 | - | - | - | - | - | - |
| Pedestrians | - | - | 0 | - | - | - | 1 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | 100.0 | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Shopping Center Driveway - SAT
Site Code:
Start Date: 10/04/2014
Page No: 4




Turning Movement Peak Hour Data Plot (11:30 AM)

# *REED ROAD & LAWRENCE BUSINESS PARK DRIVEWAY*

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Business Park - AM & PM
Site Code:
Start Date: 09/30/2014

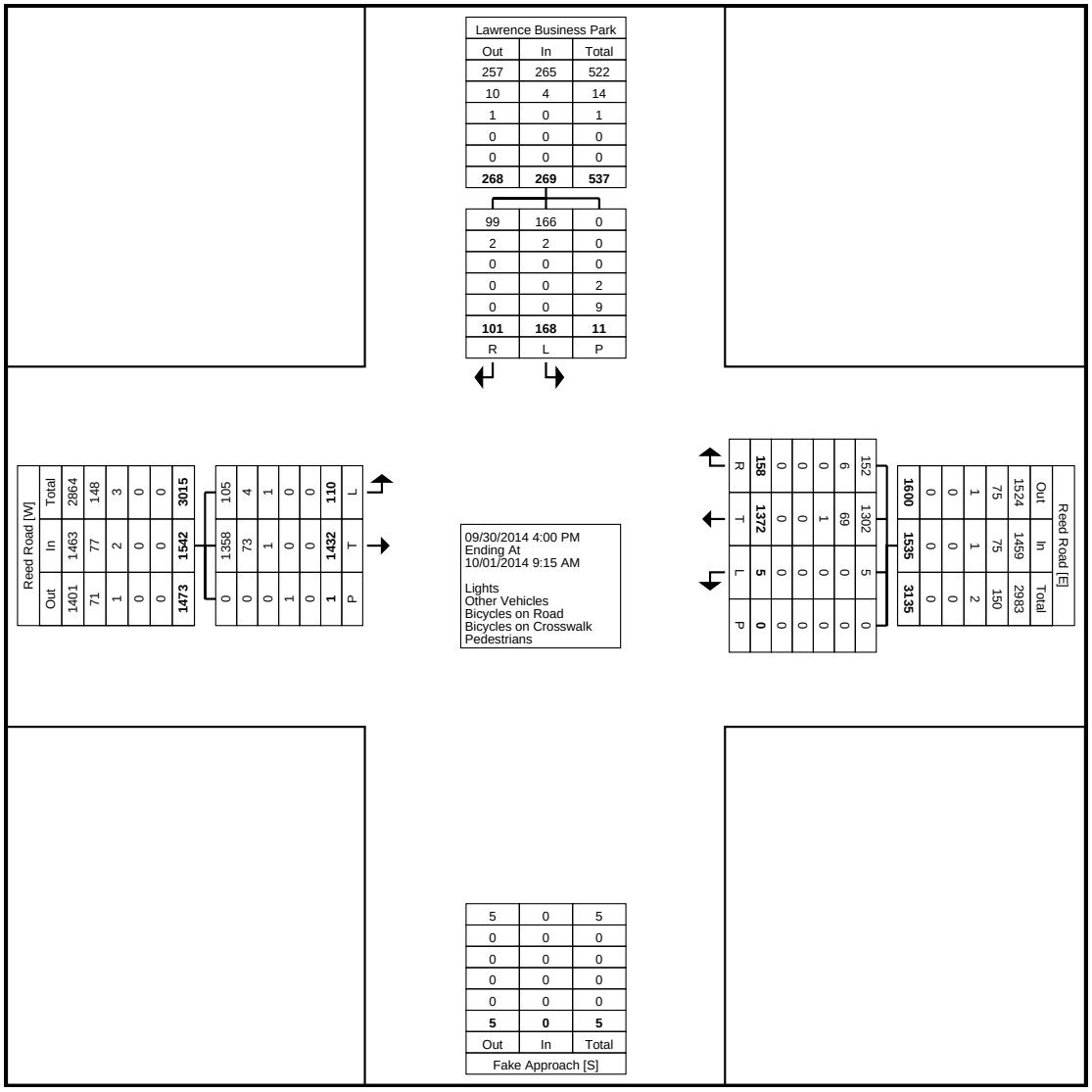

# Turning Movement Data

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | | Lawrence Business Park Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 4:00 PM | 7 | 90 | 1 | 97 | 0 | 94 | 3 | 0 | 97 | 14 | 17 | 3 | 31 | 225 |
| 4:15 PM | 4 | 112 | 0 | 116 | 0 | 71 | 10 | 0 | 81 | 11 | 10 | 1 | 21 | 218 |
| 4:30 PM | 9 | 103 | 0 | 112 | 0 | 104 | 12 | 0 | 116 | 22 | 14 | 1 | 36 | 264 |
| 4:45 PM | 5 | 89 | 0 | 94 | 0 | 76 | 5 | 0 | 81 | 20 | 7 | 2 | 27 | 202 |
| Hourly Total | 25 | 394 | 1 | 419 | 0 | 345 | 30 | 0 | 375 | 67 | 48 | 7 | 115 | 909 |
| 5:00 PM | 8 | 115 | 0 | 123 | 2 | 98 | 12 | 0 | 112 | 18 | 15 | 0 | 33 | 268 |
| 5:15 PM | 2 | 92 | 0 | 94 | 0 | 95 | 5 | 0 | 100 | 15 | 12 | 0 | 27 | 221 |
| 5:30 PM | 1 | 102 | 0 | 103 | 0 | 86 | 7 | 0 | 93 | 18 | 8 | 1 | 26 | 222 |
| 5:45 PM | 4 | 66 | 0 | 70 | 3 | 55 | 6 | 0 | 64 | 8 | 1 | 1 | 9 | 143 |
| Hourly Total | 15 | 375 | 0 | 390 | 5 | 334 | 30 | 0 | 369 | 59 | 36 | 2 | 95 | 854 |
| 6:00 PM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 7:00 AM | 2 | 55 | 0 | 57 | 0 | 58 | 7 | 0 | 65 | 4 | 0 | 0 | 4 | 126 |
| 7:15 AM | 3 | 58 | 0 | 61 | 0 | 87 | 7 | 0 | 94 | 3 | 1 | 0 | 4 | 159 |
| 7:30 AM | 7 | 68 | 0 | 75 | 0 | 99 | 13 | 0 | 112 | 4 | 1 | 0 | 5 | 192 |
| 7:45 AM | 13 | 108 | 0 | 121 | 0 | 84 | 11 | 0 | 95 | 2 | 3 | 0 | 5 | 221 |
| Hourly Total | 25 | 289 | 0 | 314 | 0 | 328 | 38 | 0 | 366 | 13 | 5 | 0 | 18 | 698 |
| 8:00 AM | 14 | 91 | 0 | 105 | 0 | 83 | 11 | 0 | 94 | 10 | 3 | 1 | 13 | 212 |
| 8:15 AM | 10 | 79 | 0 | 89 | 0 | 81 | 20 | 0 | 101 | 6 | 2 | 0 | 8 | 198 |
| 8:30 AM | 9 | 97 | 0 | 106 | 0 | 111 | 11 | 0 | 122 | 7 | 1 | 1 | 8 | 236 |
| 8:45 AM | 12 | 104 | 0 | 116 | 0 | 90 | 18 | 0 | 108 | 6 | 6 | 0 | 12 | 236 |
| Hourly Total | 45 | 371 | 0 | 416 | 0 | 365 | 60 | 0 | 425 | 29 | 12 | 2 | 41 | 882 |
| 9:00 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 110 | 1432 | 1 | 1542 | 5 | 1372 | 158 | 0 | 1535 | 168 | 101 | 11 | 269 | 3346 |
| Approach % | 7.1 | 92.9 | - | - | 0.3 | 89.4 | 10.3 | - | - | 62.5 | 37.5 | - | - | - |
| Total % | 3.3 | 42.8 | - | 46.1 | 0.1 | 41.0 | 4.7 | - | 45.9 | 5.0 | 3.0 | - | 8.0 | - |
| Lights | 105 | 1358 | - | 1463 | 5 | 1302 | 152 | - | 1459 | 166 | 99 | - | 265 | 3187 |
| % Lights | 95.5 | 94.8 | - | 94.9 | 100.0 | 94.9 | 96.2 | - | 95.0 | 98.8 | 98.0 | - | 98.5 | 95.2 |
| Other Vehicles | 4 | 73 | - | 77 | 0 | 69 | 6 | - | 75 | 2 | 2 | - | 4 | 156 |
| % Other Vehicles | 3.6 | 5.1 | - | 5.0 | 0.0 | 5.0 | 3.8 | - | 4.9 | 1.2 | 2.0 | - | 1.5 | 4.7 |
| Bicycles on Road | 1 | 1 | - | 2 | 0 | 1 | 0 | - | 1 | 0 | 0 | - | 0 | 3 |
| % Bicycles on Road | 0.9 | 0.1 | - | 0.1 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | 1 | - | - | - | - | 0 | - | - | - | 2 | - | - |
| % Bicycles on Crosswalk | - | - | 100.0 | - | - | - | - | - | - | - | - | 18.2 | - | - |
| Pedestrians | - | - | 0 | - | - | - | - | 0 | - | - | - | 9 | - | - |
| % Pedestrians | - | - | 0.0 | - | - | - | - | - | - | - | - | 81.8 | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Business Park - AM & PM
Site Code:
Start Date: 09/30/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Business Park - AM & PM
Site Code:
Start Date: 09/30/2014


# Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | | Lawrence Business Park Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 4:30 PM | 9 | 103 | 0 | 112 | 0 | 104 | 12 | 0 | 116 | 22 | 14 | 1 | 36 | 264 |
| 4:45 PM | 5 | 89 | 0 | 94 | 0 | 76 | 5 | 0 | 81 | 20 | 7 | 2 | 27 | 202 |
| 5:00 PM | 8 | 115 | 0 | 123 | 2 | 98 | 12 | 0 | 112 | 18 | 15 | 0 | 33 | 268 |
| 5:15 PM | 2 | 92 | 0 | 94 | 0 | 95 | 5 | 0 | 100 | 15 | 12 | 0 | 27 | 221 |
| Total | 24 | 399 | 0 | 423 | 2 | 373 | 34 | 0 | 409 | 75 | 48 | 3 | 123 | 955 |
| Approach % | 5.7 | 94.3 | - | - | 0.5 | 91.2 | 8.3 | - | - | 61.0 | 39.0 | - | - | - |
| Total % | 2.5 | 41.8 | - | 44.3 | 0.2 | 39.1 | 3.6 | - | 42.8 | 7.9 | 5.0 | - | 12.9 | - |
| PHF | 0.667 | 0.867 | - | 0.860 | 0.250 | 0.897 | 0.708 | - | 0.881 | 0.852 | 0.800 | - | 0.854 | 0.891 |
| Lights | 23 | 389 | - | 412 | 2 | 368 | 34 | - | 404 | 75 | 48 | - | 123 | 939 |
| % Lights | 95.8 | 97.5 | - | 97.4 | 100.0 | 98.7 | 100.0 | - | 98.8 | 100.0 | 100.0 | - | 100.0 | 98.3 |
| Other Vehicles | 1 | 10 | - | 11 | 0 | 4 | 0 | - | 4 | 0 | 0 | - | 0 | 15 |
| % Other Vehicles | 4.2 | 2.5 | - | 2.6 | 0.0 | 1.1 | 0.0 | - | 1.0 | 0.0 | 0.0 | - | 0.0 | 1.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 0 | - | - | - | - | 0 | - | - | - | 3 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com



## Peak Hour Data

09/30/2014 4:30 PM
Ending At
09/30/2014 5:30 PM

Lights
Other Vehicles
Bicycles on Road
Bicycles on Crosswalk
Pedestrians

**Lawrence Business Park**

| Out | In | Total |
|---|---|---|
| 57 | 123 | 180 |
| 1 | 0 | 1 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **58** | **123** | **181** |

| R | L | P |
|---|---|---|
| 48 | 75 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 3 |
| **48** | **75** | **3** |

**Reed Road [W]**

| Out | In | Total |
|---|---|---|
| 416 | 412 | 828 |
| 4 | 11 | 15 |
| 1 | 0 | 1 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **421** | **423** | **844** |

| L | T | P |
|---|---|---|
| 23 | 389 | 0 |
| 1 | 10 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **24** | **399** | **0** |

**Reed Road [E]**

| Out | In | Total |
|---|---|---|
| 464 | 404 | 868 |
| 10 | 4 | 14 |
| 0 | 1 | 1 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **474** | **409** | **883** |

| R | T | L | P |
|---|---|---|---|
| 34 | 368 | 2 | 0 |
| 0 | 4 | 0 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| **34** | **373** | **2** | **0** |

**Fake Approach [S]**

| Out | In | Total |
|---|---|---|
| 2 | 0 | 2 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **2** | **0** | **2** |

Turning Movement Peak Hour Data Plot (4:30 PM)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Business Park - AM & PM
Site Code:
Start Date: 09/30/2014

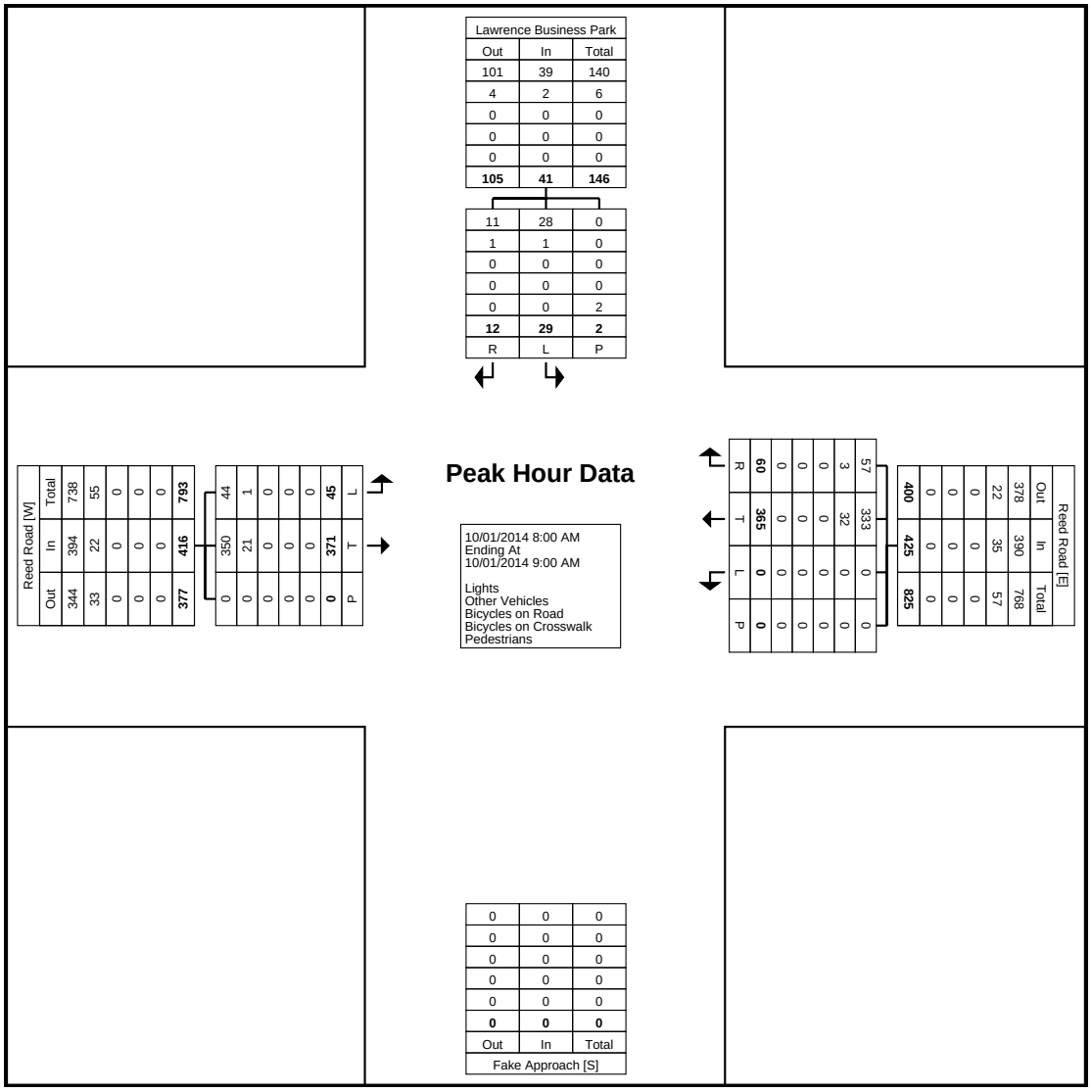

# Turning Movement Peak Hour Data (8:00 AM)

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | | Lawrence Business Park Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 8:00 AM | 14 | 91 | 0 | 105 | 0 | 83 | 11 | 0 | 94 | 10 | 3 | 1 | 13 | 212 |
| 8:15 AM | 10 | 79 | 0 | 89 | 0 | 81 | 20 | 0 | 101 | 6 | 2 | 0 | 8 | 198 |
| 8:30 AM | 9 | 97 | 0 | 106 | 0 | 111 | 11 | 0 | 122 | 7 | 1 | 1 | 8 | 236 |
| 8:45 AM | 12 | 104 | 0 | 116 | 0 | 90 | 18 | 0 | 108 | 6 | 6 | 0 | 12 | 236 |
| Total | 45 | 371 | 0 | 416 | 0 | 365 | 60 | 0 | 425 | 29 | 12 | 2 | 41 | 882 |
| Approach % | 10.8 | 89.2 | - | - | 0.0 | 85.9 | 14.1 | - | - | 70.7 | 29.3 | - | - | - |
| Total % | 5.1 | 42.1 | - | 47.2 | 0.0 | 41.4 | 6.8 | - | 48.2 | 3.3 | 1.4 | - | 4.6 | - |
| PHF | 0.804 | 0.892 | - | 0.897 | 0.000 | 0.822 | 0.750 | - | 0.871 | 0.725 | 0.500 | - | 0.788 | 0.934 |
| Lights | 44 | 350 | - | 394 | 0 | 333 | 57 | - | 390 | 28 | 11 | - | 39 | 823 |
| % Lights | 97.8 | 94.3 | - | 94.7 | - | 91.2 | 95.0 | - | 91.8 | 96.6 | 91.7 | - | 95.1 | 93.3 |
| Other Vehicles | 1 | 21 | - | 22 | 0 | 32 | 3 | - | 35 | 1 | 1 | - | 2 | 59 |
| % Other Vehicles | 2.2 | 5.7 | - | 5.3 | - | 8.8 | 5.0 | - | 8.2 | 3.4 | 8.3 | - | 4.9 | 6.7 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 0 | - | - | - | - | 0 | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: RK
Weather:: Clear

Count Name: Reed Road & Lawrence Business Park - AM & PM
Site Code:
Start Date: 09/30/2014
Page No: 6




Turning Movement Peak Hour Data Plot (8:00 AM)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Park Driveway - SAT
Site Code:
Start Date: 10/04/2014

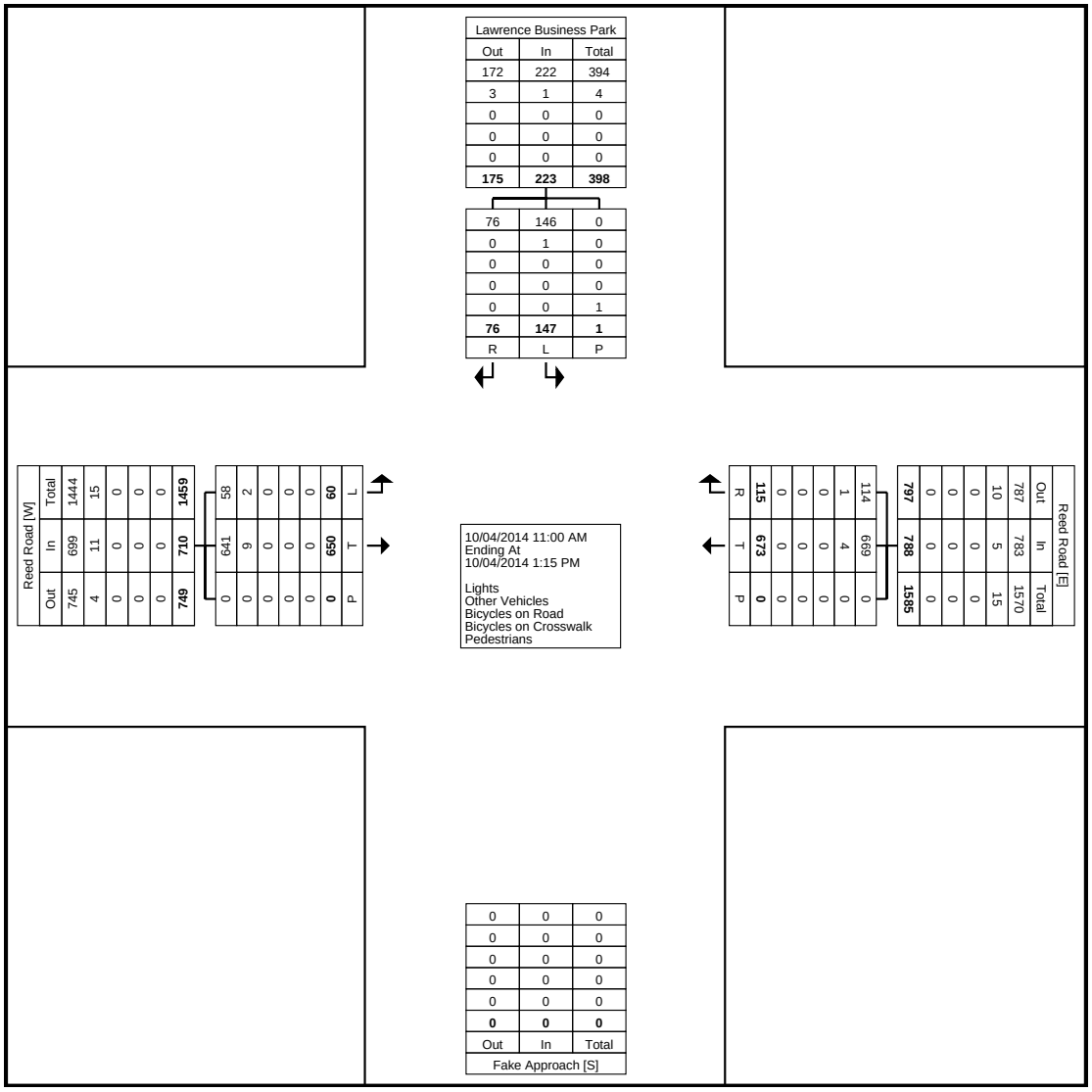

# Turning Movement Data

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Lawrence Business Park Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 9 | 81 | 0 | 90 | 76 | 14 | 0 | 90 | 27 | 7 | 0 | 34 | 214 |
| 11:15 AM | 6 | 58 | 0 | 64 | 86 | 15 | 0 | 101 | 20 | 6 | 0 | 26 | 191 |
| 11:30 AM | 7 | 79 | 0 | 86 | 89 | 13 | 0 | 102 | 11 | 13 | 0 | 24 | 212 |
| 11:45 AM | 4 | 94 | 0 | 98 | 77 | 12 | 0 | 89 | 10 | 11 | 1 | 21 | 208 |
| Hourly Total | 26 | 312 | 0 | 338 | 328 | 54 | 0 | 382 | 68 | 37 | 1 | 105 | 825 |
| 12:00 PM | 4 | 89 | 0 | 93 | 92 | 23 | 0 | 115 | 20 | 8 | 0 | 28 | 236 |
| 12:15 PM | 16 | 76 | 0 | 92 | 103 | 9 | 0 | 112 | 24 | 11 | 0 | 35 | 239 |
| 12:30 PM | 6 | 74 | 0 | 80 | 78 | 11 | 0 | 89 | 22 | 10 | 0 | 32 | 201 |
| 12:45 PM | 8 | 99 | 0 | 107 | 72 | 18 | 0 | 90 | 13 | 10 | 0 | 23 | 220 |
| Hourly Total | 34 | 338 | 0 | 372 | 345 | 61 | 0 | 406 | 79 | 39 | 0 | 118 | 896 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 60 | 650 | 0 | 710 | 673 | 115 | 0 | 788 | 147 | 76 | 1 | 223 | 1721 |
| Approach % | 8.5 | 91.5 | - | - | 85.4 | 14.6 | - | - | 65.9 | 34.1 | - | - | - |
| Total % | 3.5 | 37.8 | - | 41.3 | 39.1 | 6.7 | - | 45.8 | 8.5 | 4.4 | - | 13.0 | - |
| Lights | 58 | 641 | - | 699 | 669 | 114 | - | 783 | 146 | 76 | - | 222 | 1704 |
| % Lights | 96.7 | 98.6 | - | 98.5 | 99.4 | 99.1 | - | 99.4 | 99.3 | 100.0 | - | 99.6 | 99.0 |
| Other Vehicles | 2 | 9 | - | 11 | 4 | 1 | - | 5 | 1 | 0 | - | 1 | 17 |
| % Other Vehicles | 3.3 | 1.4 | - | 1.5 | 0.6 | 0.9 | - | 0.6 | 0.7 | 0.0 | - | 0.4 | 1.0 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Park Driveway - SAT
Site Code:
Start Date: 10/04/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Park Driveway - SAT
Site Code:
Start Date: 10/04/2014

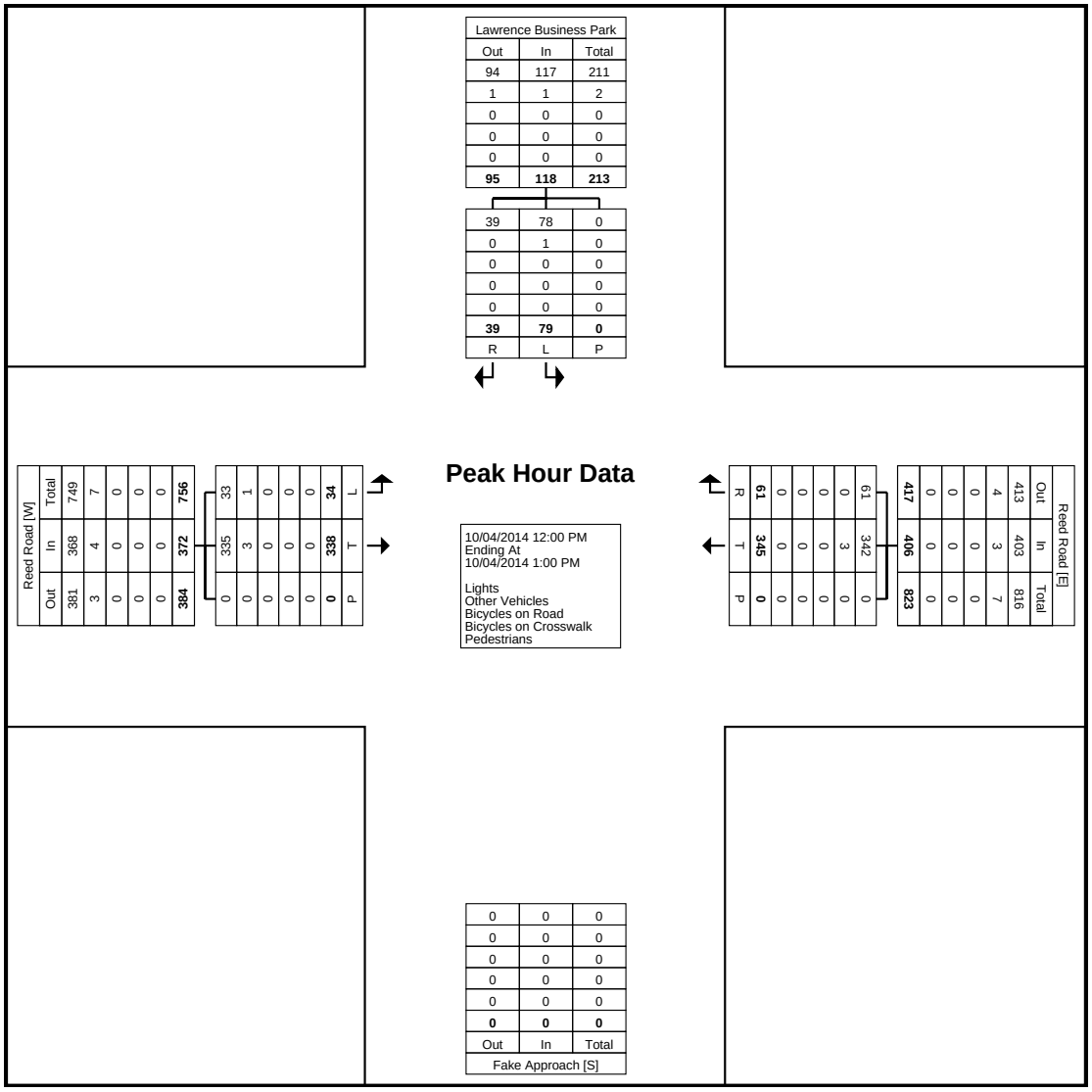

# Turning Movement Peak Hour Data (12:00 PM)

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Lawrence Business Park Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 12:00 PM | 4 | 89 | 0 | 93 | 92 | 23 | 0 | 115 | 20 | 8 | 0 | 28 | 236 |
| 12:15 PM | 16 | 76 | 0 | 92 | 103 | 9 | 0 | 112 | 24 | 11 | 0 | 35 | 239 |
| 12:30 PM | 6 | 74 | 0 | 80 | 78 | 11 | 0 | 89 | 22 | 10 | 0 | 32 | 201 |
| 12:45 PM | 8 | 99 | 0 | 107 | 72 | 18 | 0 | 90 | 13 | 10 | 0 | 23 | 220 |
| Total | 34 | 338 | 0 | 372 | 345 | 61 | 0 | 406 | 79 | 39 | 0 | 118 | 896 |
| Approach % | 9.1 | 90.9 | - | - | 85.0 | 15.0 | - | - | 66.9 | 33.1 | - | - | - |
| Total % | 3.8 | 37.7 | - | 41.5 | 38.5 | 6.8 | - | 45.3 | 8.8 | 4.4 | - | 13.2 | - |
| PHF | 0.531 | 0.854 | - | 0.869 | 0.837 | 0.663 | - | 0.883 | 0.823 | 0.886 | - | 0.843 | 0.937 |
| Lights | 33 | 335 | - | 368 | 342 | 61 | - | 403 | 78 | 39 | - | 117 | 888 |
| % Lights | 97.1 | 99.1 | - | 98.9 | 99.1 | 100.0 | - | 99.3 | 98.7 | 100.0 | - | 99.2 | 99.1 |
| Other Vehicles | 1 | 3 | - | 4 | 3 | 0 | - | 3 | 1 | 0 | - | 1 | 8 |
| % Other Vehicles | 2.9 | 0.9 | - | 1.1 | 0.9 | 0.0 | - | 0.7 | 1.3 | 0.0 | - | 0.8 | 0.9 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Lawrence Park Driveway - SAT
Site Code:
Start Date: 10/04/2014
Page No: 4




Turning Movement Peak Hour Data Plot (12:00 PM)

## *REED ROAD & PARKWAY AVENUE*

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue S/Reed Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 13
Site Code : 13
Start Date : 9/9/2014
Page No : 1

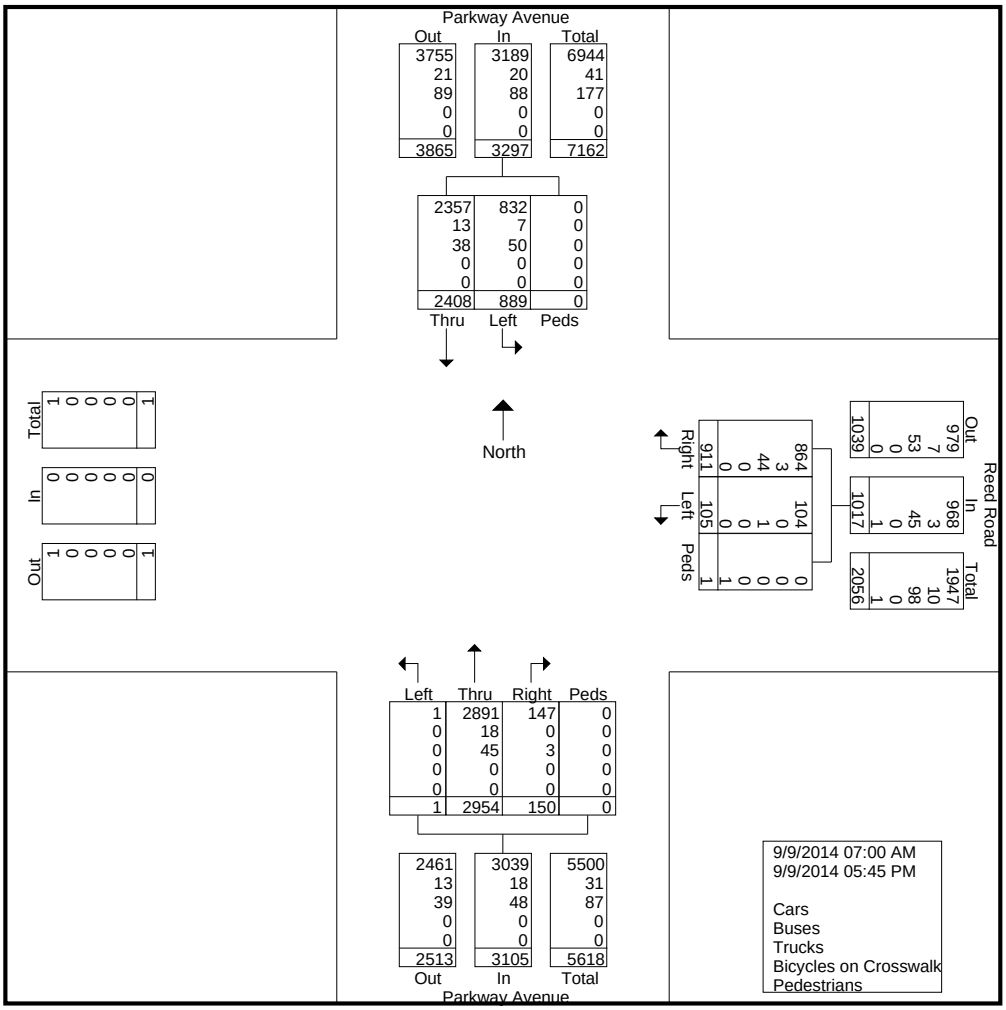
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Parkway Avenue Southbound | | | | Reed Road Westbound | | | | Parkway Avenue Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 48 | 31 | 0 | 79 | 26 | 0 | 0 | 26 | 4 | 167 | 0 | 0 | 171 | 276 |
| 07:15 AM | 67 | 42 | 0 | 109 | 24 | 2 | 0 | 26 | 7 | 239 | 0 | 0 | 246 | 381 |
| 07:30 AM | 69 | 31 | 0 | 100 | 19 | 2 | 0 | 21 | 4 | 259 | 0 | 0 | 263 | 384 |
| 07:45 AM | 74 | 54 | 0 | 128 | 22 | 0 | 0 | 22 | 6 | 237 | 0 | 0 | 243 | 393 |
| Total | 258 | 158 | 0 | 416 | 91 | 4 | 0 | 95 | 21 | 902 | 0 | 0 | 923 | 1434 |
| 08:00 AM | 64 | 55 | 0 | 119 | 31 | 0 | 0 | 31 | 10 | 228 | 0 | 0 | 238 | 388 |
| 08:15 AM | 62 | 54 | 0 | 116 | 24 | 1 | 0 | 25 | 12 | 214 | 0 | 0 | 226 | 367 |
| 08:30 AM | 85 | 53 | 0 | 138 | 30 | 3 | 0 | 33 | 17 | 164 | 0 | 0 | 181 | 352 |
| 08:45 AM | 70 | 63 | 0 | 133 | 30 | 1 | 0 | 31 | 13 | 157 | 0 | 0 | 170 | 334 |
| Total | 281 | 225 | 0 | 506 | 115 | 5 | 0 | 120 | 52 | 763 | 0 | 0 | 815 | 1441 |
| 03:00 PM | 105 | 41 | 0 | 146 | 39 | 5 | 0 | 44 | 4 | 104 | 1 | 0 | 109 | 299 |
| 03:15 PM | 106 | 40 | 0 | 146 | 41 | 4 | 0 | 45 | 6 | 93 | 0 | 0 | 99 | 290 |
| 03:30 PM | 109 | 52 | 0 | 161 | 48 | 5 | 0 | 53 | 3 | 103 | 0 | 0 | 106 | 320 |
| 03:45 PM | 118 | 43 | 0 | 161 | 45 | 3 | 0 | 48 | 7 | 97 | 0 | 0 | 104 | 313 |
| Total | 438 | 176 | 0 | 614 | 173 | 17 | 0 | 190 | 20 | 397 | 1 | 0 | 418 | 1222 |
| 04:00 PM | 150 | 41 | 0 | 191 | 55 | 7 | 0 | 62 | 12 | 87 | 0 | 0 | 99 | 352 |
| 04:15 PM | 153 | 31 | 0 | 184 | 53 | 11 | 1 | 65 | 8 | 84 | 0 | 0 | 92 | 341 |
| 04:30 PM | 197 | 40 | 0 | 237 | 86 | 15 | 0 | 101 | 7 | 112 | 0 | 0 | 119 | 457 |
| 04:45 PM | 165 | 36 | 0 | 201 | 67 | 5 | 0 | 72 | 3 | 125 | 0 | 0 | 128 | 401 |
| Total | 665 | 148 | 0 | 813 | 261 | 38 | 1 | 300 | 30 | 408 | 0 | 0 | 438 | 1551 |
| 05:00 PM | 187 | 44 | 0 | 231 | 73 | 12 | 0 | 85 | 4 | 121 | 0 | 0 | 125 | 441 |
| 05:15 PM | 195 | 61 | 0 | 256 | 66 | 12 | 0 | 78 | 15 | 133 | 0 | 0 | 148 | 482 |
| 05:30 PM | 204 | 41 | 0 | 245 | 82 | 8 | 0 | 90 | 6 | 116 | 0 | 0 | 122 | 457 |
| 05:45 PM | 180 | 36 | 0 | 216 | 50 | 9 | 0 | 59 | 2 | 114 | 0 | 0 | 116 | 391 |
| Total | 766 | 182 | 0 | 948 | 271 | 41 | 0 | 312 | 27 | 484 | 0 | 0 | 511 | 1771 |
| Grand Total | 2408 | 889 | 0 | 3297 | 911 | 105 | 1 | 1017 | 150 | 2954 | 1 | 0 | 3105 | 7419 |
| Apprch % | 73 | 27 | 0 | | 89.6 | 10.3 | 0.1 | | 4.8 | 95.1 | 0 | 0 | | |
| Total % | 32.5 | 12 | 0 | 44.4 | 12.3 | 1.4 | 0 | 13.7 | 2 | 39.8 | 0 | 0 | 41.9 | |
| Cars | 2357 | 832 | 0 | 3189 | 864 | 104 | 0 | 968 | 147 | 2891 | 1 | 0 | 3039 | 7196 |
| % Cars | 97.9 | 93.6 | 0 | 96.7 | 94.8 | 99 | 0 | 95.2 | 98 | 97.9 | 100 | 0 | 97.9 | 97 |
| Buses | 13 | 7 | 0 | 20 | 3 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 18 | 41 |
| % Buses | 0.5 | 0.8 | 0 | 0.6 | 0.3 | 0 | 0 | 0.3 | 0 | 0.6 | 0 | 0 | 0.6 | 0.6 |
| Trucks | 38 | 50 | 0 | 88 | 44 | 1 | 0 | 45 | 3 | 45 | 0 | 0 | 48 | 181 |
| % Trucks | 1.6 | 5.6 | 0 | 2.7 | 4.8 | 1 | 0 | 4.4 | 2 | 1.5 | 0 | 0 | 1.5 | 2.4 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue S/Reed Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 13
Site Code : 13
Start Date : 9/9/2014
Page No : 2

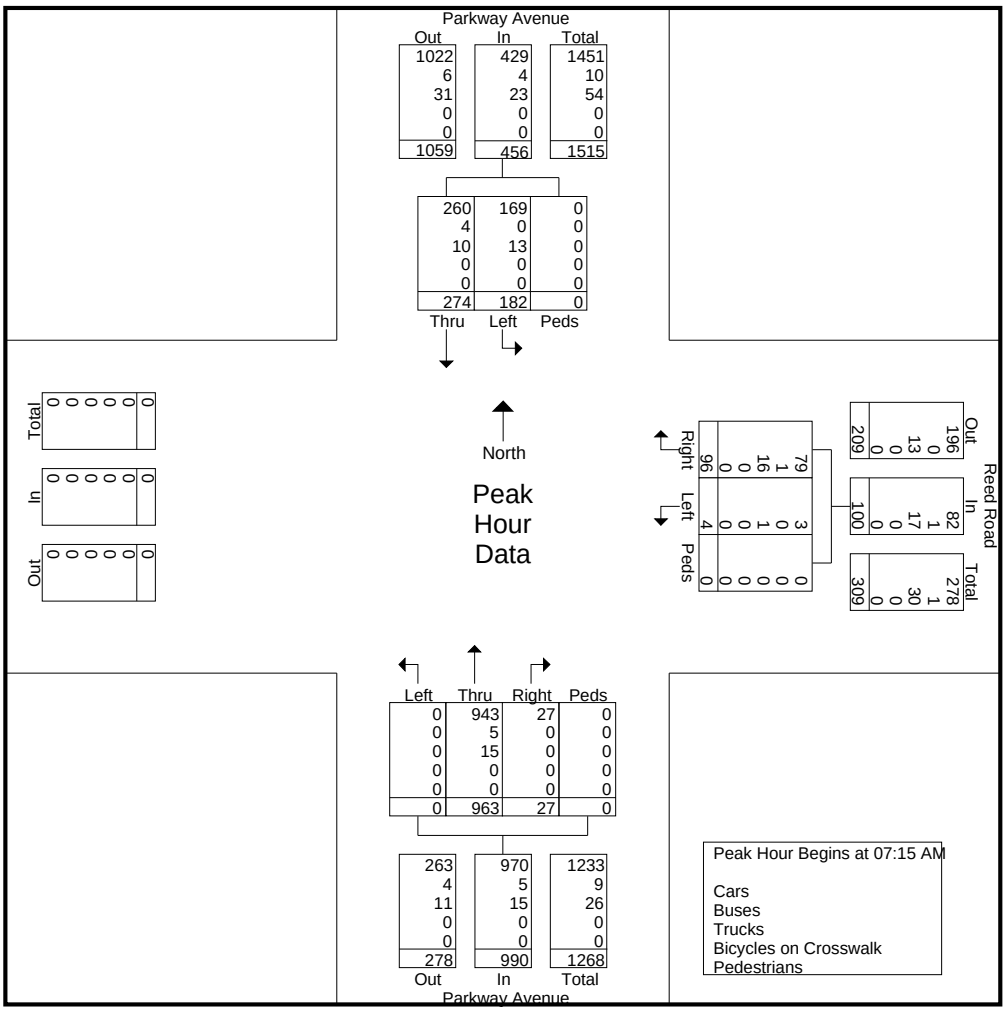


**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue S/Reed Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 13
Site Code : 13
Start Date : 9/9/2014
Page No : 4

| | Parkway Avenue Southbound | | | | Reed Road Westbound | | | | Parkway Avenue Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | |
| 07:15 AM | 67 | 42 | 0 | 109 | 24 | **2** | 0 | 26 | 7 | 239 | 0 | 0 | 246 | 381 |
| 07:30 AM | 69 | 31 | 0 | 100 | 19 | 2 | 0 | 21 | 4 | **259** | 0 | 0 | **263** | 384 |
| 07:45 AM | **74** | 54 | 0 | **128** | 22 | 0 | 0 | 22 | 6 | 237 | 0 | 0 | 243 | **393** |
| 08:00 AM | 64 | **55** | 0 | 119 | **31** | 0 | 0 | **31** | **10** | 228 | 0 | 0 | 238 | 388 |
| Total Volume | 274 | 182 | 0 | 456 | 96 | 4 | 0 | 100 | 27 | 963 | 0 | 0 | 990 | 1546 |
| % App. Total | 60.1 | 39.9 | 0 | | 96 | 4 | 0 | | 2.7 | 97.3 | 0 | 0 | | |
| PHF | .926 | .827 | .000 | .891 | .774 | .500 | .000 | .806 | .675 | .930 | .000 | .000 | .941 | .983 |
| Cars | 260 | 169 | 0 | 429 | 79 | 3 | 0 | 82 | 27 | 943 | 0 | 0 | 970 | 1481 |
| % Cars | 94.9 | 92.9 | 0 | 94.1 | 82.3 | 75.0 | 0 | 82.0 | 100 | 97.9 | 0 | 0 | 98.0 | 95.8 |
| Buses | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 5 | 10 |
| % Buses | 1.5 | 0 | 0 | 0.9 | 1.0 | 0 | 0 | 1.0 | 0 | 0.5 | 0 | 0 | 0.5 | 0.6 |
| Trucks | 10 | 13 | 0 | 23 | 16 | 1 | 0 | 17 | 0 | 15 | 0 | 0 | 15 | 55 |
| % Trucks | 3.6 | 7.1 | 0 | 5.0 | 16.7 | 25.0 | 0 | 17.0 | 0 | 1.6 | 0 | 0 | 1.5 | 3.6 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



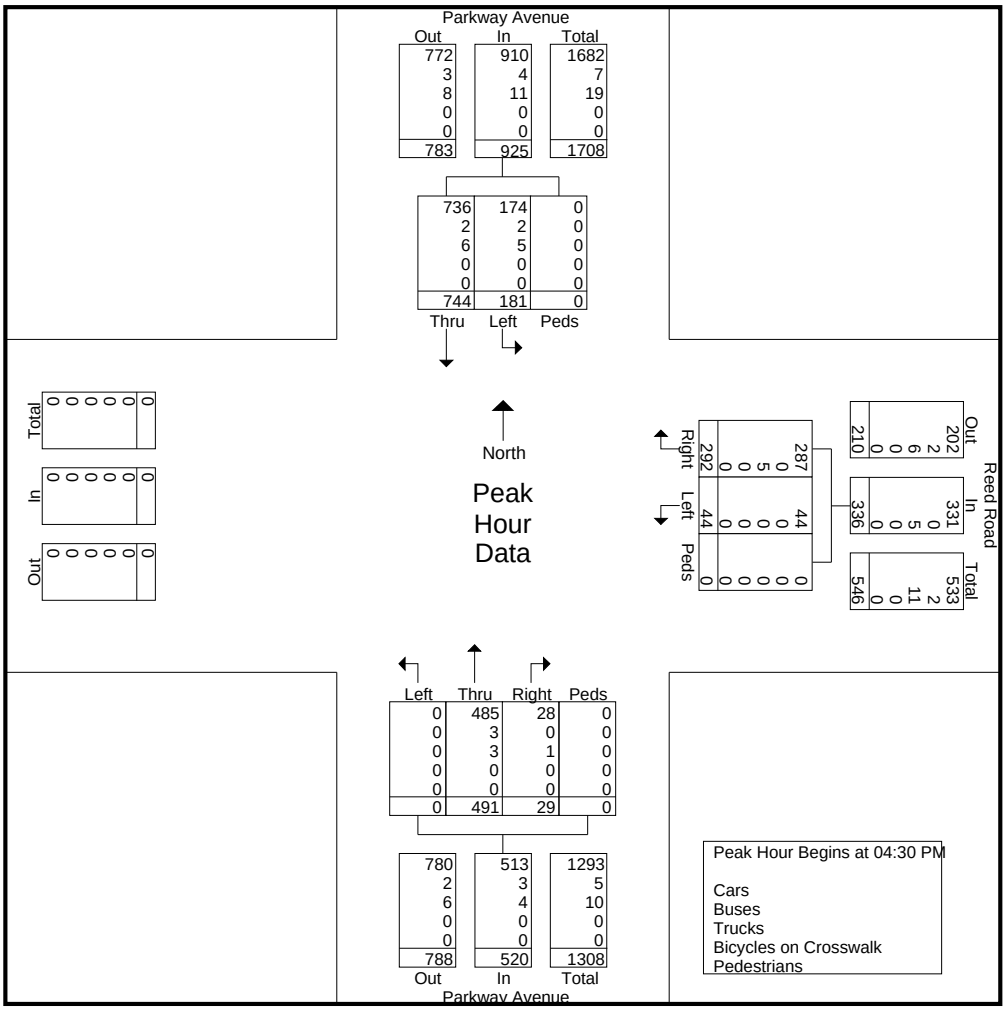
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Parkway Avenue S/Reed Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 13
Site Code : 13
Start Date : 9/9/2014
Page No : 5

| | Parkway Avenue Southbound | | | | Reed Road Westbound | | | | Parkway Avenue Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | |
| 04:30 PM | **197** | 40 | 0 | 237 | **86** | **15** | 0 | **101** | 7 | 112 | 0 | 0 | 119 | 457 |
| 04:45 PM | 165 | 36 | 0 | 201 | 67 | 5 | 0 | 72 | 3 | 125 | 0 | 0 | 128 | 401 |
| 05:00 PM | 187 | 44 | 0 | 231 | 73 | 12 | 0 | 85 | 4 | 121 | 0 | 0 | 125 | 441 |
| 05:15 PM | 195 | **61** | 0 | **256** | 66 | 12 | 0 | 78 | **15** | **133** | 0 | 0 | **148** | **482** |
| Total Volume | 744 | 181 | 0 | 925 | 292 | 44 | 0 | 336 | 29 | 491 | 0 | 0 | 520 | 1781 |
| % App. Total | 80.4 | 19.6 | 0 | | 86.9 | 13.1 | 0 | | 5.6 | 94.4 | 0 | 0 | | |
| PHF | .944 | .742 | .000 | .903 | .849 | .733 | .000 | .832 | .483 | .923 | .000 | .000 | .878 | .924 |
| Cars | 736 | 174 | 0 | 910 | 287 | 44 | 0 | 331 | 28 | 485 | 0 | 0 | 513 | 1754 |
| % Cars | 98.9 | 96.1 | 0 | 98.4 | 98.3 | 100 | 0 | 98.5 | 96.6 | 98.8 | 0 | 0 | 98.7 | 98.5 |
| Buses | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 7 |
| % Buses | 0.3 | 1.1 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0.6 | 0.4 |
| Trucks | 6 | 5 | 0 | 11 | 5 | 0 | 0 | 5 | 1 | 3 | 0 | 0 | 4 | 20 |
| % Trucks | 0.8 | 2.8 | 0 | 1.2 | 1.7 | 0 | 0 | 1.5 | 3.4 | 0.6 | 0 | 0 | 0.8 | 1.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Traffic Planning & Design
812 West Hamilton Street
Allentown, Pa, 18101

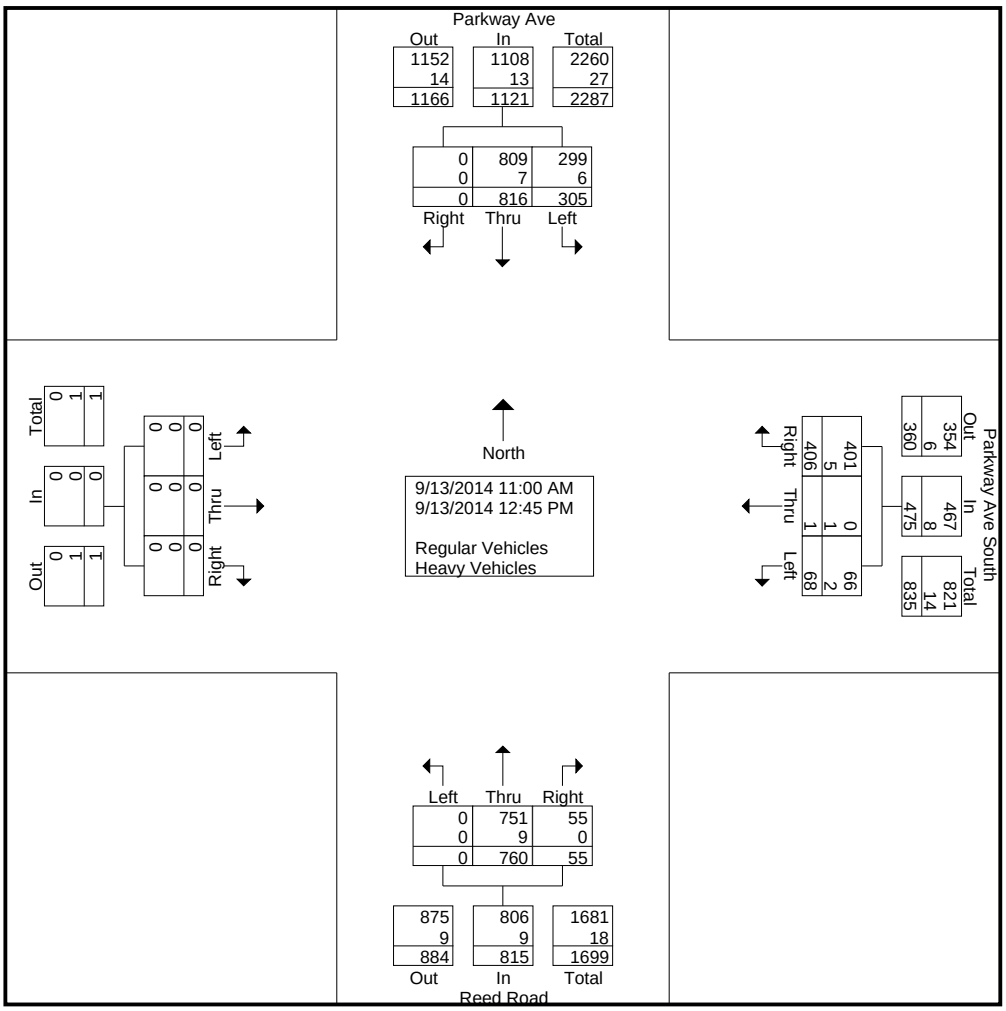
# Parkway Ave/Reed Rd & Parkway Ave South

Counter: 1
Counted by: MH
Weather: Overcast

File Name : 2014-09-13 SAT Parkway Ave_Reed Road
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Regular Vehicles - Heavy Vehicles**

| | Eastbound | | | | Parkway Ave South Westbound | | | | Reed Road Northbound | | | | Parkway Ave Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 11:00 AM | 0 | 0 | 0 | 0 | 7 | 0 | 58 | 65 | 0 | 89 | 13 | 102 | 48 | 84 | 0 | 132 | 299 |
| 11:15 AM | 0 | 0 | 0 | 0 | 11 | 0 | 48 | 59 | 0 | 102 | 10 | 112 | 36 | 98 | 0 | 134 | 305 |
| 11:30 AM | 0 | 0 | 0 | 0 | 10 | 0 | 46 | 56 | 0 | 86 | 5 | 91 | 28 | 79 | 0 | 107 | 254 |
| 11:45 AM | 0 | 0 | 0 | 0 | 5 | 0 | 39 | 44 | 0 | 78 | 11 | 89 | 51 | 74 | 0 | 125 | 258 |
| Total | 0 | 0 | 0 | 0 | 33 | 0 | 191 | 224 | 0 | 355 | 39 | 394 | 163 | 335 | 0 | 498 | 1116 |
| 12:00 PM | 0 | 0 | 0 | 0 | 11 | 1 | 56 | 68 | 0 | 81 | 7 | 88 | 29 | 128 | 0 | 157 | 313 |
| 12:15 PM | 0 | 0 | 0 | 0 | 11 | 0 | 62 | 73 | 0 | 104 | 4 | 108 | 36 | 125 | 0 | 161 | 342 |
| 12:30 PM | 0 | 0 | 0 | 0 | 10 | 0 | 63 | 73 | 0 | 119 | 2 | 121 | 34 | 118 | 0 | 152 | 346 |
| 12:45 PM | 0 | 0 | 0 | 0 | 3 | 0 | 34 | 37 | 0 | 101 | 3 | 104 | 43 | 110 | 0 | 153 | 294 |
| Total | 0 | 0 | 0 | 0 | 35 | 1 | 215 | 251 | 0 | 405 | 16 | 421 | 142 | 481 | 0 | 623 | 1295 |
| Grand Total | 0 | 0 | 0 | 0 | 68 | 1 | 406 | 475 | 0 | 760 | 55 | 815 | 305 | 816 | 0 | 1121 | 2411 |
| Apprch % | 0 | 0 | 0 | | 14.3 | 0.2 | 85.5 | | 0 | 93.3 | 6.7 | | 27.2 | 72.8 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 2.8 | 0 | 16.8 | 19.7 | 0 | 31.5 | 2.3 | 33.8 | 12.7 | 33.8 | 0 | 46.5 | |
| Regular Vehicles | 0 | 0 | 0 | 0 | 66 | 0 | 401 | 467 | 0 | 751 | 55 | 806 | 299 | 809 | 0 | 1108 | 2381 |
| % Regular Vehicles | 0 | 0 | 0 | 0 | 97.1 | 0 | 98.8 | 98.3 | 0 | 98.8 | 100 | 98.9 | 98 | 99.1 | 0 | 98.8 | 98.8 |
| Heavy Vehicles | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 8 | 0 | 9 | 0 | 9 | 6 | 7 | 0 | 13 | 30 |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 2.9 | 100 | 1.2 | 1.7 | 0 | 1.2 | 0 | 1.1 | 2 | 0.9 | 0 | 1.2 | 1.2 |



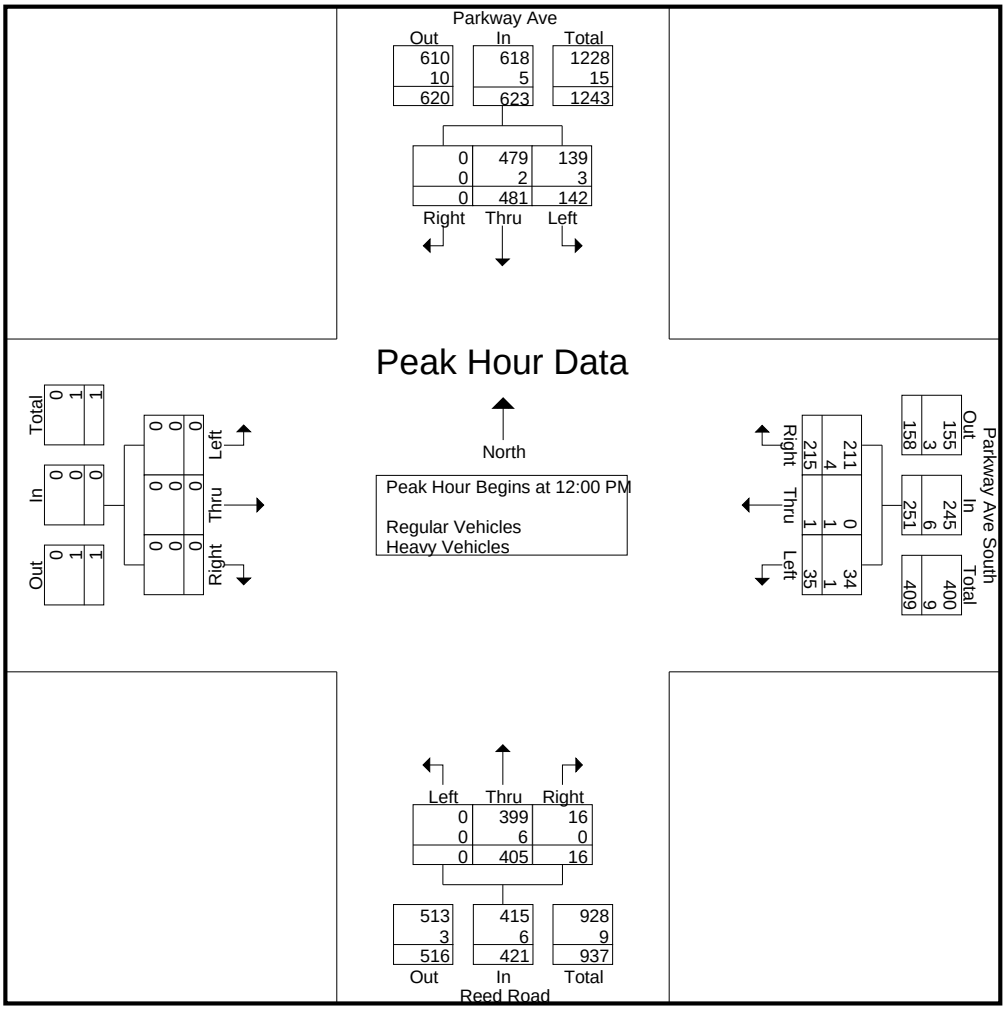
Traffic Planning & Design
812 West Hamilton Street
Allentown, Pa, 18101

**Parkway Ave/Reed Rd & Parkway Ave South**

Counter: 1
Counted by: MH
Weather: Overcast

File Name : 2014-09-13 SAT Parkway Ave_Reed Road
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Eastbound | | | | Parkway Ave South Westbound | | | | Reed Road Northbound | | | | Parkway Ave Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 11 | 1 | 56 | 68 | 0 | 81 | 7 | 88 | 29 | 128 | 0 | 157 | 313 |
| 12:15 PM | 0 | 0 | 0 | 0 | 11 | 0 | 62 | 73 | 0 | 104 | 4 | 108 | 36 | 125 | 0 | 161 | 342 |
| 12:30 PM | 0 | 0 | 0 | 0 | 10 | 0 | 63 | 73 | 0 | 119 | 2 | 121 | 34 | 118 | 0 | 152 | 346 |
| 12:45 PM | 0 | 0 | 0 | 0 | 3 | 0 | 34 | 37 | 0 | 101 | 3 | 104 | 43 | 110 | 0 | 153 | 294 |
| Total Volume | 0 | 0 | 0 | 0 | 35 | 1 | 215 | 251 | 0 | 405 | 16 | 421 | 142 | 481 | 0 | 623 | 1295 |
| % App. Total | 0 | 0 | 0 | | 13.9 | 0.4 | 85.7 | | 0 | 96.2 | 3.8 | | 22.8 | 77.2 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .795 | .250 | .853 | .860 | .000 | .851 | .571 | .870 | .826 | .939 | .000 | .967 | .936 |
| Regular Vehicles | 0 | 0 | 0 | 0 | 34 | 0 | 211 | 245 | 0 | 399 | 16 | 415 | 139 | 479 | 0 | 618 | 1278 |
| % Regular Vehicles | 0 | 0 | 0 | 0 | 97.1 | 0 | 98.1 | 97.6 | 0 | 98.5 | 100 | 98.6 | 97.9 | 99.6 | 0 | 99.2 | 98.7 |
| Heavy Vehicles | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 6 | 0 | 6 | 0 | 6 | 3 | 2 | 0 | 5 | 17 |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 2.9 | 100 | 1.9 | 2.4 | 0 | 1.5 | 0 | 1.4 | 2.1 | 0.4 | 0 | 0.8 | 1.3 |



Traffic Planning & Design
812 West Hamilton Street
Allentown, Pa, 18101

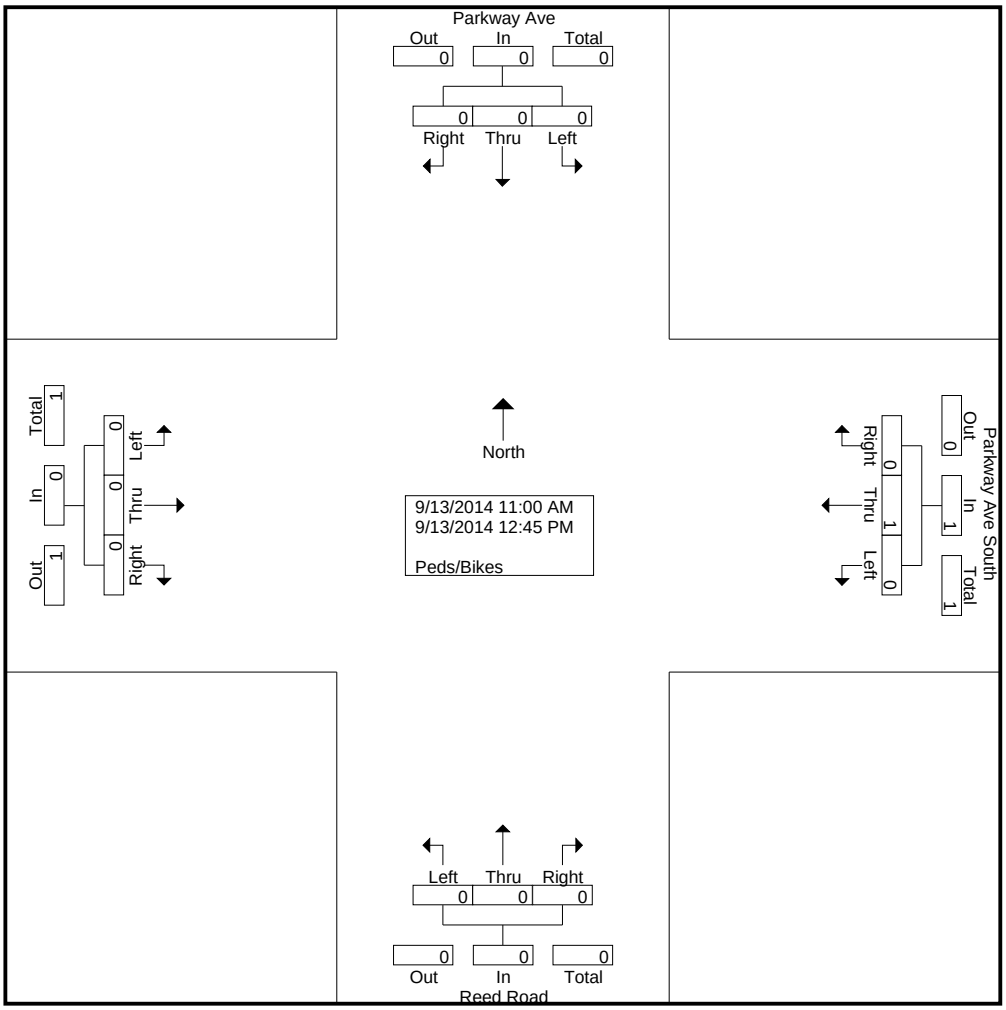
**Parkway Ave/Reed Rd & Parkway Ave South**

Counter: 1
Counted by: MH
Weather: Overcast

File Name : 2014-09-13 SAT Parkway Ave_Reed Road
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eastbound | | | | Parkway Ave South Westbound | | | | Reed Road Northbound | | | | Parkway Ave Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *** BREAK *** | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |



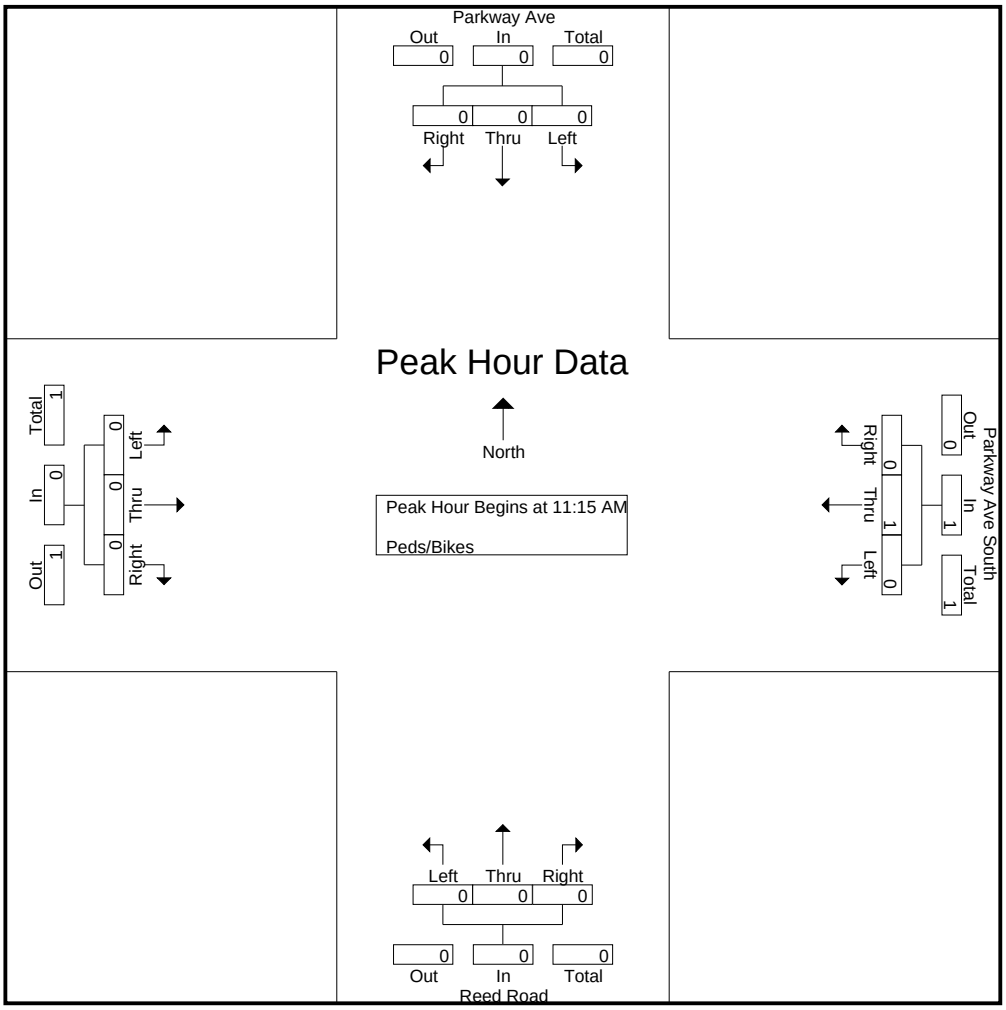
Traffic Planning & Design
812 West Hamilton Street
Allentown, Pa, 18101

**Parkway Ave/Reed Rd & Parkway Ave South**

Counter: 1
Counted by: MH
Weather: Overcast

File Name : 2014-09-13 SAT Parkway Ave_Reed Road
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Eastbound | | | | Parkway Ave South Westbound | | | | Reed Road Northbound | | | | Parkway Ave Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |



## *REED ROAD & MARPIT DRIVE*

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Reed Road/Marpit Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

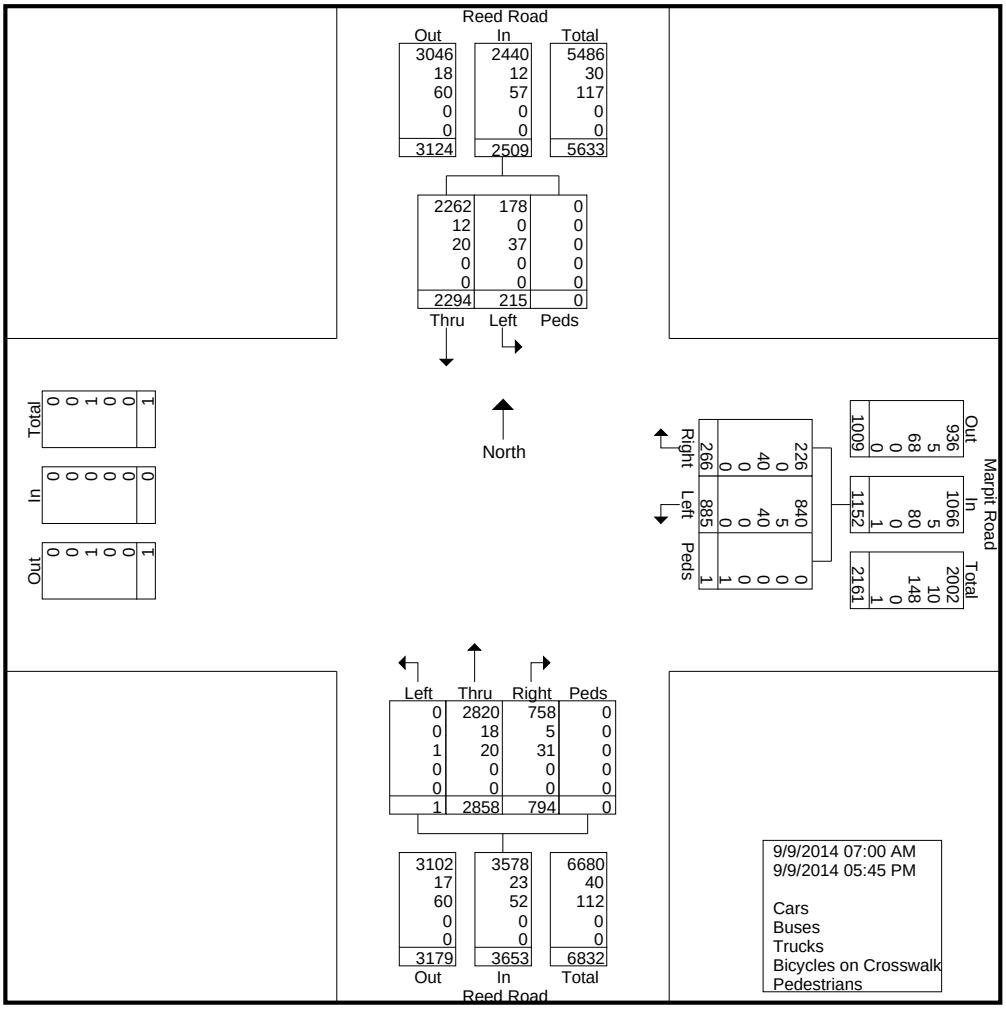
File Name : Del Co 14
Site Code : 14
Start Date : 9/9/2014
Page No : 1

Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Reed Road Southbound | | | | Marpit Road Westbound | | | | Reed Road Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 28 | 9 | 0 | 37 | 10 | 17 | 0 | 27 | 56 | 165 | 0 | 0 | 221 | 285 |
| 07:15 AM | 56 | 9 | 0 | 65 | 3 | 14 | 0 | 17 | 57 | 244 | 0 | 0 | 301 | 383 |
| 07:30 AM | 54 | 8 | 0 | 62 | 6 | 23 | 0 | 29 | 31 | 263 | 0 | 0 | 294 | 385 |
| 07:45 AM | 55 | 12 | 0 | 67 | 11 | 17 | 0 | 28 | 69 | 252 | 0 | 0 | 321 | 416 |
| Total | 193 | 38 | 0 | 231 | 30 | 71 | 0 | 101 | 213 | 924 | 0 | 0 | 1137 | 1469 |
| 08:00 AM | 49 | 13 | 0 | 62 | 8 | 22 | 0 | 30 | 55 | 255 | 0 | 0 | 310 | 402 |
| 08:15 AM | 40 | 18 | 0 | 58 | 11 | 21 | 0 | 32 | 50 | 225 | 0 | 0 | 275 | 365 |
| 08:30 AM | 65 | 11 | 0 | 76 | 8 | 21 | 0 | 29 | 51 | 185 | 0 | 0 | 236 | 341 |
| 08:45 AM | 61 | 8 | 0 | 69 | 6 | 31 | 0 | 37 | 53 | 169 | 1 | 0 | 223 | 329 |
| Total | 215 | 50 | 0 | 265 | 33 | 95 | 0 | 128 | 209 | 834 | 1 | 0 | 1044 | 1437 |
| 03:00 PM | 96 | 16 | 0 | 112 | 20 | 50 | 0 | 70 | 28 | 85 | 0 | 0 | 113 | 295 |
| 03:15 PM | 106 | 17 | 0 | 123 | 16 | 61 | 0 | 77 | 34 | 81 | 0 | 0 | 115 | 315 |
| 03:30 PM | 107 | 7 | 0 | 114 | 15 | 64 | 0 | 79 | 35 | 93 | 0 | 0 | 128 | 321 |
| 03:45 PM | 115 | 8 | 0 | 123 | 12 | 55 | 1 | 68 | 43 | 86 | 0 | 0 | 129 | 320 |
| Total | 424 | 48 | 0 | 472 | 63 | 230 | 1 | 294 | 140 | 345 | 0 | 0 | 485 | 1251 |
| 04:00 PM | 149 | 12 | 0 | 161 | 18 | 56 | 0 | 74 | 26 | 77 | 0 | 0 | 103 | 338 |
| 04:15 PM | 155 | 5 | 0 | 160 | 8 | 45 | 0 | 53 | 30 | 81 | 0 | 0 | 111 | 324 |
| 04:30 PM | 208 | 12 | 0 | 220 | 28 | 87 | 0 | 115 | 28 | 87 | 0 | 0 | 115 | 450 |
| 04:45 PM | 174 | 4 | 0 | 178 | 19 | 48 | 0 | 67 | 29 | 104 | 0 | 0 | 133 | 378 |
| Total | 686 | 33 | 0 | 719 | 73 | 236 | 0 | 309 | 113 | 349 | 0 | 0 | 462 | 1490 |
| 05:00 PM | 194 | 12 | 0 | 206 | 19 | 85 | 0 | 104 | 27 | 98 | 0 | 0 | 125 | 435 |
| 05:15 PM | 199 | 11 | 0 | 210 | 18 | 70 | 0 | 88 | 31 | 120 | 0 | 0 | 151 | 449 |
| 05:30 PM | 215 | 7 | 0 | 222 | 14 | 61 | 0 | 75 | 27 | 93 | 0 | 0 | 120 | 417 |
| 05:45 PM | 168 | 16 | 0 | 184 | 16 | 37 | 0 | 53 | 34 | 95 | 0 | 0 | 129 | 366 |
| Total | 776 | 46 | 0 | 822 | 67 | 253 | 0 | 320 | 119 | 406 | 0 | 0 | 525 | 1667 |
| Grand Total | 2294 | 215 | 0 | 2509 | 266 | 885 | 1 | 1152 | 794 | 2858 | 1 | 0 | 3653 | 7314 |
| Apprch % | 91.4 | 8.6 | 0 | | 23.1 | 76.8 | 0.1 | | 21.7 | 78.2 | 0 | 0 | | |
| Total % | 31.4 | 2.9 | 0 | 34.3 | 3.6 | 12.1 | 0 | 15.8 | 10.9 | 39.1 | 0 | 0 | 49.9 | |
| Cars | 2262 | 178 | 0 | 2440 | 226 | 840 | 0 | 1066 | 758 | 2820 | 0 | 0 | 3578 | 7084 |
| % Cars | 98.6 | 82.8 | 0 | 97.2 | 85 | 94.9 | 0 | 92.5 | 95.5 | 98.7 | 0 | 0 | 97.9 | 96.9 |
| Buses | 12 | 0 | 0 | 12 | 0 | 5 | 0 | 5 | 5 | 18 | 0 | 0 | 23 | 40 |
| % Buses | 0.5 | 0 | 0 | 0.5 | 0 | 0.6 | 0 | 0.4 | 0.6 | 0.6 | 0 | 0 | 0.6 | 0.5 |
| Trucks | 20 | 37 | 0 | 57 | 40 | 40 | 0 | 80 | 31 | 20 | 1 | 0 | 52 | 189 |
| % Trucks | 0.9 | 17.2 | 0 | 2.3 | 15 | 4.5 | 0 | 6.9 | 3.9 | 0.7 | 100 | 0 | 1.4 | 2.6 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

File Name : Del Co 14
Site Code : 14
Start Date : 9/9/2014
Page No : 2

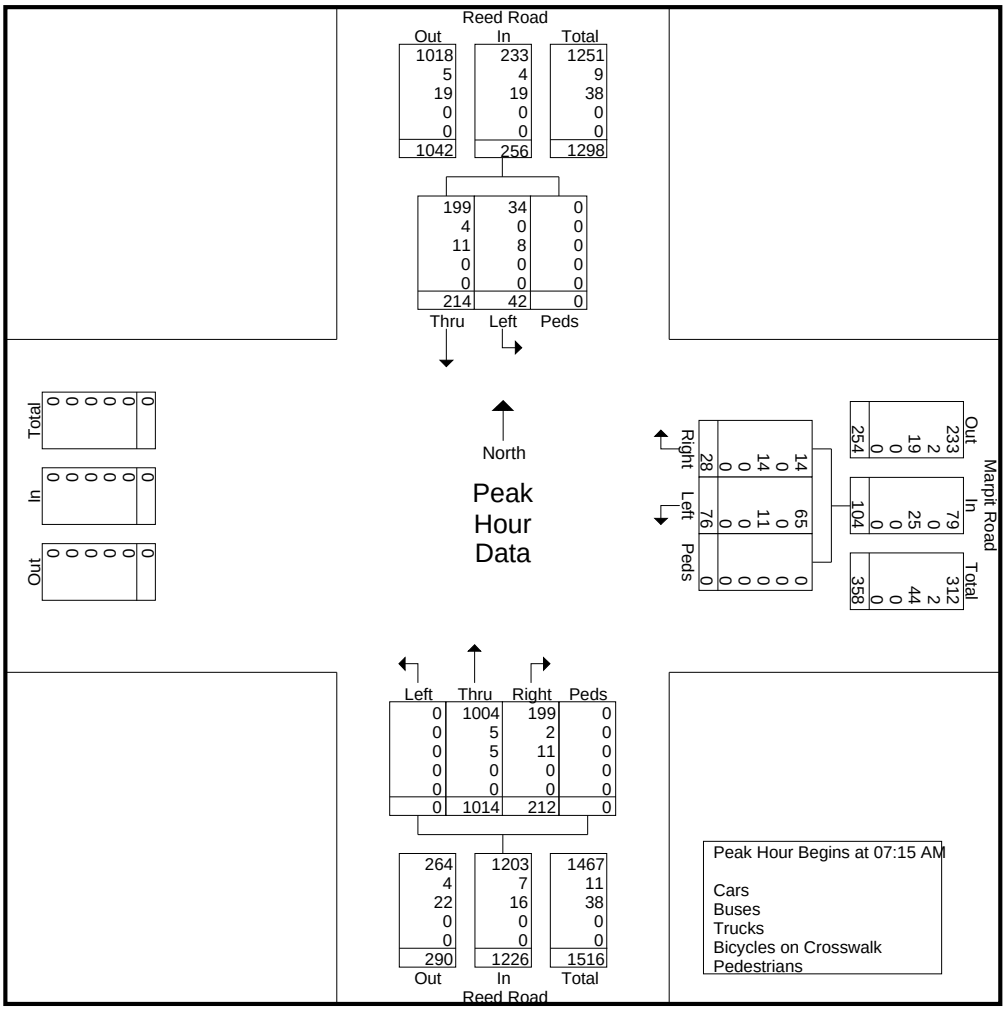


# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

File Name : Del Co 14
Site Code : 14
Start Date : 9/9/2014
Page No : 4

| | Reed Road Southbound | | | | Marpit Road Westbound | | | | Reed Road Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | |
| 07:15 AM | **56** | 9 | 0 | 65 | 3 | 14 | 0 | 17 | 57 | 244 | 0 | 0 | 301 | 383 |
| 07:30 AM | 54 | 8 | 0 | 62 | 6 | **23** | 0 | 29 | 31 | **263** | 0 | 0 | 294 | 385 |
| 07:45 AM | 55 | 12 | 0 | **67** | **11** | 17 | 0 | 28 | **69** | 252 | 0 | 0 | **321** | **416** |
| 08:00 AM | 49 | **13** | 0 | 62 | 8 | 22 | 0 | **30** | 55 | 255 | 0 | 0 | 310 | 402 |
| Total Volume | 214 | 42 | 0 | 256 | 28 | 76 | 0 | 104 | 212 | 1014 | 0 | 0 | 1226 | 1586 |
| % App. Total | 83.6 | 16.4 | 0 | | 26.9 | 73.1 | 0 | | 17.3 | 82.7 | 0 | 0 | | |
| PHF | .955 | .808 | .000 | .955 | .636 | .826 | .000 | .867 | .768 | .964 | .000 | .000 | .955 | .953 |
| Cars | 199 | 34 | 0 | 233 | 14 | 65 | 0 | 79 | 199 | 1004 | 0 | 0 | 1203 | 1515 |
| % Cars | 93.0 | 81.0 | 0 | 91.0 | 50.0 | 85.5 | 0 | 76.0 | 93.9 | 99.0 | 0 | 0 | 98.1 | 95.5 |
| Buses | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 7 | 11 |
| % Buses | 1.9 | 0 | 0 | 1.6 | 0 | 0 | 0 | 0 | 0.9 | 0.5 | 0 | 0 | 0.6 | 0.7 |
| Trucks | 11 | 8 | 0 | 19 | 14 | 11 | 0 | 25 | 11 | 5 | 0 | 0 | 16 | 60 |
| % Trucks | 5.1 | 19.0 | 0 | 7.4 | 50.0 | 14.5 | 0 | 24.0 | 5.2 | 0.5 | 0 | 0 | 1.3 | 3.8 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

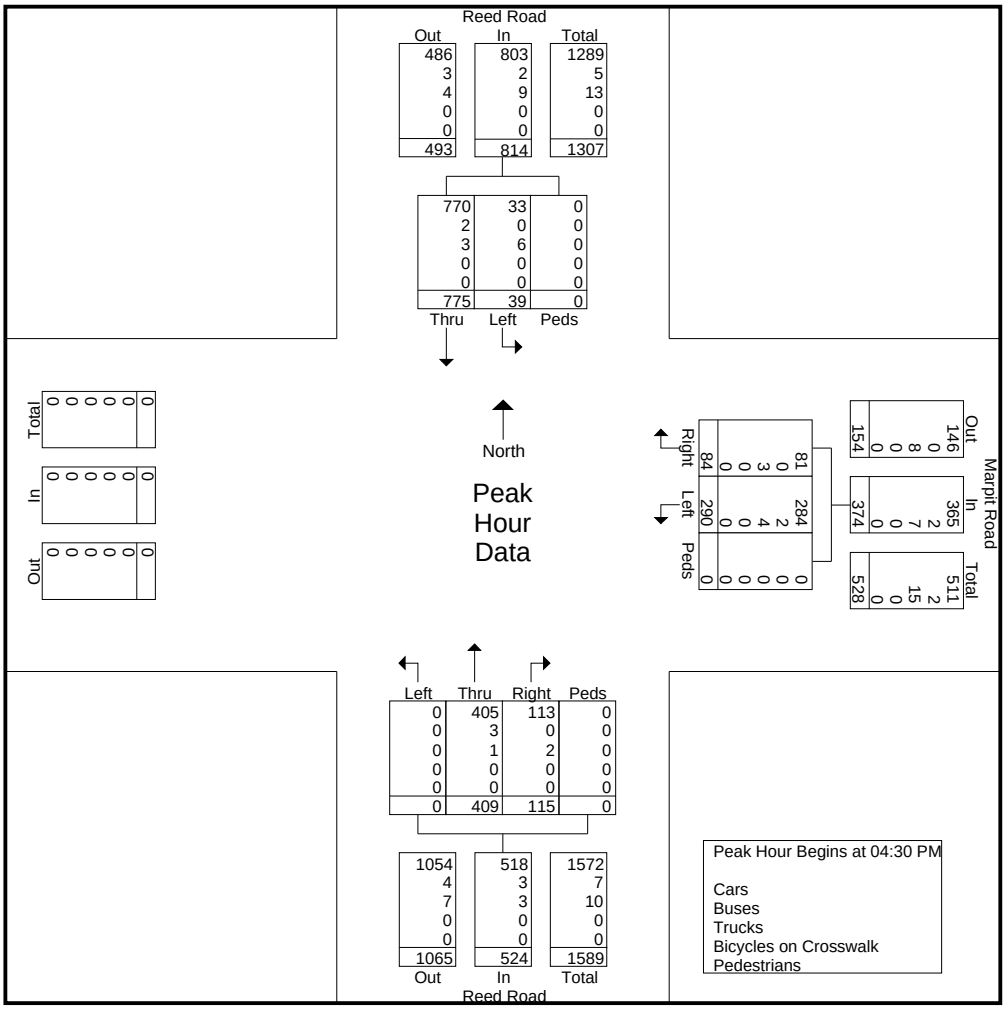


# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

File Name : Del Co 14
Site Code : 14
Start Date : 9/9/2014
Page No : 5

| | Reed Road Southbound | | | | Marpit Road Westbound | | | | Reed Road Northbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | Peds | App. Total | Right | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | |
| 04:30 PM | **208** | **12** | 0 | **220** | **28** | **87** | 0 | **115** | 28 | 87 | 0 | 0 | 115 | **450** |
| 04:45 PM | 174 | 4 | 0 | 178 | 19 | 48 | 0 | 67 | 29 | 104 | 0 | 0 | 133 | 378 |
| 05:00 PM | 194 | 12 | 0 | 206 | 19 | 85 | 0 | 104 | 27 | 98 | 0 | 0 | 125 | 435 |
| 05:15 PM | 199 | 11 | 0 | 210 | 18 | 70 | 0 | 88 | **31** | **120** | 0 | 0 | **151** | 449 |
| Total Volume | 775 | 39 | 0 | 814 | 84 | 290 | 0 | 374 | 115 | 409 | 0 | 0 | 524 | 1712 |
| % App. Total | 95.2 | 4.8 | 0 | | 22.5 | 77.5 | 0 | | 21.9 | 78.1 | 0 | 0 | | |
| PHF | .931 | .813 | .000 | .925 | .750 | .833 | .000 | .813 | .927 | .852 | .000 | .000 | .868 | .951 |
| Cars | 770 | 33 | 0 | 803 | 81 | 284 | 0 | 365 | 113 | 405 | 0 | 0 | 518 | 1686 |
| % Cars | 99.4 | 84.6 | 0 | 98.6 | 96.4 | 97.9 | 0 | 97.6 | 98.3 | 99.0 | 0 | 0 | 98.9 | 98.5 |
| Buses | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 3 | 0 | 0 | 3 | 7 |
| % Buses | 0.3 | 0 | 0 | 0.2 | 0 | 0.7 | 0 | 0.5 | 0 | 0.7 | 0 | 0 | 0.6 | 0.4 |
| Trucks | 3 | 6 | 0 | 9 | 3 | 4 | 0 | 7 | 2 | 1 | 0 | 0 | 3 | 19 |
| % Trucks | 0.4 | 15.4 | 0 | 1.1 | 3.6 | 1.4 | 0 | 1.9 | 1.7 | 0.2 | 0 | 0 | 0.6 | 1.1 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Marpit Drive - SAT
Site Code:
Start Date: 09/13/2014

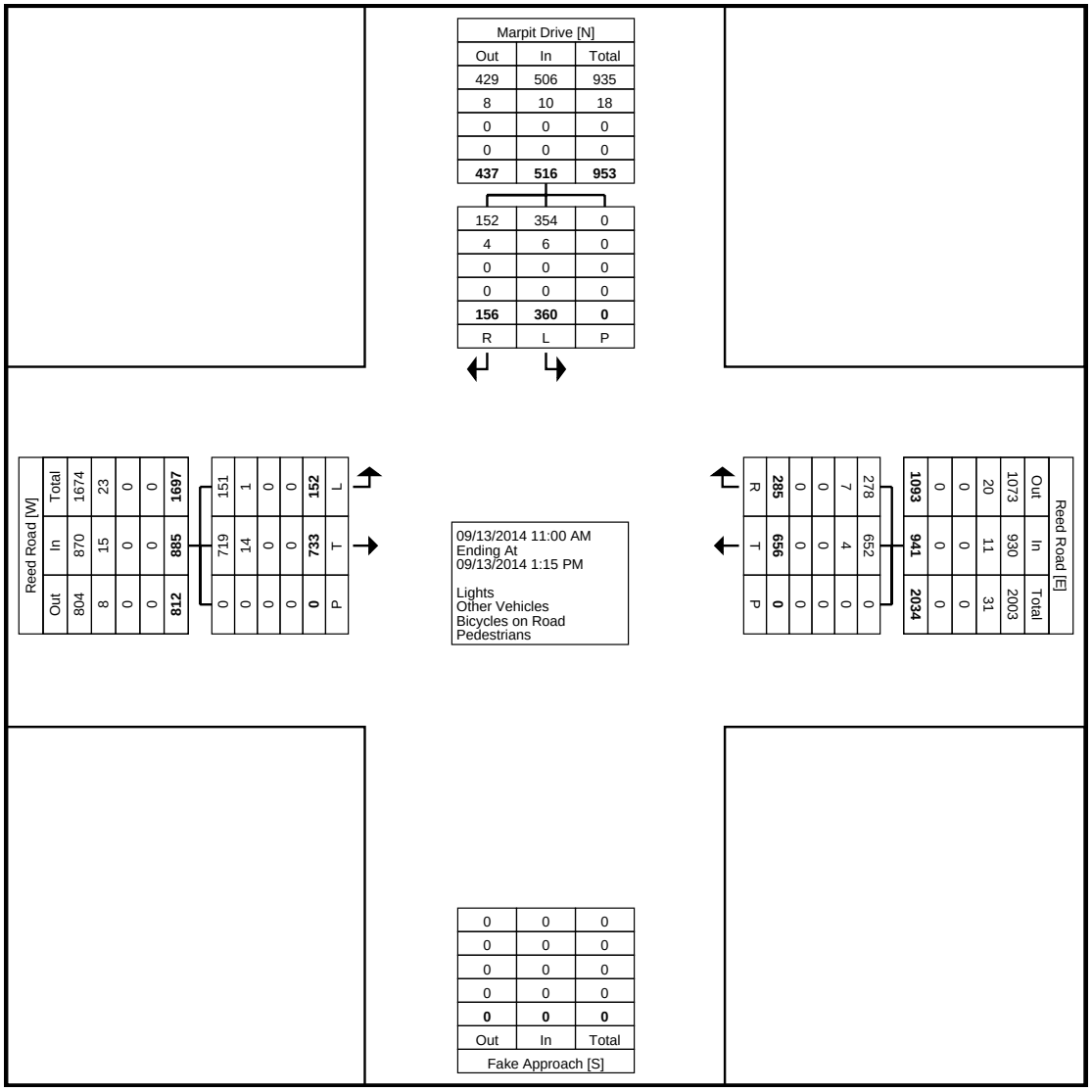

# Turning Movement Data

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Marpit Drive Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 22 | 71 | 0 | 93 | 77 | 43 | 0 | 120 | 42 | 25 | 0 | 67 | 280 |
| 11:15 AM | 19 | 91 | 0 | 110 | 86 | 38 | 0 | 124 | 44 | 29 | 0 | 73 | 307 |
| 11:30 AM | 25 | 72 | 0 | 97 | 71 | 38 | 0 | 109 | 43 | 20 | 0 | 63 | 269 |
| 11:45 AM | 7 | 72 | 0 | 79 | 81 | 31 | 0 | 112 | 36 | 12 | 0 | 48 | 239 |
| Hourly Total | 73 | 306 | 0 | 379 | 315 | 150 | 0 | 465 | 165 | 86 | 0 | 251 | 1095 |
| 12:00 PM | 20 | 117 | 0 | 137 | 67 | 43 | 0 | 110 | 53 | 14 | 0 | 67 | 314 |
| 12:15 PM | 26 | 107 | 0 | 133 | 88 | 45 | 0 | 133 | 50 | 19 | 0 | 69 | 335 |
| 12:30 PM | 16 | 109 | 0 | 125 | 102 | 30 | 0 | 132 | 51 | 15 | 0 | 66 | 323 |
| 12:45 PM | 17 | 94 | 0 | 111 | 84 | 17 | 0 | 101 | 41 | 22 | 0 | 63 | 275 |
| Hourly Total | 79 | 427 | 0 | 506 | 341 | 135 | 0 | 476 | 195 | 70 | 0 | 265 | 1247 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 152 | 733 | 0 | 885 | 656 | 285 | 0 | 941 | 360 | 156 | 0 | 516 | 2342 |
| Approach % | 17.2 | 82.8 | - | - | 69.7 | 30.3 | - | - | 69.8 | 30.2 | - | - | - |
| Total % | 6.5 | 31.3 | - | 37.8 | 28.0 | 12.2 | - | 40.2 | 15.4 | 6.7 | - | 22.0 | - |
| Lights | 151 | 719 | - | 870 | 652 | 278 | - | 930 | 354 | 152 | - | 506 | 2306 |
| % Lights | 99.3 | 98.1 | - | 98.3 | 99.4 | 97.5 | - | 98.8 | 98.3 | 97.4 | - | 98.1 | 98.5 |
| Other Vehicles | 1 | 14 | - | 15 | 4 | 7 | - | 11 | 6 | 4 | - | 10 | 36 |
| % Other Vehicles | 0.7 | 1.9 | - | 1.7 | 0.6 | 2.5 | - | 1.2 | 1.7 | 2.6 | - | 1.9 | 1.5 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Marpit Drive - SAT
Site Code:
Start Date: 09/13/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Marpit Drive - SAT
Site Code:
Start Date: 09/13/2014

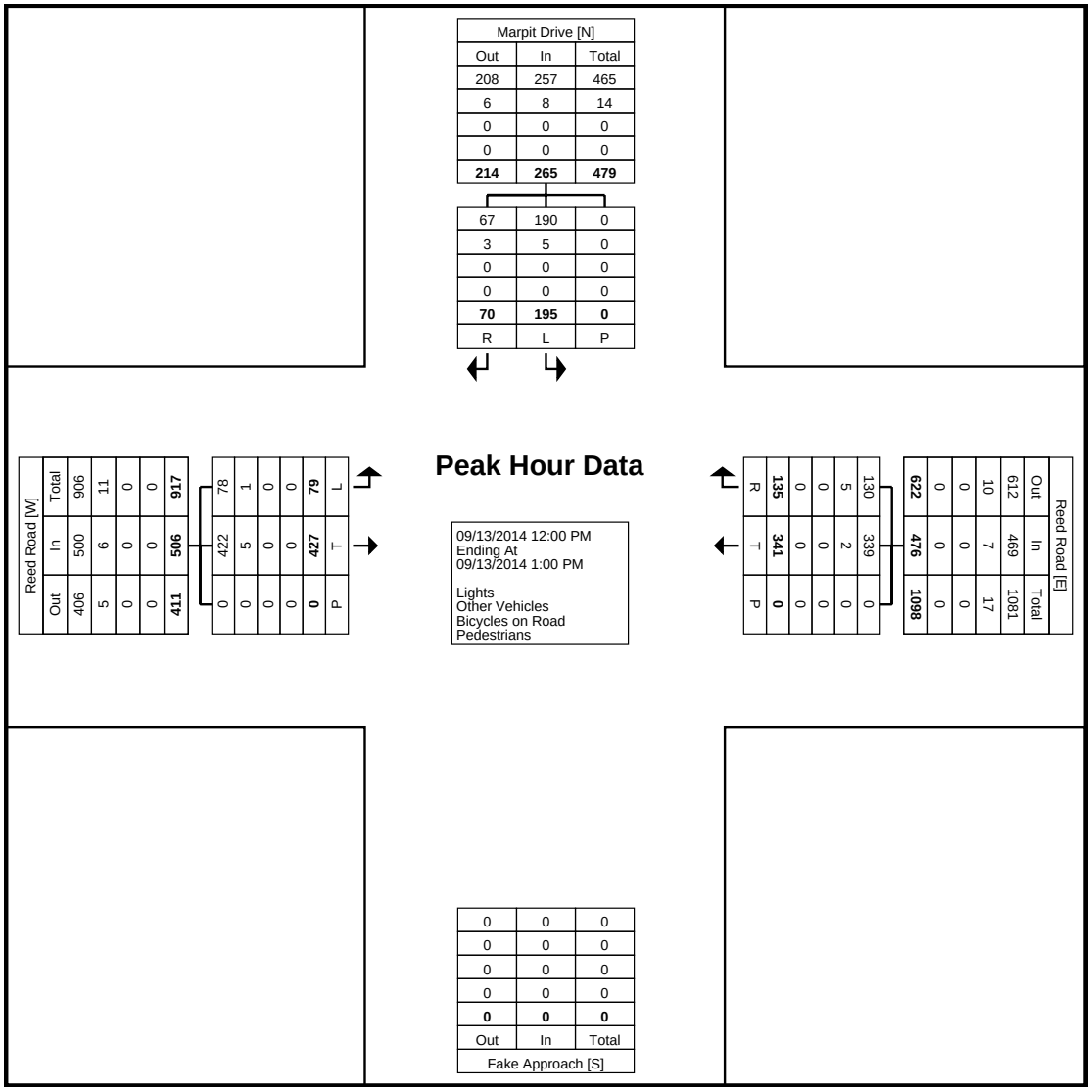

# Turning Movement Peak Hour Data (12:00 PM)

| Start Time | Reed Road Eastbound | | | | Reed Road Westbound | | | | Marpit Drive Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 12:00 PM | 20 | 117 | 0 | 137 | 67 | 43 | 0 | 110 | 53 | 14 | 0 | 67 | 314 |
| 12:15 PM | 26 | 107 | 0 | 133 | 88 | 45 | 0 | 133 | 50 | 19 | 0 | 69 | 335 |
| 12:30 PM | 16 | 109 | 0 | 125 | 102 | 30 | 0 | 132 | 51 | 15 | 0 | 66 | 323 |
| 12:45 PM | 17 | 94 | 0 | 111 | 84 | 17 | 0 | 101 | 41 | 22 | 0 | 63 | 275 |
| Total | 79 | 427 | 0 | 506 | 341 | 135 | 0 | 476 | 195 | 70 | 0 | 265 | 1247 |
| Approach % | 15.6 | 84.4 | - | - | 71.6 | 28.4 | - | - | 73.6 | 26.4 | - | - | - |
| Total % | 6.3 | 34.2 | - | 40.6 | 27.3 | 10.8 | - | 38.2 | 15.6 | 5.6 | - | 21.3 | - |
| PHF | 0.760 | 0.912 | - | 0.923 | 0.836 | 0.750 | - | 0.895 | 0.920 | 0.795 | - | 0.960 | 0.931 |
| Lights | 78 | 422 | - | 500 | 339 | 130 | - | 469 | 190 | 67 | - | 257 | 1226 |
| % Lights | 98.7 | 98.8 | - | 98.8 | 99.4 | 96.3 | - | 98.5 | 97.4 | 95.7 | - | 97.0 | 98.3 |
| Other Vehicles | 1 | 5 | - | 6 | 2 | 5 | - | 7 | 5 | 3 | - | 8 | 21 |
| % Other Vehicles | 1.3 | 1.2 | - | 1.2 | 0.6 | 3.7 | - | 1.5 | 2.6 | 4.3 | - | 3.0 | 1.7 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Reed Road & Marpit Drive - SAT
Site Code:
Start Date: 09/13/2014
Page No: 4




Turning Movement Peak Hour Data Plot (12:00 PM)

***REED ROAD & EAGLE ROAD***

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Reed Road/Eagle Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 15
Site Code : 15
Start Date : 9/9/2014
Page No : 1

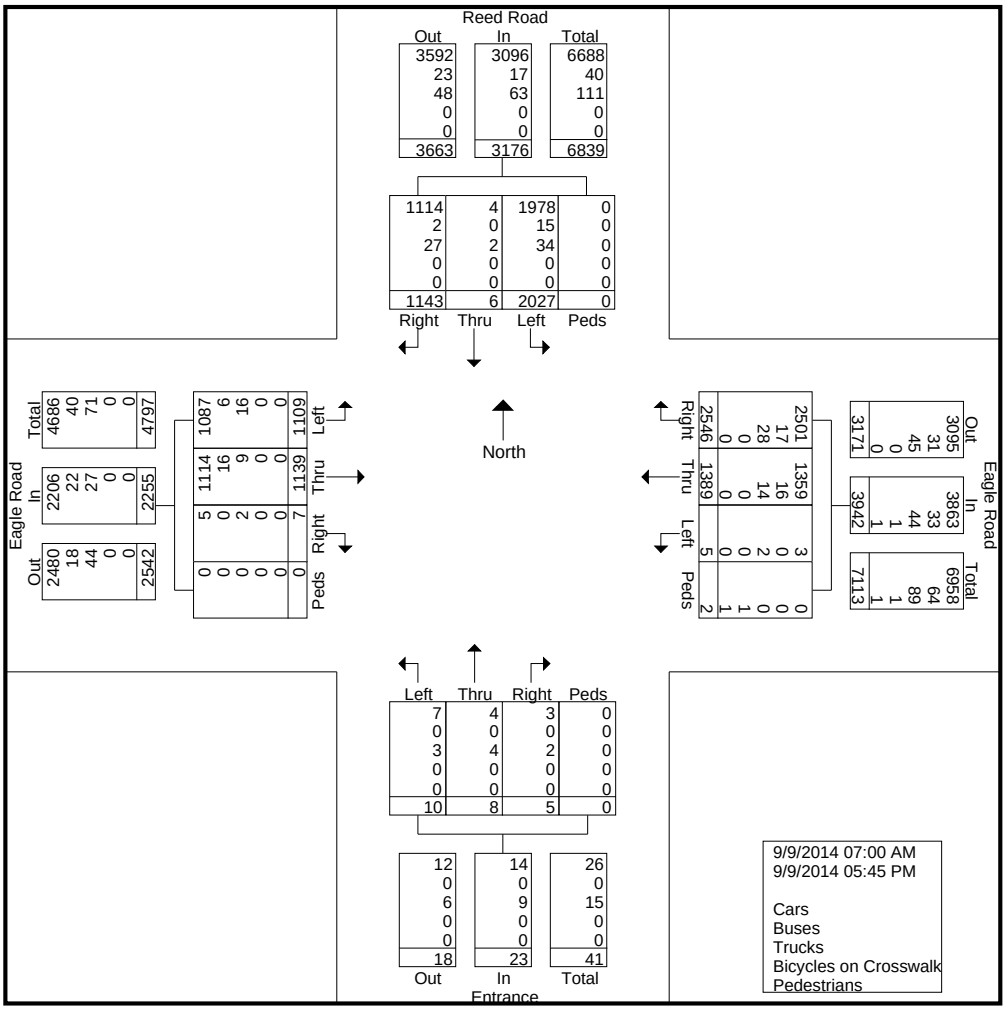
Groups Printed- Cars - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

| | Reed Road Southbound | | | | | Eagle Road Westbound | | | | | Entrance Northbound | | | | | Eagle Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 17 | 0 | 31 | 0 | 48 | 135 | 78 | 0 | 0 | 213 | 1 | 0 | 0 | 0 | 1 | 2 | 26 | 104 | 0 | 132 | 394 |
| 07:15 AM | 12 | 0 | 55 | 0 | 67 | 194 | 92 | 0 | 0 | 286 | 1 | 0 | 1 | 0 | 2 | 0 | 32 | 93 | 0 | 125 | 480 |
| 07:30 AM | 21 | 2 | 52 | 0 | 75 | 200 | 110 | 2 | 0 | 312 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 98 | 0 | 131 | 518 |
| 07:45 AM | 11 | 0 | 59 | 0 | 70 | 224 | 102 | 0 | 0 | 326 | 0 | 3 | 2 | 0 | 5 | 1 | 37 | 111 | 0 | 149 | 550 |
| Total | 61 | 2 | 197 | 0 | 260 | 753 | 382 | 2 | 0 | 1137 | 2 | 3 | 3 | 0 | 8 | 3 | 128 | 406 | 0 | 537 | 1942 |
| 08:00 AM | 18 | 1 | 53 | 0 | 72 | 193 | 93 | 0 | 0 | 286 | 2 | 0 | 2 | 0 | 4 | 1 | 35 | 111 | 0 | 147 | 509 |
| 08:15 AM | 18 | 1 | 43 | 0 | 62 | 180 | 88 | 1 | 0 | 269 | 0 | 2 | 0 | 0 | 2 | 0 | 34 | 86 | 0 | 120 | 453 |
| 08:30 AM | 20 | 0 | 66 | 0 | 86 | 169 | 75 | 0 | 0 | 244 | 0 | 0 | 1 | 0 | 1 | 0 | 30 | 71 | 0 | 101 | 432 |
| 08:45 AM | 32 | 1 | 62 | 0 | 95 | 149 | 60 | 1 | 0 | 210 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 72 | 0 | 111 | 416 |
| Total | 88 | 3 | 224 | 0 | 315 | 691 | 316 | 2 | 0 | 1009 | 2 | 2 | 3 | 0 | 7 | 1 | 138 | 340 | 0 | 479 | 1810 |
| 03:00 PM | 44 | 0 | 99 | 0 | 143 | 75 | 42 | 0 | 0 | 117 | 0 | 2 | 1 | 0 | 3 | 2 | 46 | 39 | 0 | 87 | 350 |
| 03:15 PM | 58 | 0 | 106 | 0 | 164 | 83 | 50 | 0 | 0 | 133 | 0 | 1 | 1 | 0 | 2 | 1 | 67 | 31 | 0 | 99 | 398 |
| 03:30 PM | 69 | 0 | 102 | 0 | 171 | 101 | 58 | 0 | 0 | 159 | 0 | 0 | 1 | 0 | 1 | 0 | 63 | 30 | 0 | 93 | 424 |
| 03:45 PM | 66 | 0 | 115 | 0 | 181 | 100 | 46 | 0 | 0 | 146 | 1 | 0 | 1 | 0 | 2 | 0 | 58 | 23 | 0 | 81 | 410 |
| Total | 237 | 0 | 422 | 0 | 659 | 359 | 196 | 0 | 0 | 555 | 1 | 3 | 4 | 0 | 8 | 3 | 234 | 123 | 0 | 360 | 1582 |
| 04:00 PM | 61 | 0 | 135 | 0 | 196 | 78 | 60 | 0 | 1 | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 21 | 0 | 70 | 405 |
| 04:15 PM | 82 | 0 | 120 | 0 | 202 | 87 | 61 | 0 | 0 | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | 29 | 0 | 110 | 460 |
| 04:30 PM | 122 | 0 | 165 | 0 | 287 | 80 | 51 | 0 | 0 | 131 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 30 | 0 | 102 | 520 |
| 04:45 PM | 81 | 0 | 151 | 0 | 232 | 103 | 54 | 0 | 0 | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 29 | 0 | 105 | 494 |
| Total | 346 | 0 | 571 | 0 | 917 | 348 | 226 | 0 | 1 | 575 | 0 | 0 | 0 | 0 | 0 | 0 | 278 | 109 | 0 | 387 | 1879 |
| 05:00 PM | 96 | 0 | 160 | 0 | 256 | 93 | 63 | 1 | 1 | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 31 | 0 | 122 | 536 |
| 05:15 PM | 115 | 1 | 151 | 0 | 267 | 111 | 52 | 0 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 37 | 0 | 128 | 558 |
| 05:30 PM | 121 | 0 | 157 | 0 | 278 | 88 | 86 | 0 | 0 | 174 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 32 | 0 | 116 | 568 |
| 05:45 PM | 79 | 0 | 145 | 0 | 224 | 103 | 68 | 0 | 0 | 171 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 31 | 0 | 126 | 521 |
| Total | 411 | 1 | 613 | 0 | 1025 | 395 | 269 | 1 | 1 | 666 | 0 | 0 | 0 | 0 | 0 | 0 | 361 | 131 | 0 | 492 | 2183 |
| Grand Total | 1143 | 6 | 2027 | 0 | 3176 | 2546 | 1389 | 5 | 2 | 3942 | 5 | 8 | 10 | 0 | 23 | 7 | 1139 | 1109 | 0 | 2255 | 9396 |
| Apprch % | 36 | 0.2 | 63.8 | 0 | | 64.6 | 35.2 | 0.1 | 0.1 | | 21.7 | 34.8 | 43.5 | 0 | | 0.3 | 50.5 | 49.2 | 0 | | |
| Total % | 12.2 | 0.1 | 21.6 | 0 | 33.8 | 27.1 | 14.8 | 0.1 | 0 | 42 | 0.1 | 0.1 | 0.1 | 0 | 0.2 | 0.1 | 12.1 | 11.8 | 0 | 24 | |
| Cars | 1114 | 4 | 1978 | 0 | 3096 | 2501 | 1359 | 3 | 0 | 3863 | 3 | 4 | 7 | 0 | 14 | 5 | 1114 | 1087 | 0 | 2206 | 9179 |
| % Cars | 97.5 | 66.7 | 97.6 | 0 | 97.5 | 98.2 | 97.8 | 60 | 0 | 98 | 60 | 50 | 70 | 0 | 60.9 | 71.4 | 97.8 | 98 | 0 | 97.8 | 97.7 |
| Buses | 2 | 0 | 15 | 0 | 17 | 17 | 16 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 6 | 0 | 22 | 72 |
| % Buses | 0.2 | 0 | 0.7 | 0 | 0.5 | 0.7 | 1.2 | 0 | 0 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0.5 | 0 | 1 | 0.8 |
| Trucks | 27 | 2 | 34 | 0 | 63 | 28 | 14 | 2 | 0 | 44 | 2 | 4 | 3 | 0 | 9 | 2 | 9 | 16 | 0 | 27 | 143 |
| % Trucks | 2.4 | 33.3 | 1.7 | 0 | 2 | 1.1 | 1 | 40 | 0 | 1.1 | 40 | 50 | 30 | 0 | 39.1 | 28.6 | 0.8 | 1.4 | 0 | 1.2 | 1.5 |
| Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tri-State Traffic Data, Inc.**
610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Reed Road/Eagle Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 15
Site Code : 15
Start Date : 9/9/2014
Page No : 2



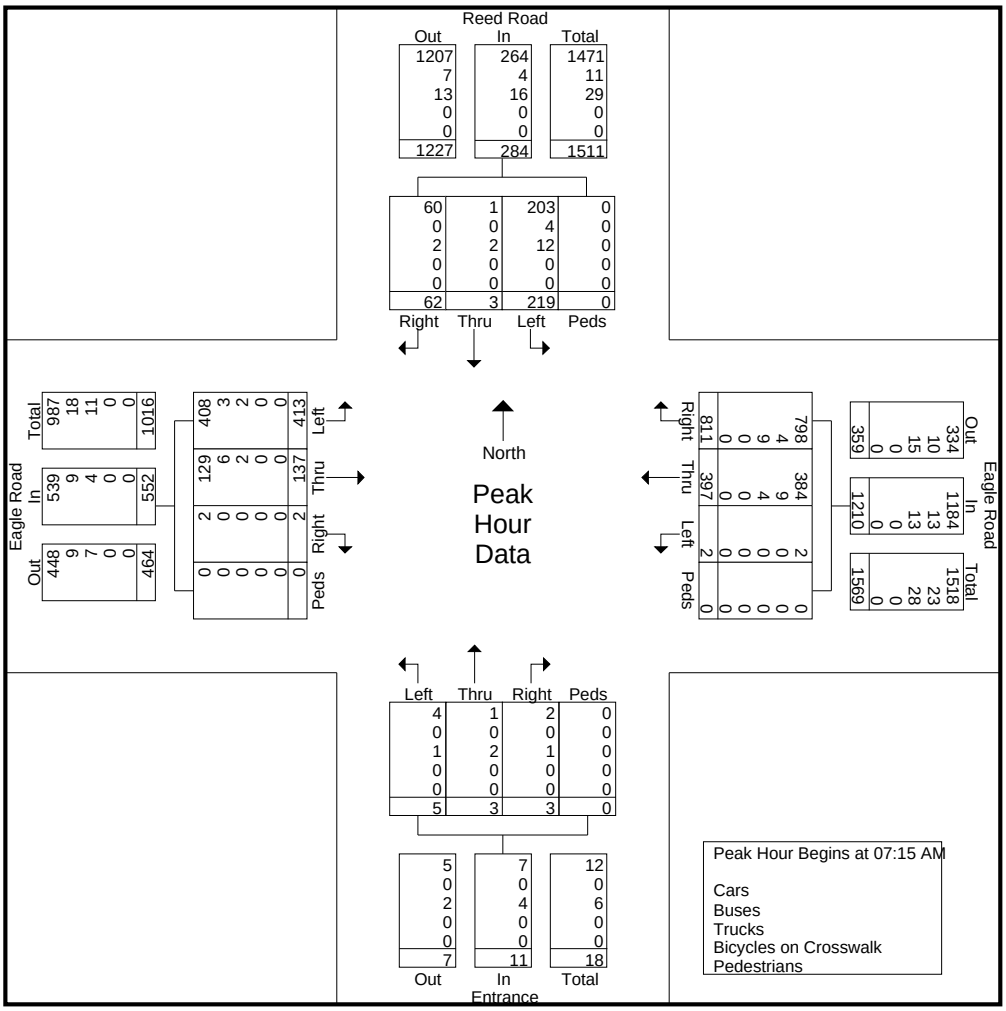
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Reed Road/Eagle Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 15
Site Code : 15
Start Date : 9/9/2014
Page No : 4

| | Reed Road Southbound | | | | | Eagle Road Westbound | | | | | Entrance Northbound | | | | | Eagle Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 12 | 0 | 55 | 0 | 67 | 194 | 92 | 0 | 0 | 286 | 1 | 0 | 1 | 0 | 2 | 0 | 32 | 93 | 0 | 125 | 480 |
| 07:30 AM | **21** | **2** | 52 | 0 | **75** | 200 | **110** | **2** | 0 | 312 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 98 | 0 | 131 | 518 |
| 07:45 AM | 11 | 0 | **59** | 0 | 70 | **224** | 102 | 0 | 0 | **326** | 0 | **3** | **2** | 0 | **5** | **1** | **37** | **111** | 0 | **149** | **550** |
| 08:00 AM | 18 | 1 | 53 | 0 | 72 | 193 | 93 | 0 | 0 | 286 | **2** | 0 | 2 | 0 | 4 | 1 | 35 | 111 | 0 | 147 | 509 |
| Total Volume | 62 | 3 | 219 | 0 | 284 | 811 | 397 | 2 | 0 | 1210 | 3 | 3 | 5 | 0 | 11 | 2 | 137 | 413 | 0 | 552 | 2057 |
| % App. Total | 21.8 | 1.1 | 77.1 | 0 | | 67 | 32.8 | 0.2 | 0 | | 27.3 | 27.3 | 45.5 | 0 | | 0.4 | 24.8 | 74.8 | 0 | | |
| PHF | .738 | .375 | .928 | .000 | .947 | .905 | .902 | .250 | .000 | .928 | .375 | .250 | .625 | .000 | .550 | .500 | .926 | .930 | .000 | .926 | .935 |
| Cars | 60 | 1 | 203 | 0 | 264 | 798 | 384 | 2 | 0 | 1184 | 2 | 1 | 4 | 0 | 7 | 2 | 129 | 408 | 0 | 539 | 1994 |
| % Cars | 96.8 | 33.3 | 92.7 | 0 | 93.0 | 98.4 | 96.7 | 100 | 0 | 97.9 | 66.7 | 33.3 | 80.0 | 0 | 63.6 | 100 | 94.2 | 98.8 | 0 | 97.6 | 96.9 |
| Buses | 0 | 0 | 4 | 0 | 4 | 4 | 9 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 0 | 9 | 26 |
| % Buses | 0 | 0 | 1.8 | 0 | 1.4 | 0.5 | 2.3 | 0 | 0 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0 | 4.4 | 0.7 | 0 | 1.6 | 1.3 |
| Trucks | 2 | 2 | 12 | 0 | 16 | 9 | 4 | 0 | 0 | 13 | 1 | 2 | 1 | 0 | 4 | 0 | 2 | 2 | 0 | 4 | 37 |
| % Trucks | 3.2 | 66.7 | 5.5 | 0 | 5.6 | 1.1 | 1.0 | 0 | 0 | 1.1 | 33.3 | 66.7 | 20.0 | 0 | 36.4 | 0 | 1.5 | 0.5 | 0 | 0.7 | 1.8 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



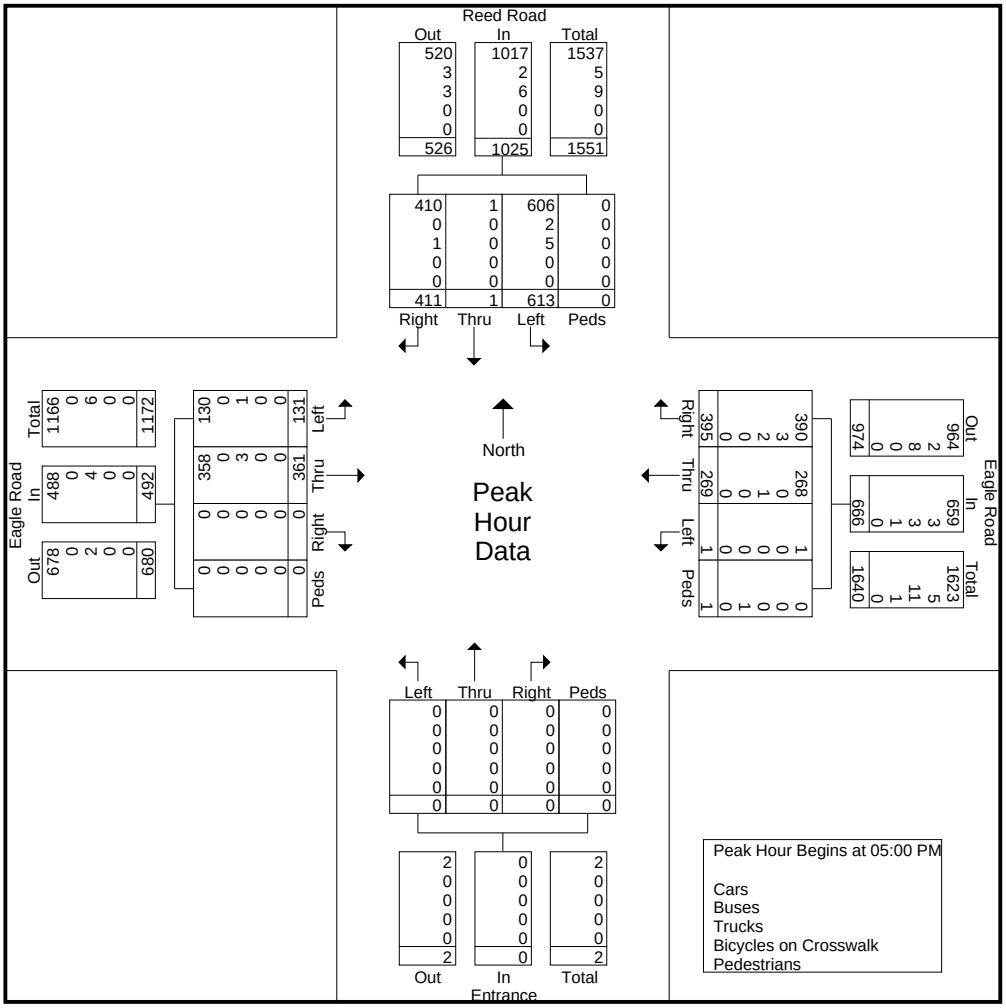
# Tri-State Traffic Data, Inc.

610 466-1469
TSTData.com

Location: Delaware County, PA
Intersection: Reed Road/Eagle Road
Date: Tuesday, September 9, 2014
Counter: MIO PB

File Name : Del Co 15
Site Code : 15
Start Date : 9/9/2014
Page No : 5

| | Reed Road Southbound | | | | | Eagle Road Westbound | | | | | Entrance Northbound | | | | | Eagle Road Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 96 | 0 | **160** | 0 | 256 | 93 | 63 | **1** | **1** | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 31 | 0 | 122 | 536 |
| 05:15 PM | 115 | **1** | 151 | 0 | 267 | **111** | 52 | 0 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | **37** | 0 | **128** | 558 |
| 05:30 PM | **121** | 0 | 157 | 0 | **278** | 88 | **86** | 0 | 0 | **174** | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 32 | 0 | 116 | **568** |
| 05:45 PM | 79 | 0 | 145 | 0 | 224 | 103 | 68 | 0 | 0 | 171 | 0 | 0 | 0 | 0 | 0 | 0 | **95** | 31 | 0 | 126 | 521 |
| Total Volume | 411 | 1 | 613 | 0 | 1025 | 395 | 269 | 1 | 1 | 666 | 0 | 0 | 0 | 0 | 0 | 0 | 361 | 131 | 0 | 492 | 2183 |
| % App. Total | 40.1 | 0.1 | 59.8 | 0 | | 59.3 | 40.4 | 0.2 | 0.2 | | 0 | 0 | 0 | 0 | | 0 | 73.4 | 26.6 | 0 | | |
| PHF | .849 | .250 | .958 | .000 | .922 | .890 | .782 | .250 | .250 | .957 | .000 | .000 | .000 | .000 | .000 | .000 | .950 | .885 | .000 | .961 | .961 |
| Cars | 410 | 1 | 606 | 0 | 1017 | 390 | 268 | 1 | 0 | 659 | 0 | 0 | 0 | 0 | 0 | 0 | 358 | 130 | 0 | 488 | 2164 |
| % Cars | 99.8 | 100 | 98.9 | 0 | 99.2 | 98.7 | 99.6 | 100 | 0 | 98.9 | 0 | 0 | 0 | 0 | 0 | 0 | 99.2 | 99.2 | 0 | 99.2 | 99.1 |
| Buses | 0 | 0 | 2 | 0 | 2 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| % Buses | 0 | 0 | 0.3 | 0 | 0.2 | 0.8 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| Trucks | 1 | 0 | 5 | 0 | 6 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 13 |
| % Trucks | 0.2 | 0 | 0.8 | 0 | 0.6 | 0.5 | 0.4 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0.8 | 0 | 0.8 | 0.6 |
| Bicycles on Crosswalk | | | | | | | | | | | | | | | | | | | | | |
| % Bicycles on Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & Reed Road - SAT
Site Code:
Start Date: 09/13/2014

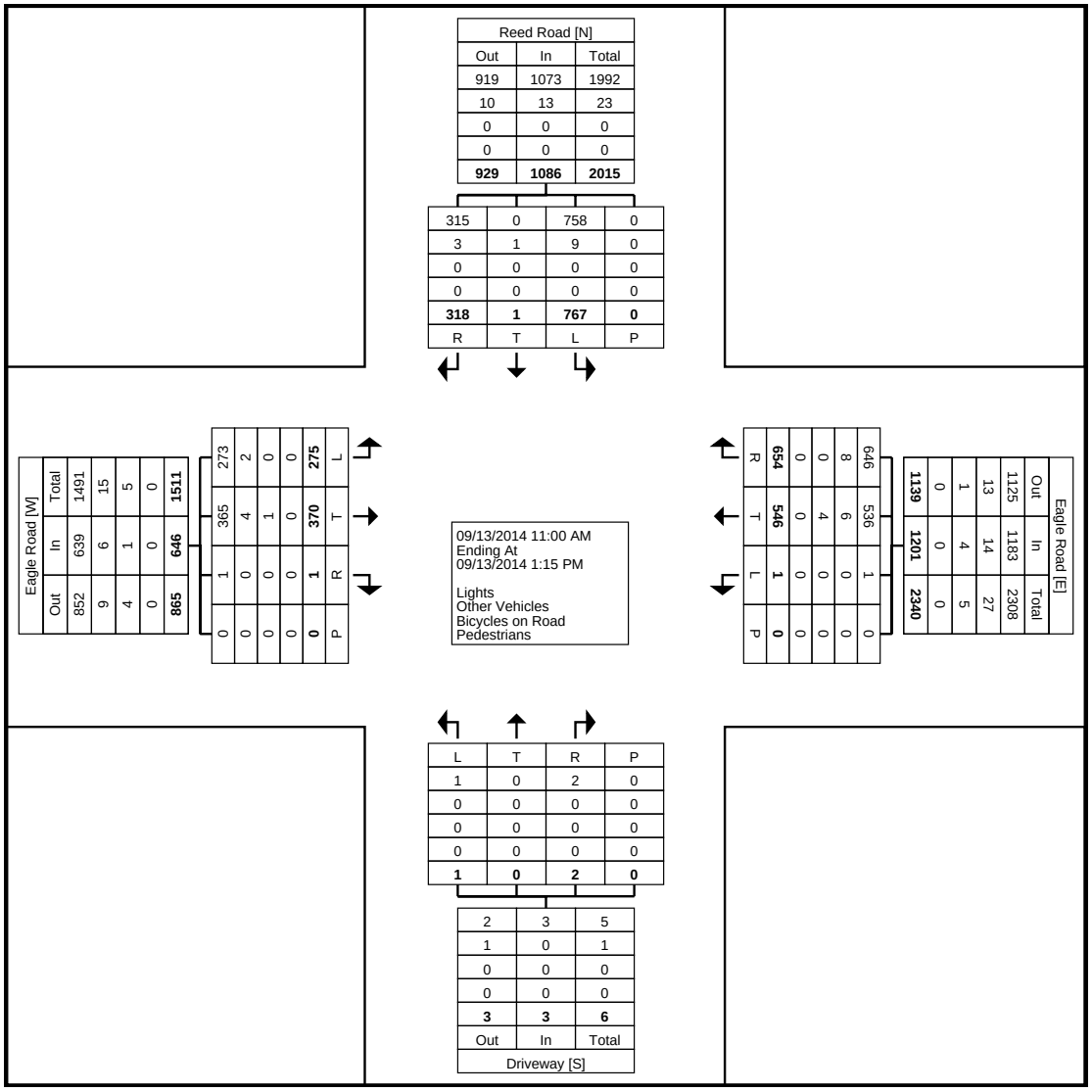

# Turning Movement Data

| Start Time | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Driveway Northbound | | | | | Reed Road Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 AM | 36 | 49 | 0 | 0 | 85 | 0 | 70 | 84 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 82 | 1 | 32 | 0 | 115 | 354 |
| 11:15 AM | 29 | 45 | 1 | 0 | 75 | 0 | 83 | 84 | 0 | 167 | 0 | 0 | 0 | 0 | 0 | 89 | 0 | 46 | 0 | 135 | 377 |
| 11:30 AM | 37 | 36 | 0 | 0 | 73 | 1 | 53 | 70 | 0 | 124 | 0 | 0 | 1 | 0 | 1 | 74 | 0 | 34 | 0 | 108 | 306 |
| 11:45 AM | 30 | 42 | 0 | 0 | 72 | 0 | 59 | 78 | 0 | 137 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 35 | 0 | 107 | 316 |
| Hourly Total | 132 | 172 | 1 | 0 | 305 | 1 | 265 | 316 | 0 | 582 | 0 | 0 | 1 | 0 | 1 | 317 | 1 | 147 | 0 | 465 | 1353 |
| 12:00 PM | 31 | 35 | 0 | 0 | 66 | 0 | 69 | 84 | 0 | 153 | 1 | 0 | 0 | 0 | 1 | 118 | 0 | 46 | 0 | 164 | 384 |
| 12:15 PM | 36 | 53 | 0 | 0 | 89 | 0 | 80 | 94 | 0 | 174 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 43 | 0 | 156 | 419 |
| 12:30 PM | 40 | 56 | 0 | 0 | 96 | 0 | 75 | 90 | 0 | 165 | 0 | 0 | 1 | 0 | 1 | 120 | 0 | 44 | 0 | 164 | 426 |
| 12:45 PM | 36 | 54 | 0 | 0 | 90 | 0 | 57 | 69 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 99 | 0 | 38 | 0 | 137 | 353 |
| Hourly Total | 143 | 198 | 0 | 0 | 341 | 0 | 281 | 337 | 0 | 618 | 1 | 0 | 1 | 0 | 2 | 450 | 0 | 171 | 0 | 621 | 1582 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 275 | 370 | 1 | 0 | 646 | 1 | 546 | 654 | 0 | 1201 | 1 | 0 | 2 | 0 | 3 | 767 | 1 | 318 | 0 | 1086 | 2936 |
| Approach % | 42.6 | 57.3 | 0.2 | - | - | 0.1 | 45.5 | 54.5 | - | - | 33.3 | 0.0 | 66.7 | - | - | 70.6 | 0.1 | 29.3 | - | - | - |
| Total % | 9.4 | 12.6 | 0.0 | - | 22.0 | 0.0 | 18.6 | 22.3 | - | 40.9 | 0.0 | 0.0 | 0.1 | - | 0.1 | 26.1 | 0.0 | 10.8 | - | 37.0 | - |
| Lights | 273 | 365 | 1 | - | 639 | 1 | 536 | 646 | - | 1183 | 1 | 0 | 2 | - | 3 | 758 | 0 | 315 | - | 1073 | 2898 |
| % Lights | 99.3 | 98.6 | 100.0 | - | 98.9 | 100.0 | 98.2 | 98.8 | - | 98.5 | 100.0 | - | 100.0 | - | 100.0 | 98.8 | 0.0 | 99.1 | - | 98.8 | 98.7 |
| Other Vehicles | 2 | 4 | 0 | - | 6 | 0 | 6 | 8 | - | 14 | 0 | 0 | 0 | - | 0 | 9 | 1 | 3 | - | 13 | 33 |
| % Other Vehicles | 0.7 | 1.1 | 0.0 | - | 0.9 | 0.0 | 1.1 | 1.2 | - | 1.2 | 0.0 | - | 0.0 | - | 0.0 | 1.2 | 100.0 | 0.9 | - | 1.2 | 1.1 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 4 | 0 | - | 4 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 5 |
| % Bicycles on Road | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 | 0.7 | 0.0 | - | 0.3 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.2 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & Reed Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & Reed Road - SAT
Site Code:
Start Date: 09/13/2014

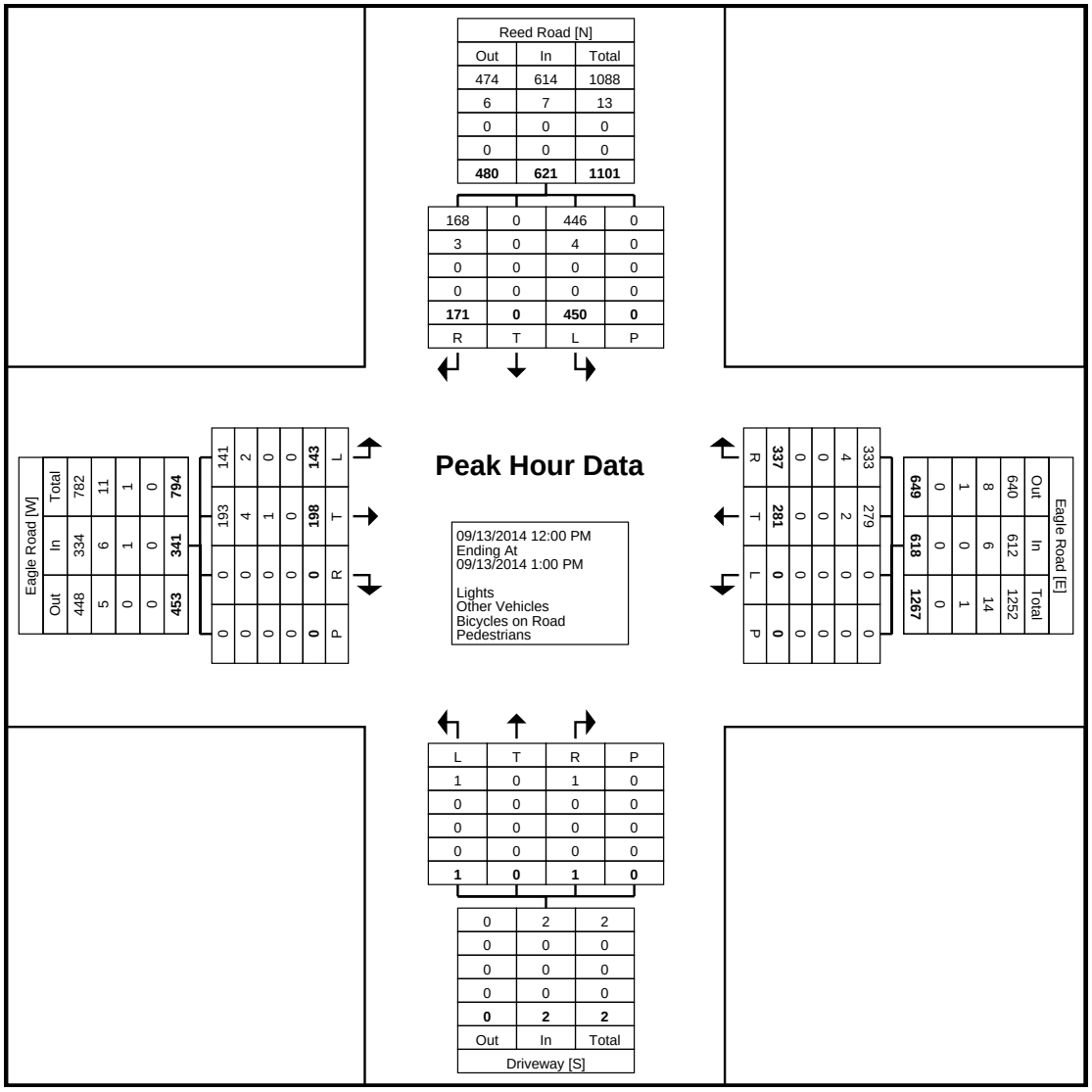

# Turning Movement Peak Hour Data (12:00 PM)

| Start Time | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Driveway Northbound | | | | | Reed Road Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 12:00 PM | 31 | 35 | 0 | 0 | 66 | 0 | 69 | 84 | 0 | 153 | 1 | 0 | 0 | 0 | 1 | 118 | 0 | 46 | 0 | 164 | 384 |
| 12:15 PM | 36 | 53 | 0 | 0 | 89 | 0 | 80 | 94 | 0 | 174 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 43 | 0 | 156 | 419 |
| 12:30 PM | 40 | 56 | 0 | 0 | 96 | 0 | 75 | 90 | 0 | 165 | 0 | 0 | 1 | 0 | 1 | 120 | 0 | 44 | 0 | 164 | 426 |
| 12:45 PM | 36 | 54 | 0 | 0 | 90 | 0 | 57 | 69 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 99 | 0 | 38 | 0 | 137 | 353 |
| Total | 143 | 198 | 0 | 0 | 341 | 0 | 281 | 337 | 0 | 618 | 1 | 0 | 1 | 0 | 2 | 450 | 0 | 171 | 0 | 621 | 1582 |
| Approach % | 41.9 | 58.1 | 0.0 | - | - | 0.0 | 45.5 | 54.5 | - | - | 50.0 | 0.0 | 50.0 | - | - | 72.5 | 0.0 | 27.5 | - | - | - |
| Total % | 9.0 | 12.5 | 0.0 | - | 21.6 | 0.0 | 17.8 | 21.3 | - | 39.1 | 0.1 | 0.0 | 0.1 | - | 0.1 | 28.4 | 0.0 | 10.8 | - | 39.3 | - |
| PHF | 0.894 | 0.884 | 0.000 | - | 0.888 | 0.000 | 0.878 | 0.896 | - | 0.888 | 0.250 | 0.000 | 0.250 | - | 0.500 | 0.938 | 0.000 | 0.929 | - | 0.947 | 0.928 |
| Lights | 141 | 193 | 0 | - | 334 | 0 | 279 | 333 | - | 612 | 1 | 0 | 1 | - | 2 | 446 | 0 | 168 | - | 614 | 1562 |
| % Lights | 98.6 | 97.5 | - | - | 97.9 | - | 99.3 | 98.8 | - | 99.0 | 100.0 | - | 100.0 | - | 100.0 | 99.1 | - | 98.2 | - | 98.9 | 98.7 |
| Other Vehicles | 2 | 4 | 0 | - | 6 | 0 | 2 | 4 | - | 6 | 0 | 0 | 0 | - | 0 | 4 | 0 | 3 | - | 7 | 19 |
| % Other Vehicles | 1.4 | 2.0 | - | - | 1.8 | - | 0.7 | 1.2 | - | 1.0 | 0.0 | - | 0.0 | - | 0.0 | 0.9 | - | 1.8 | - | 1.1 | 1.2 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.5 | - | - | 0.3 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.1 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: JM/JW
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & Reed Road - SAT
Site Code:
Start Date: 09/13/2014
Page No: 4




Turning Movement Peak Hour Data Plot (12:00 PM)

# *EAGLE ROAD & HS DRIVEWAY*

Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

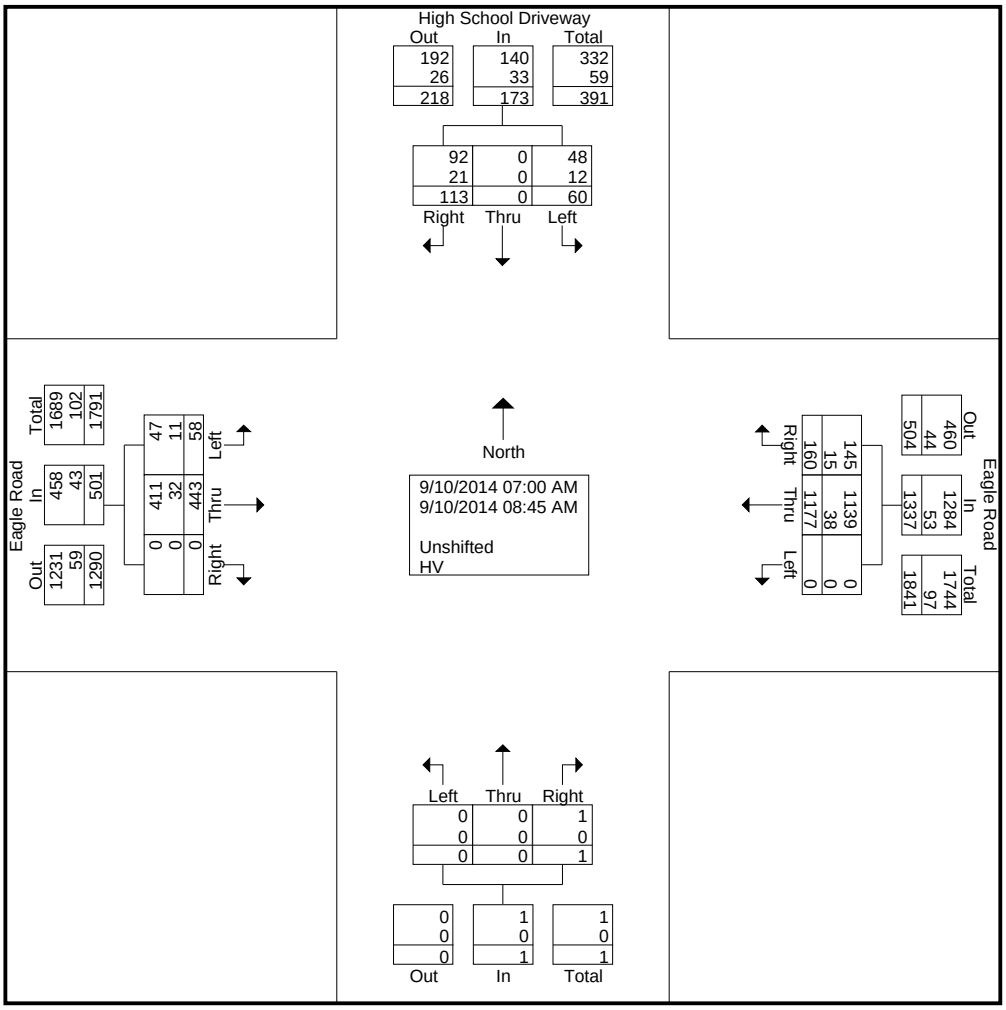
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 14
Counted by: MRolli
Weather: Clear

File Name : 2014-09-10 AM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 6 | 48 | 0 | 0 | 54 | 0 | 111 | 12 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 0 | 10 | 0 | 187 | 187 |
| 07:15 AM | 21 | 34 | 0 | 0 | 55 | 0 | 169 | 37 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 22 | 1 | 35 | 1 | 296 | 297 |
| 07:30 AM | 26 | 51 | 0 | 0 | 77 | 0 | 172 | 81 | 0 | 253 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 52 | 0 | 81 | 0 | 411 | 411 |
| 07:45 AM | 4 | 61 | 0 | 0 | 65 | 0 | 181 | 13 | 0 | 194 | 0 | 0 | 1 | 0 | 1 | 10 | 0 | 17 | 0 | 27 | 0 | 287 | 287 |
| Total | 57 | 194 | 0 | 0 | 251 | 0 | 633 | 143 | 0 | 776 | 0 | 0 | 1 | 0 | 1 | 54 | 0 | 99 | 1 | 153 | 1 | 1181 | 1182 |
| 08:00 AM | 1 | 57 | 0 | 0 | 58 | 0 | 156 | 3 | 0 | 159 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 222 | 222 |
| 08:15 AM | 0 | 53 | 0 | 0 | 53 | 0 | 161 | 0 | 0 | 161 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 7 | 0 | 10 | 0 | 224 | 224 |
| 08:30 AM | 0 | 52 | 0 | 0 | 52 | 0 | 122 | 6 | 0 | 128 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 181 | 181 |
| 08:45 AM | 0 | 87 | 0 | 0 | 87 | 0 | 105 | 8 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 204 | 204 |
| Total | 1 | 249 | 0 | 0 | 250 | 0 | 544 | 17 | 0 | 561 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 14 | 0 | 20 | 0 | 831 | 831 |
| Grand Total | 58 | 443 | 0 | 0 | 501 | 0 | 1177 | 160 | 0 | 1337 | 0 | 0 | 1 | 0 | 1 | 60 | 0 | 113 | 1 | 173 | 1 | 2012 | 2013 |
| Apprch % | 11.6 | 88.4 | 0 | | | 0 | 88 | 12 | | | 0 | 0 | 100 | | | 34.7 | 0 | 65.3 | | | | | |
| Total % | 2.9 | 22 | 0 | | 24.9 | 0 | 58.5 | 8 | | 66.5 | 0 | 0 | 0 | | 0 | 3 | 0 | 5.6 | | 8.6 | 0 | 100 | |
| Unshifted | 47 | 411 | 0 | | 458 | 0 | 1139 | 145 | | 1284 | 0 | 0 | 1 | | 1 | 48 | 0 | 92 | | 140 | 0 | 0 | 1883 |
| % Unshifted | 81 | 92.8 | 0 | 0 | 91.4 | 0 | 96.8 | 90.6 | 0 | 96 | 0 | 0 | 100 | 0 | 100 | 80 | 0 | 81.4 | 0 | 80.5 | 0 | 0 | 93.5 |
| HV | 11 | 32 | 0 | | 43 | 0 | 38 | 15 | | 53 | 0 | 0 | 0 | | 0 | 12 | 0 | 21 | | 34 | 0 | 0 | 130 |
| % HV | 19 | 7.2 | 0 | 0 | 8.6 | 0 | 3.2 | 9.4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 18.6 | 100 | 19.5 | 0 | 0 | 6.5 |

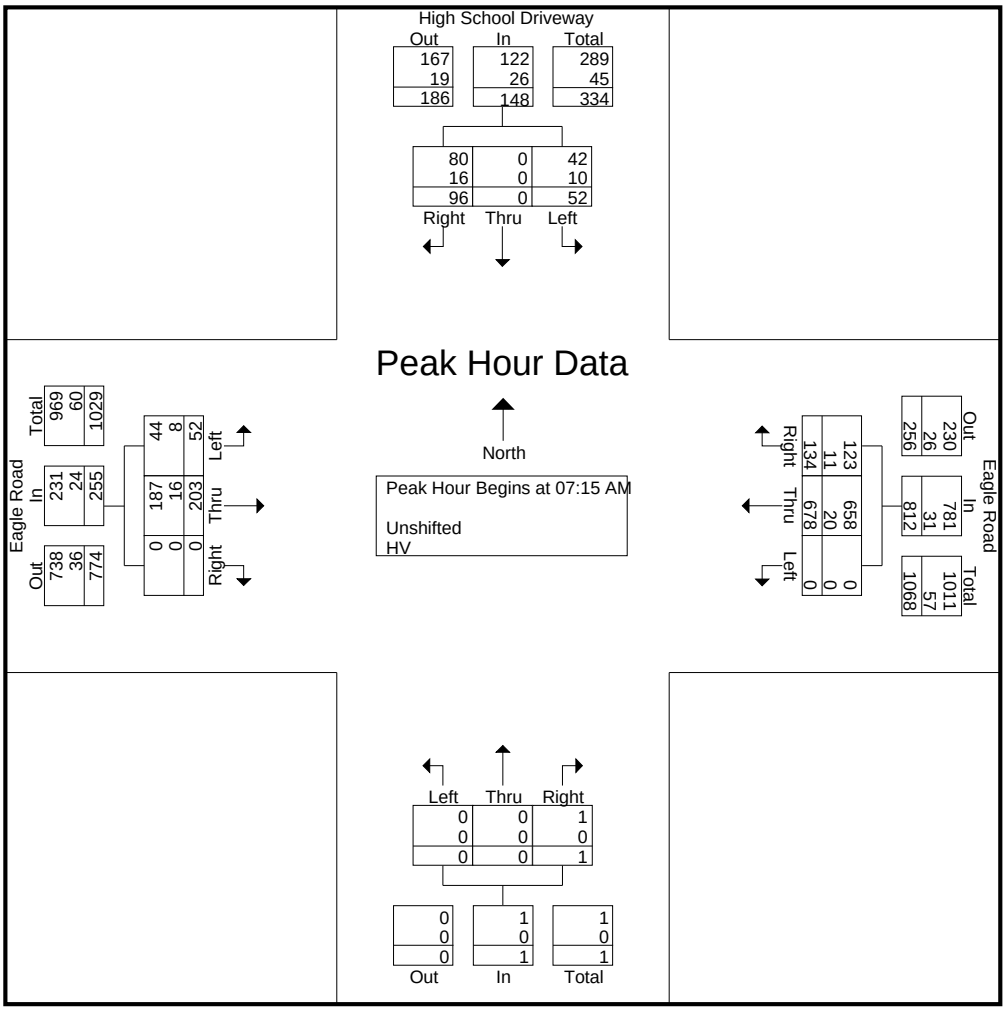


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 21 | 34 | 0 | 55 | 0 | 169 | 37 | 206 | 0 | 0 | 0 | 0 | 13 | 0 | 22 | 35 | 296 |
| 07:30 AM | **26** | 51 | 0 | **77** | 0 | 172 | **81** | **253** | 0 | 0 | 0 | 0 | **29** | 0 | **52** | **81** | **411** |
| 07:45 AM | 4 | **61** | 0 | 65 | 0 | **181** | 13 | 194 | 0 | 0 | **1** | **1** | 10 | 0 | 17 | 27 | 287 |
| 08:00 AM | 1 | 57 | 0 | 58 | 0 | 156 | 3 | 159 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 222 |
| Total Volume | 52 | 203 | 0 | 255 | 0 | 678 | 134 | 812 | 0 | 0 | 1 | 1 | 52 | 0 | 96 | 148 | 1216 |
| % App. Total | 20.4 | 79.6 | 0 | | 0 | 83.5 | 16.5 | | 0 | 0 | 100 | | 35.1 | 0 | 64.9 | | |
| PHF | .500 | .832 | .000 | .828 | .000 | .936 | .414 | .802 | .000 | .000 | .250 | .250 | .448 | .000 | .462 | .457 | .740 |
| Unshifted | 44 | 187 | 0 | 231 | 0 | 658 | 123 | 781 | 0 | 0 | 1 | 1 | 42 | 0 | 80 | 122 | 1135 |
| % Unshifted | 84.6 | 92.1 | 0 | 90.6 | 0 | 97.1 | 91.8 | 96.2 | 0 | 0 | 100 | 100 | 80.8 | 0 | 83.3 | 82.4 | 93.3 |
| HV | 8 | 16 | 0 | 24 | 0 | 20 | 11 | 31 | 0 | 0 | 0 | 0 | 10 | 0 | 16 | 26 | 81 |
| % HV | 15.4 | 7.9 | 0 | 9.4 | 0 | 2.9 | 8.2 | 3.8 | 0 | 0 | 0 | 0 | 19.2 | 0 | 16.7 | 17.6 | 6.7 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

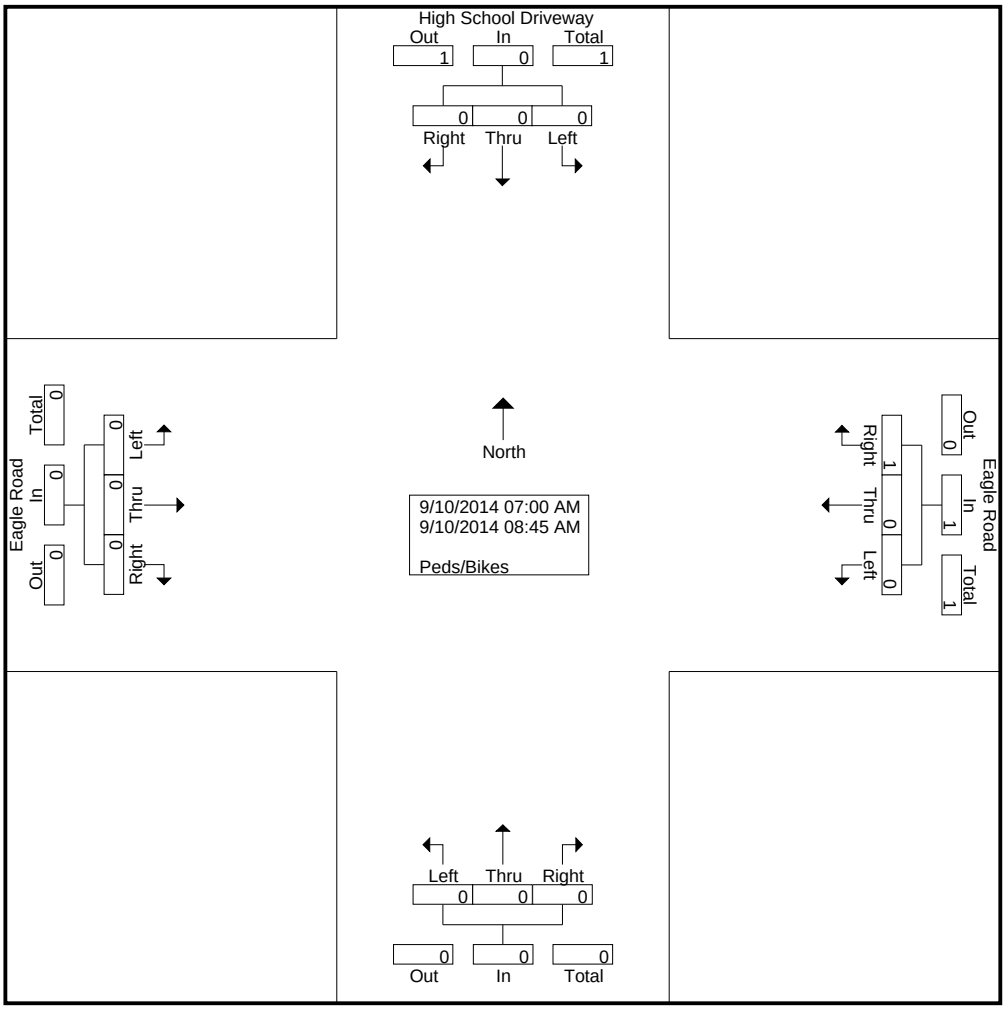
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 14
Counted by: MRolli
Weather: Clear

File Name : 2014-09-10 AM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 100 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 100 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 100 | |

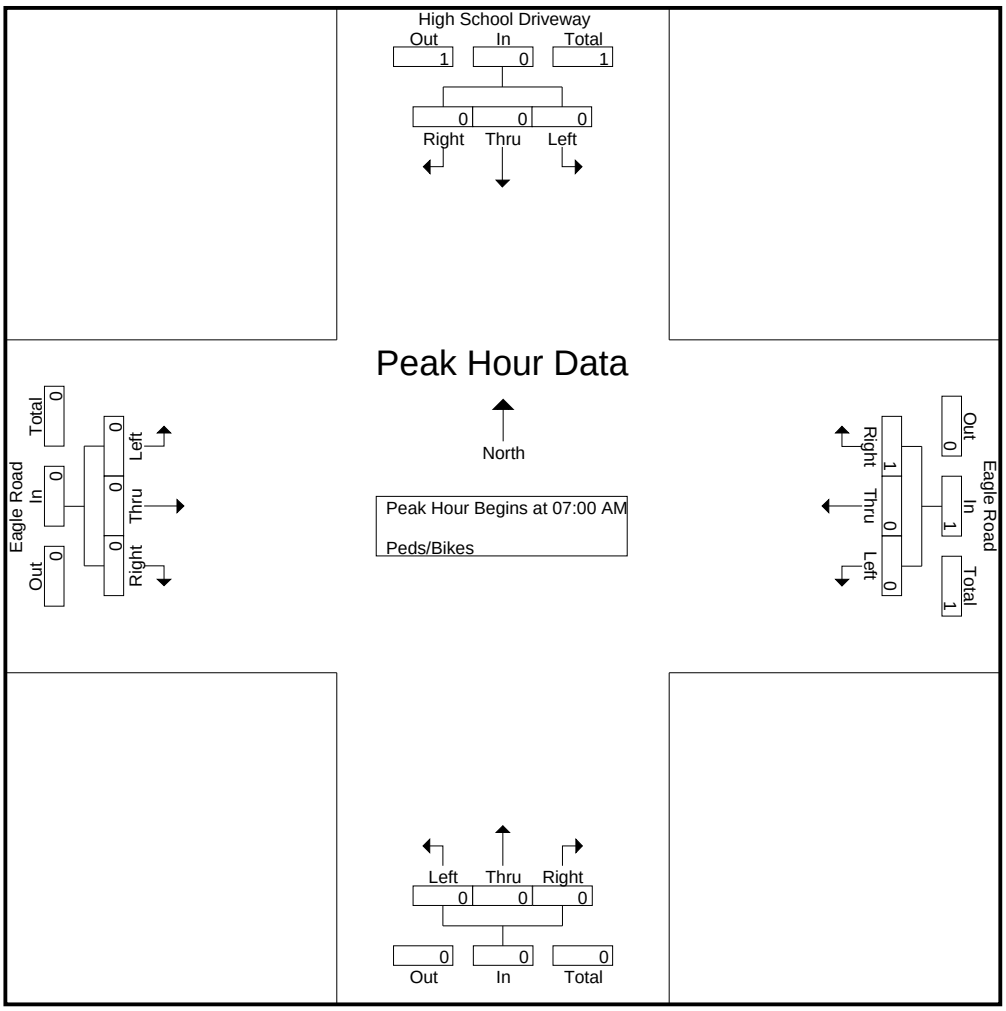


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 AM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

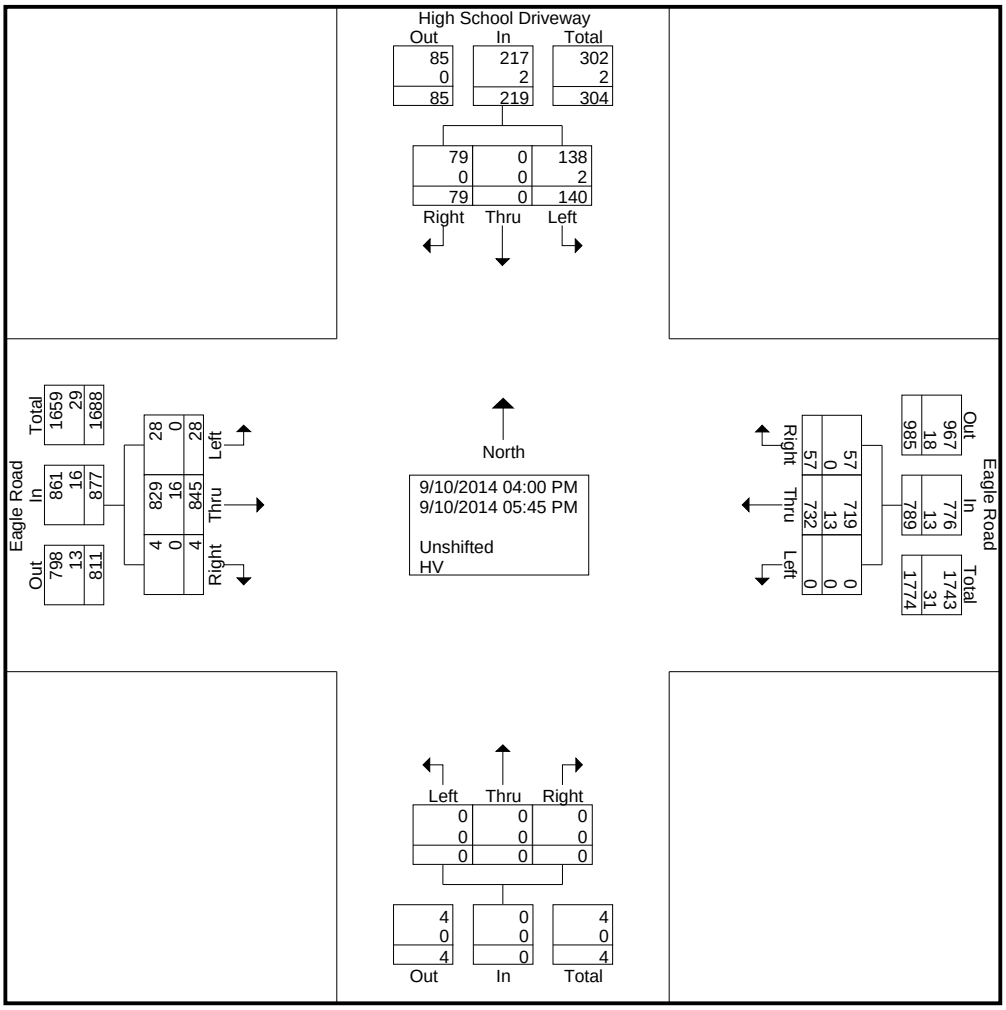
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 14
Counted by: MRolli
Weather: Clear

File Name : 2014-09-10 PM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 2 | 95 | 0 | 0 | 97 | 0 | 110 | 4 | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 5 | 0 | 13 | 0 | 224 | 224 |
| 04:15 PM | 5 | 120 | 0 | 0 | 125 | 0 | 73 | 5 | 0 | 78 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 6 | 0 | 23 | 0 | 226 | 226 |
| 04:30 PM | 3 | 85 | 0 | 0 | 88 | 0 | 99 | 7 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 13 | 0 | 34 | 0 | 228 | 228 |
| 04:45 PM | 2 | 98 | 0 | 0 | 100 | 0 | 100 | 4 | 0 | 104 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 25 | 0 | 52 | 0 | 256 | 256 |
| Total | 12 | 398 | 0 | 0 | 410 | 0 | 382 | 20 | 0 | 402 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 49 | 0 | 122 | 0 | 934 | 934 |
| 05:00 PM | 1 | 127 | 2 | 0 | 130 | 0 | 80 | 6 | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 14 | 0 | 230 | 230 |
| 05:15 PM | 9 | 103 | 2 | 0 | 114 | 0 | 76 | 11 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 7 | 0 | 30 | 0 | 231 | 231 |
| 05:30 PM | 2 | 114 | 0 | 0 | 116 | 0 | 95 | 3 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 13 | 0 | 32 | 0 | 246 | 246 |
| 05:45 PM | 4 | 103 | 0 | 0 | 107 | 0 | 99 | 17 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 5 | 0 | 21 | 0 | 244 | 244 |
| Total | 16 | 447 | 4 | 0 | 467 | 0 | 350 | 37 | 0 | 387 | 0 | 0 | 0 | 0 | 0 | 67 | 0 | 30 | 0 | 97 | 0 | 951 | 951 |
| Grand Total | 28 | 845 | 4 | 0 | 877 | 0 | 732 | 57 | 0 | 789 | 0 | 0 | 0 | 0 | 0 | 140 | 0 | 79 | 0 | 219 | 0 | 1885 | 1885 |
| Apprch % | 3.2 | 96.4 | 0.5 | | | 0 | 92.8 | 7.2 | | | 0 | 0 | 0 | | | 63.9 | 0 | 36.1 | | | | | |
| Total % | 1.5 | 44.8 | 0.2 | | 46.5 | 0 | 38.8 | 3 | | 41.9 | 0 | 0 | 0 | | 0 | 7.4 | 0 | 4.2 | | 11.6 | 0 | 100 | |
| Unshifted | 28 | 829 | 4 | | 861 | 0 | 719 | 57 | | 776 | 0 | 0 | 0 | | 0 | 138 | 0 | 79 | | 217 | 0 | 0 | 1854 |
| % Unshifted | 100 | 98.1 | 100 | 0 | 98.2 | 0 | 98.2 | 100 | 0 | 98.4 | 0 | 0 | 0 | 0 | 0 | 98.6 | 0 | 100 | 0 | 99.1 | 0 | 0 | 98.4 |
| HV | 0 | 16 | 0 | | 16 | 0 | 13 | 0 | | 13 | 0 | 0 | 0 | | 0 | 2 | 0 | 0 | | 2 | 0 | 0 | 31 |
| % HV | 0 | 1.9 | 0 | 0 | 1.8 | 0 | 1.8 | 0 | 0 | 1.6 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 | 0 | 0 | 0.9 | 0 | 0 | 1.6 |

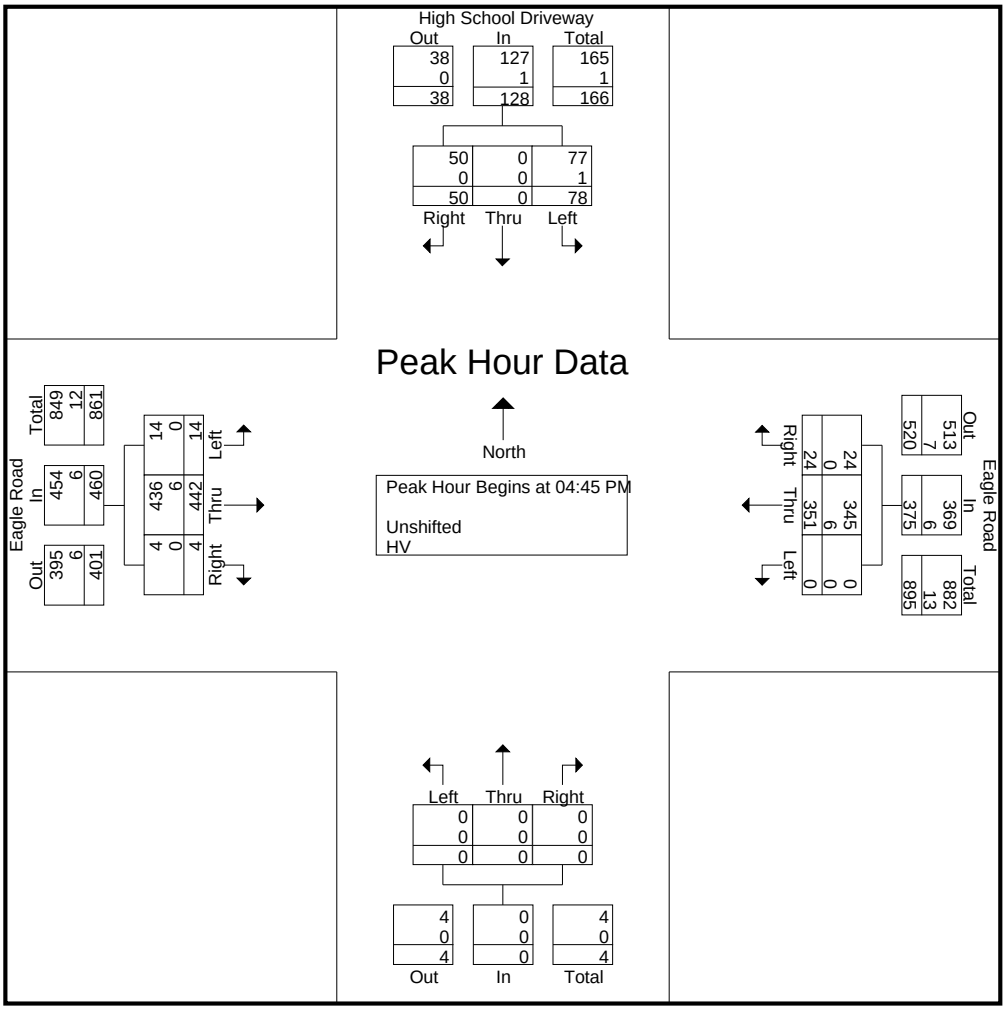


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 2 | 98 | 0 | 100 | 0 | **100** | 4 | **104** | 0 | 0 | 0 | 0 | **27** | 0 | **25** | **52** | **256** |
| 05:00 PM | 1 | **127** | **2** | **130** | 0 | 80 | 6 | 86 | 0 | 0 | 0 | 0 | 9 | 0 | 5 | 14 | 230 |
| 05:15 PM | **9** | 103 | 2 | 114 | 0 | 76 | **11** | 87 | 0 | 0 | 0 | 0 | 23 | 0 | 7 | 30 | 231 |
| 05:30 PM | 2 | 114 | 0 | 116 | 0 | 95 | 3 | 98 | 0 | 0 | 0 | 0 | 19 | 0 | 13 | 32 | 246 |
| Total Volume | 14 | 442 | 4 | 460 | 0 | 351 | 24 | 375 | 0 | 0 | 0 | 0 | 78 | 0 | 50 | 128 | 963 |
| % App. Total | 3 | 96.1 | 0.9 | | 0 | 93.6 | 6.4 | | 0 | 0 | 0 | | 60.9 | 0 | 39.1 | | |
| PHF | .389 | .870 | .500 | .885 | .000 | .878 | .545 | .901 | .000 | .000 | .000 | .000 | .722 | .000 | .500 | .615 | .940 |
| Unshifted | 14 | 436 | 4 | 454 | 0 | 345 | 24 | 369 | 0 | 0 | 0 | 0 | 77 | 0 | 50 | 127 | 950 |
| % Unshifted | 100 | 98.6 | 100 | 98.7 | 0 | 98.3 | 100 | 98.4 | 0 | 0 | 0 | 0 | 98.7 | 0 | 100 | 99.2 | 98.7 |
| HV | 0 | 6 | 0 | 6 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 13 |
| % HV | 0 | 1.4 | 0 | 1.3 | 0 | 1.7 | 0 | 1.6 | 0 | 0 | 0 | 0 | 1.3 | 0 | 0 | 0.8 | 1.3 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

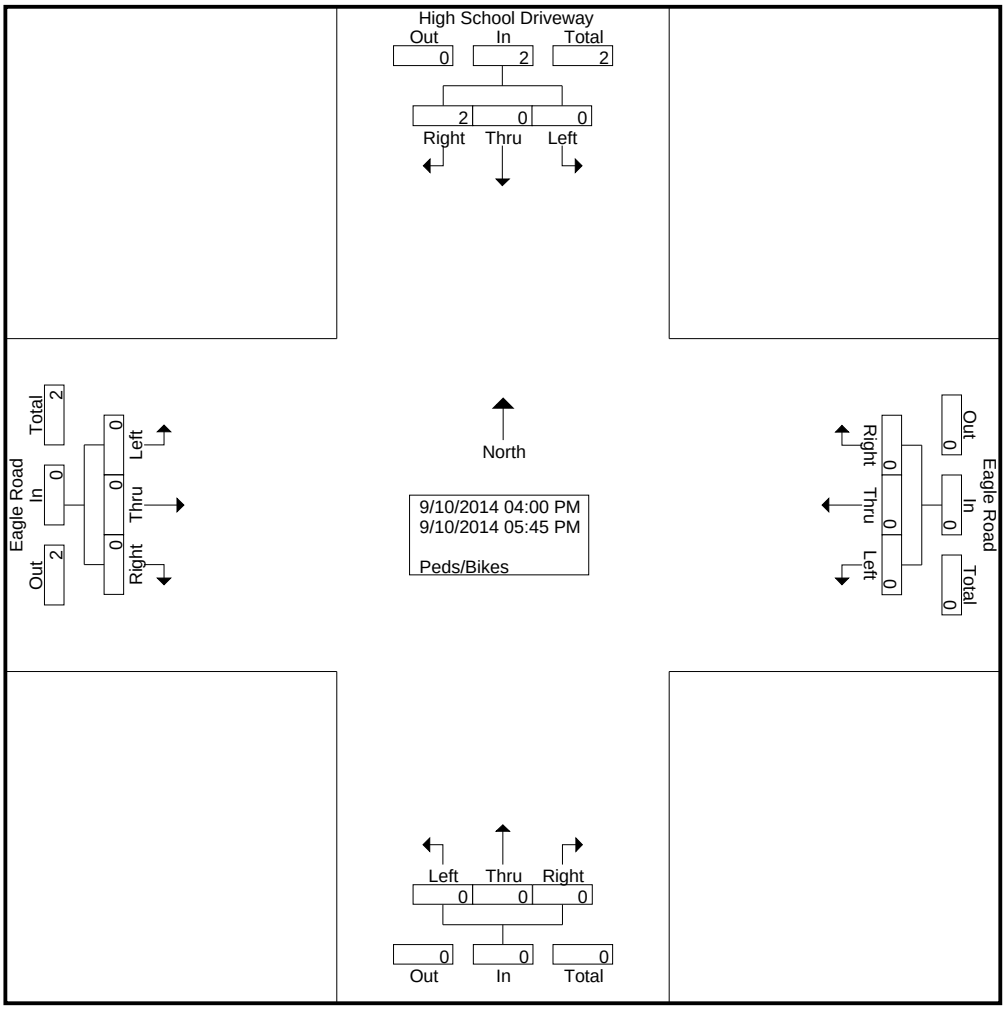
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 14
Counted by: MRolli
Weather: Clear

File Name : 2014-09-10 PM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 2 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 100 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 100 | | 100 | 0 | 100 | |

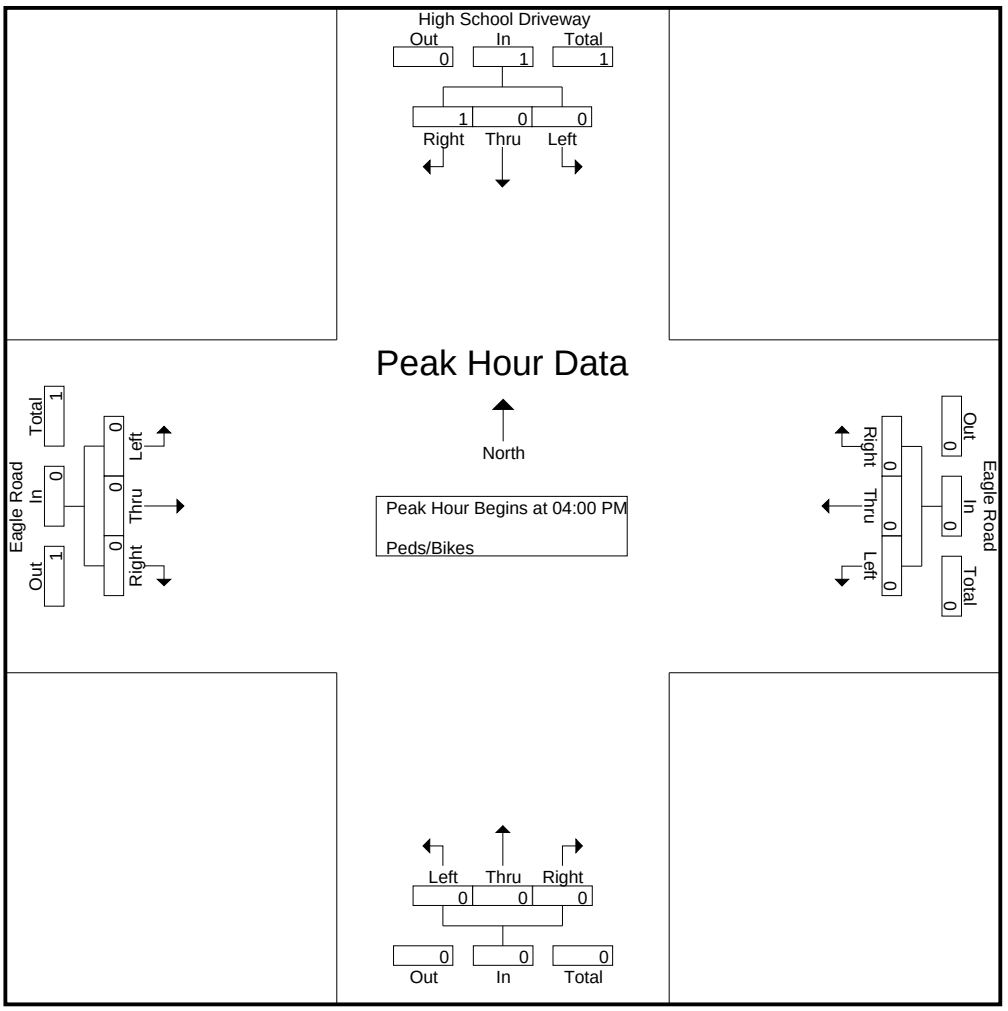


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-10 PM Eagle High School Driveway
Site Code : 00000000
Start Date : 9/10/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | **1** |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 100 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .250 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

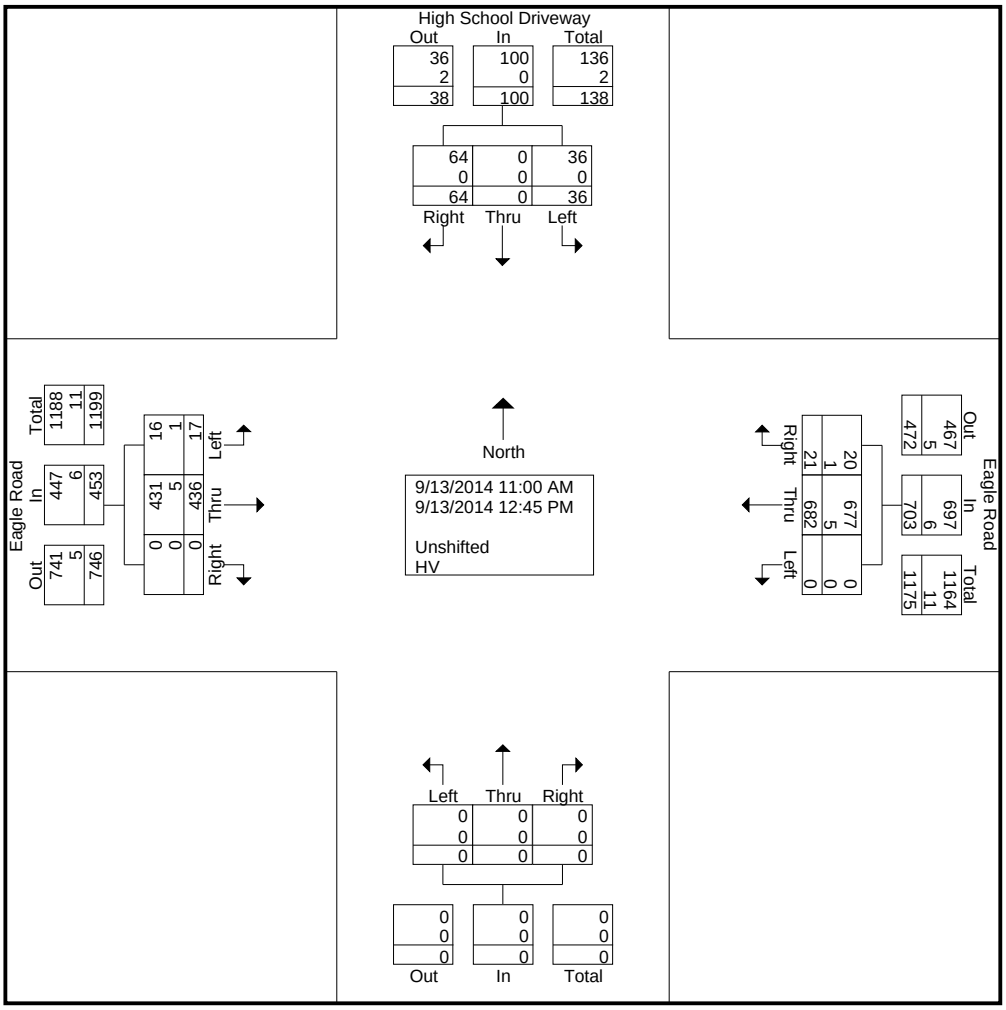
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 7
Counted by: JMuthersbaugh
Weather: Clear

File Name : 2014-09-13 SAT Eagle High School
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Unshifted - HV**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 11:00 AM | 3 | 60 | 0 | 0 | 63 | 0 | 78 | 3 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 147 | 147 |
| 11:15 AM | 1 | 50 | 0 | 0 | 51 | 0 | 111 | 4 | 0 | 115 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 29 | 0 | 43 | 0 | 209 | 209 |
| 11:30 AM | 1 | 41 | 0 | 0 | 42 | 0 | 82 | 2 | 0 | 84 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 0 | 12 | 0 | 138 | 138 |
| 11:45 AM | 1 | 59 | 0 | 0 | 60 | 0 | 74 | 2 | 0 | 76 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 0 | 10 | 0 | 146 | 146 |
| Total | 6 | 210 | 0 | 0 | 216 | 0 | 345 | 11 | 0 | 356 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 48 | 0 | 68 | 0 | 640 | 640 |
| 12:00 PM | 2 | 55 | 0 | 0 | 57 | 0 | 95 | 1 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0 | 8 | 0 | 161 | 161 |
| 12:15 PM | 5 | 61 | 0 | 0 | 66 | 0 | 103 | 4 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 | 0 | 177 | 177 |
| 12:30 PM | 2 | 61 | 0 | 0 | 63 | 0 | 78 | 3 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 7 | 0 | 151 | 151 |
| 12:45 PM | 2 | 49 | 0 | 0 | 51 | 0 | 61 | 2 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 13 | 0 | 127 | 127 |
| Total | 11 | 226 | 0 | 0 | 237 | 0 | 337 | 10 | 0 | 347 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 32 | 0 | 616 | 616 |
| Grand Total | 17 | 436 | 0 | 0 | 453 | 0 | 682 | 21 | 0 | 703 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 64 | 0 | 100 | 0 | 1256 | 1256 |
| Apprch % | 3.8 | 96.2 | 0 | | | 0 | 97 | 3 | | | 0 | 0 | 0 | | | 36 | 0 | 64 | | | | | |
| Total % | 1.4 | 34.7 | 0 | | 36.1 | 0 | 54.3 | 1.7 | | 56 | 0 | 0 | 0 | | 0 | 2.9 | 0 | 5.1 | | 8 | 0 | 100 | |
| Unshifted | 16 | 431 | 0 | | 447 | 0 | 677 | 20 | | 697 | 0 | 0 | 0 | | 0 | 36 | 0 | 64 | | 100 | 0 | 0 | 1244 |
| % Unshifted | 94.1 | 98.9 | 0 | 0 | 98.7 | 0 | 99.3 | 95.2 | 0 | 99.1 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 0 | 99 |
| HV | 1 | 5 | 0 | | 6 | 0 | 5 | 1 | | 6 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 12 |
| % HV | 5.9 | 1.1 | 0 | 0 | 1.3 | 0 | 0.7 | 4.8 | 0 | 0.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

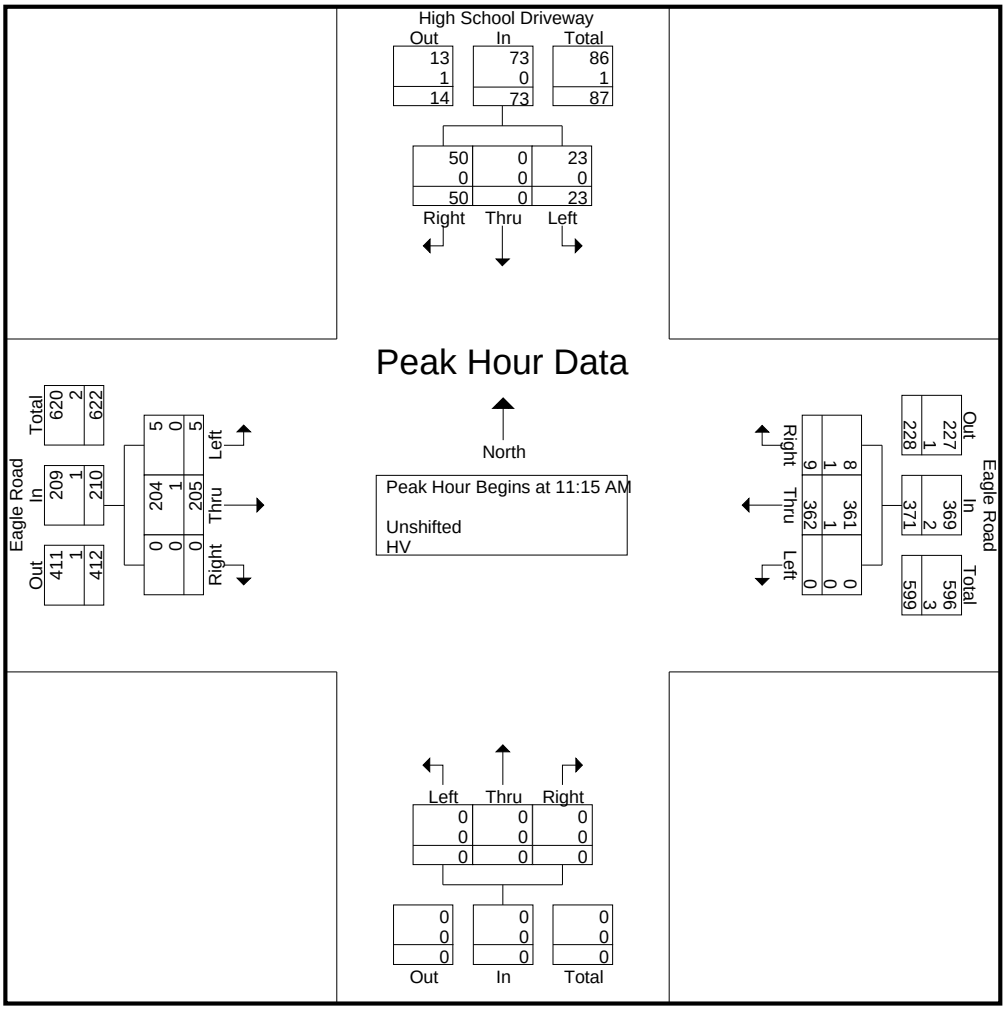


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-13 SAT Eagle High School
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:15 AM | | | | | | | | | | | | | | | | | |
| 11:15 AM | 1 | 50 | 0 | 51 | 0 | **111** | **4** | **115** | 0 | 0 | 0 | 0 | **14** | 0 | **29** | **43** | **209** |
| 11:30 AM | 1 | 41 | 0 | 42 | 0 | 82 | 2 | 84 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 12 | 138 |
| 11:45 AM | 1 | **59** | 0 | **60** | 0 | 74 | 2 | 76 | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 10 | 146 |
| 12:00 PM | **2** | 55 | 0 | 57 | 0 | 95 | 1 | 96 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 8 | 161 |
| Total Volume | 5 | 205 | 0 | 210 | 0 | 362 | 9 | 371 | 0 | 0 | 0 | 0 | 23 | 0 | 50 | 73 | 654 |
| % App. Total | 2.4 | 97.6 | 0 | | 0 | 97.6 | 2.4 | | 0 | 0 | 0 | | 31.5 | 0 | 68.5 | | |
| PHF | .625 | .869 | .000 | .875 | .000 | .815 | .563 | .807 | .000 | .000 | .000 | .000 | .411 | .000 | .431 | .424 | .782 |
| Unshifted | 5 | 204 | 0 | 209 | 0 | 361 | 8 | 369 | 0 | 0 | 0 | 0 | 23 | 0 | 50 | 73 | 651 |
| % Unshifted | 100 | 99.5 | 0 | 99.5 | 0 | 99.7 | 88.9 | 99.5 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 100 | 99.5 |
| HV | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| % HV | 0 | 0.5 | 0 | 0.5 | 0 | 0.3 | 11.1 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 |



Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

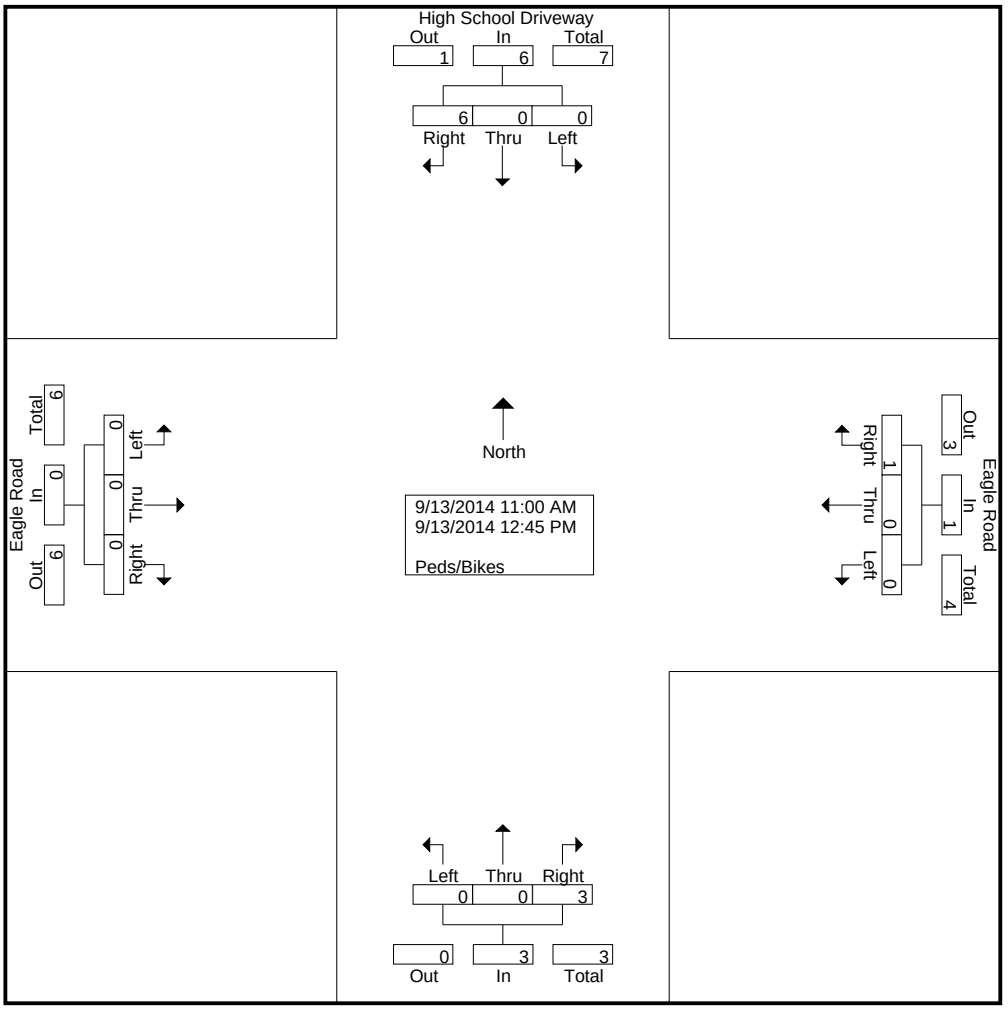
# Eagle Road & High School Driveway
# Marple Township, Delaware County

Counter: 7
Counted by: JMuthersbaugh
Weather: Clear

File Name : 2014-09-13 SAT Eagle High School
Site Code : 00000000
Start Date : 9/13/2014
Page No : 1

**Groups Printed- Peds/Bikes**

| | Eagle Road Eastbound | | | | | Eagle Road Westbound | | | | | Northbound | | | | | High School Driveway Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | 10 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 5 | 5 | 5 | 6 | 6 | 12 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 4 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 1 | 1 | 2 | 4 | 6 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 2 | 3 | 0 | 0 | 6 | 6 | 6 | 8 | 10 | 18 |
| Apprch % | 0 | 0 | 0 | | | 0 | 0 | 100 | | | 0 | 0 | 100 | | | 0 | 0 | 100 | | | | | |
| Total % | 0 | 0 | 0 | | 0 | 0 | 0 | 10 | | 10 | 0 | 0 | 30 | | 30 | 0 | 0 | 60 | | 60 | 44.4 | 55.6 | |

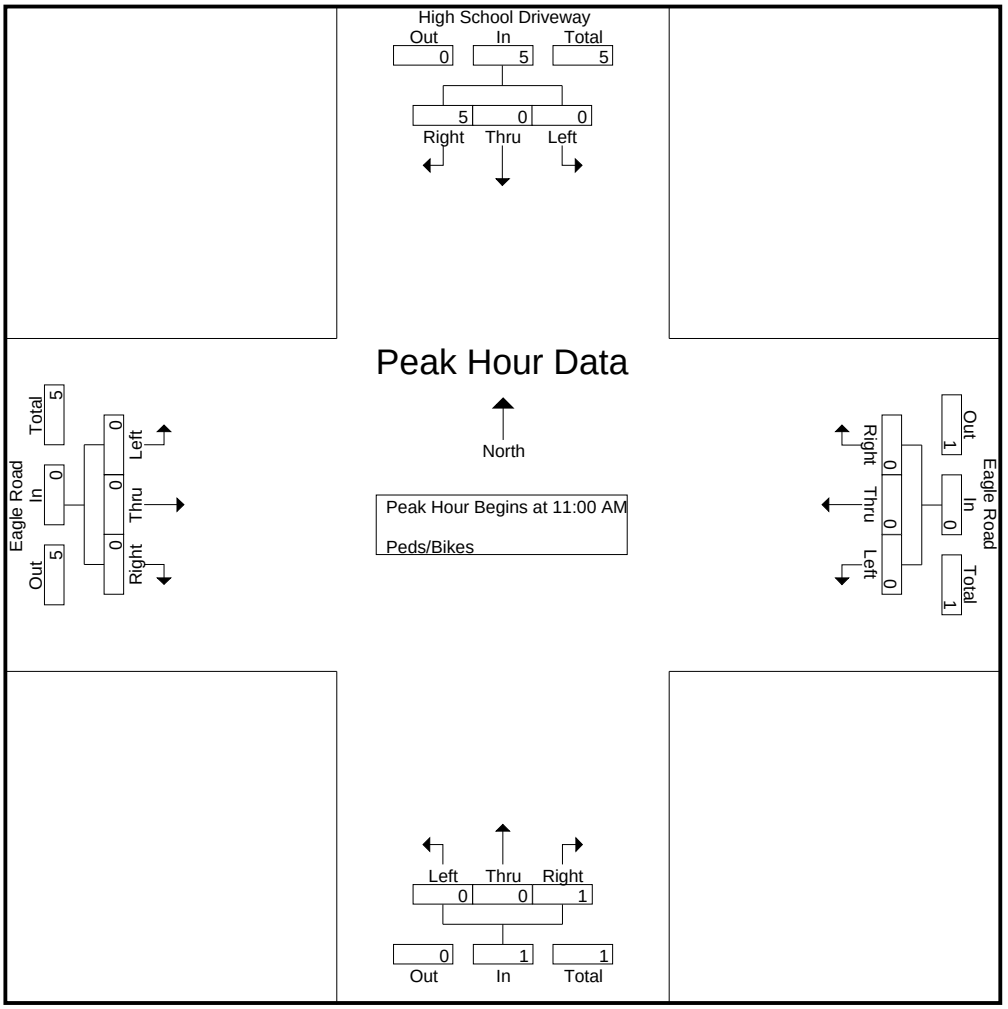


Traffic Planning & Design
2500 East High Street
Pottstown, PA 19464

# Eagle Road & High School Driveway
# Marple Township, Delaware County

File Name : 2014-09-13 SAT Eagle High School
Site Code : 00000000
Start Date : 9/13/2014
Page No : 2

| | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | Northbound | | | | High School Driveway Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 11:00 AM | | | | | | | | | | | | | | | | | |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 0 | 0 | 0 | 0 | 1 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** | **5** | **5** |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 5 | 6 |
| % App. Total | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 100 | | 0 | 0 | 100 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .250 | .250 | .300 |



# *PARKWAY AVENUE &*
# *SC DRIVEWAY/WESTBOURNE DRIVE*

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015

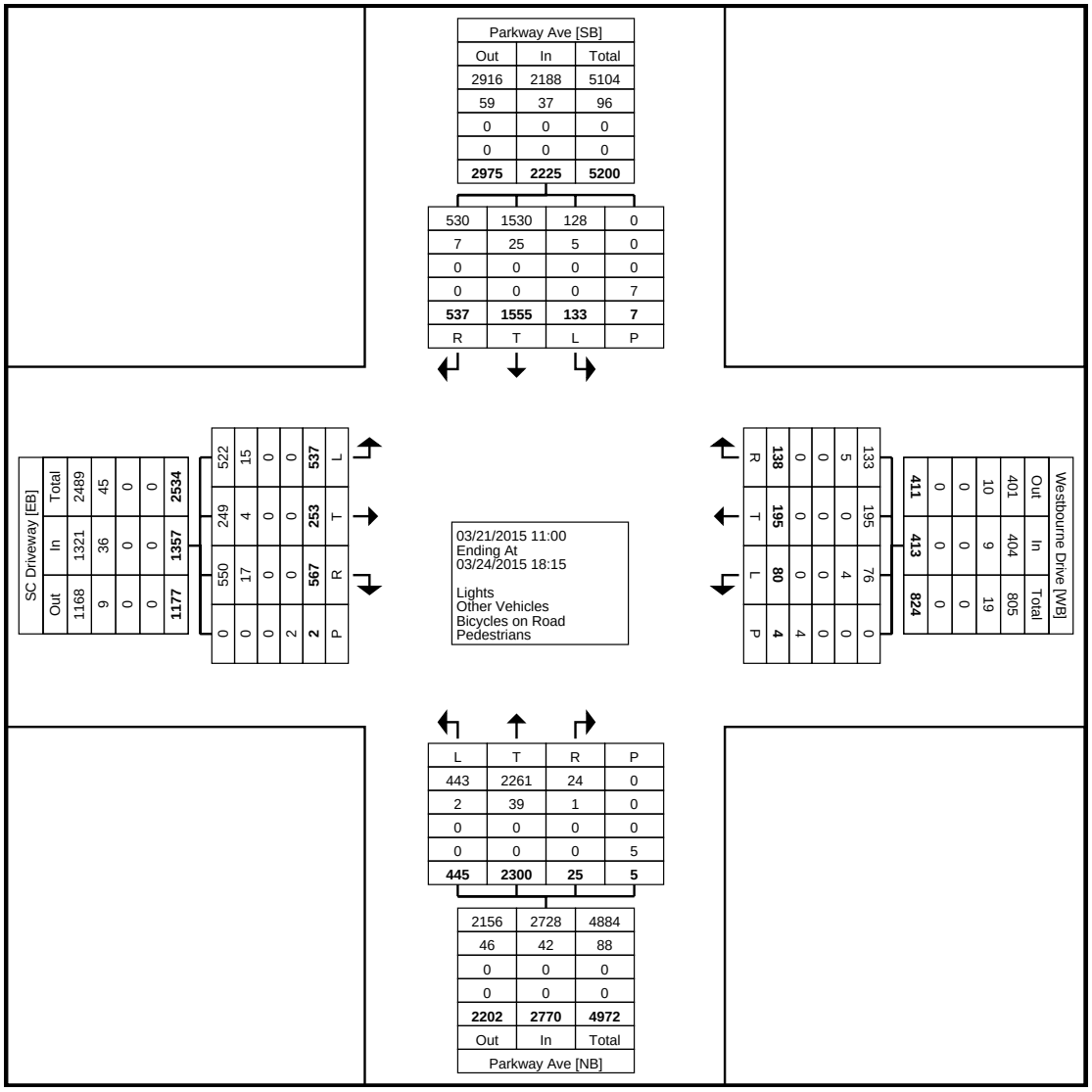

# Turning Movement Data

| Start Time | SC Driveway Eastbound | | | | | Westbourne Drive Westbound | | | | | Parkway Ave Northbound | | | | | Parkway Ave Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 11:00 | 18 | 5 | 20 | 0 | 43 | 0 | 13 | 0 | 0 | 13 | 17 | 71 | 2 | 0 | 90 | 3 | 45 | 34 | 0 | 82 | 228 |
| 11:15 | 23 | 11 | 23 | 0 | 57 | 0 | 10 | 4 | 0 | 14 | 26 | 55 | 0 | 0 | 81 | 2 | 50 | 35 | 0 | 87 | 239 |
| 11:30 | 35 | 4 | 32 | 0 | 71 | 1 | 10 | 6 | 0 | 17 | 30 | 57 | 1 | 1 | 88 | 6 | 51 | 32 | 0 | 89 | 265 |
| 11:45 | 26 | 16 | 26 | 0 | 68 | 3 | 14 | 7 | 0 | 24 | 20 | 49 | 2 | 0 | 71 | 2 | 57 | 29 | 0 | 88 | 251 |
| Hourly Total | 102 | 36 | 101 | 0 | 239 | 4 | 47 | 17 | 0 | 68 | 93 | 232 | 5 | 1 | 330 | 13 | 203 | 130 | 0 | 346 | 983 |
| 12:00 | 28 | 11 | 42 | 0 | 81 | 3 | 13 | 9 | 0 | 25 | 24 | 82 | 1 | 2 | 107 | 7 | 48 | 34 | 1 | 89 | 302 |
| 12:15 | 32 | 12 | 49 | 0 | 93 | 2 | 11 | 6 | 0 | 19 | 31 | 68 | 2 | 0 | 101 | 5 | 42 | 23 | 1 | 70 | 283 |
| 12:30 | 31 | 15 | 33 | 0 | 79 | 2 | 5 | 2 | 0 | 9 | 24 | 60 | 0 | 0 | 84 | 4 | 43 | 22 | 0 | 69 | 241 |
| 12:45 | 32 | 14 | 37 | 0 | 83 | 2 | 12 | 4 | 0 | 18 | 29 | 80 | 1 | 0 | 110 | 7 | 42 | 39 | 0 | 88 | 299 |
| Hourly Total | 123 | 52 | 161 | 0 | 336 | 9 | 41 | 21 | 0 | 71 | 108 | 290 | 4 | 2 | 402 | 23 | 175 | 118 | 2 | 316 | 1125 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:00 | 6 | 5 | 5 | 0 | 16 | 3 | 4 | 10 | 0 | 17 | 5 | 115 | 0 | 0 | 120 | 1 | 28 | 7 | 0 | 36 | 189 |
| 7:15 | 13 | 5 | 9 | 0 | 27 | 3 | 3 | 13 | 0 | 19 | 12 | 163 | 0 | 0 | 175 | 7 | 35 | 7 | 0 | 49 | 270 |
| 7:30 | 12 | 5 | 8 | 0 | 25 | 5 | 7 | 6 | 0 | 18 | 8 | 158 | 0 | 0 | 166 | 5 | 47 | 10 | 0 | 62 | 271 |
| 7:45 | 20 | 5 | 11 | 0 | 36 | 4 | 5 | 8 | 0 | 17 | 18 | 161 | 0 | 0 | 179 | 0 | 45 | 11 | 0 | 56 | 288 |
| Hourly Total | 51 | 20 | 33 | 0 | 104 | 15 | 19 | 37 | 0 | 71 | 43 | 597 | 0 | 0 | 640 | 13 | 155 | 35 | 0 | 203 | 1018 |
| 8:00 | 9 | 3 | 7 | 0 | 19 | 6 | 2 | 8 | 0 | 16 | 8 | 144 | 1 | 0 | 153 | 5 | 41 | 10 | 0 | 56 | 244 |
| 8:15 | 15 | 3 | 6 | 2 | 24 | 3 | 7 | 6 | 0 | 16 | 14 | 153 | 1 | 0 | 168 | 8 | 39 | 21 | 0 | 68 | 276 |
| 8:30 | 11 | 5 | 10 | 0 | 26 | 4 | 10 | 12 | 0 | 26 | 9 | 104 | 1 | 1 | 114 | 8 | 52 | 23 | 0 | 83 | 249 |
| 8:45 | 11 | 8 | 14 | 0 | 33 | 0 | 5 | 19 | 0 | 24 | 17 | 107 | 3 | 0 | 127 | 8 | 55 | 15 | 0 | 78 | 262 |
| Hourly Total | 46 | 19 | 37 | 2 | 102 | 13 | 24 | 45 | 0 | 82 | 48 | 508 | 6 | 1 | 562 | 29 | 187 | 69 | 0 | 285 | 1031 |
| 9:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 23 | 14 | 26 | 0 | 63 | 2 | 8 | 0 | 0 | 10 | 42 | 82 | 2 | 0 | 126 | 4 | 90 | 34 | 0 | 128 | 327 |
| 16:15 | 19 | 15 | 28 | 0 | 62 | 4 | 10 | 0 | 0 | 14 | 19 | 82 | 2 | 0 | 103 | 11 | 79 | 15 | 1 | 105 | 284 |
| 16:30 | 32 | 14 | 38 | 0 | 84 | 8 | 7 | 0 | 0 | 15 | 14 | 80 | 1 | 0 | 95 | 11 | 94 | 21 | 0 | 126 | 320 |
| 16:45 | 37 | 16 | 23 | 0 | 76 | 6 | 10 | 0 | 0 | 16 | 15 | 64 | 1 | 0 | 80 | 7 | 102 | 20 | 0 | 129 | 301 |
| Hourly Total | 111 | 59 | 115 | 0 | 285 | 20 | 35 | 0 | 0 | 55 | 90 | 308 | 6 | 0 | 404 | 33 | 365 | 90 | 1 | 488 | 1232 |
| 17:00 | 36 | 24 | 29 | 0 | 89 | 4 | 5 | 7 | 0 | 16 | 12 | 113 | 1 | 0 | 126 | 2 | 111 | 22 | 0 | 135 | 366 |
| 17:15 | 31 | 16 | 33 | 0 | 80 | 6 | 11 | 5 | 2 | 22 | 14 | 85 | 1 | 0 | 100 | 12 | 114 | 26 | 2 | 152 | 354 |
| 17:30 | 23 | 8 | 36 | 0 | 67 | 5 | 10 | 3 | 2 | 18 | 17 | 89 | 1 | 1 | 107 | 3 | 133 | 23 | 2 | 159 | 351 |
| 17:45 | 14 | 19 | 21 | 0 | 54 | 4 | 3 | 3 | 0 | 10 | 20 | 77 | 1 | 0 | 98 | 5 | 112 | 23 | 0 | 140 | 302 |
| Hourly Total | 104 | 67 | 119 | 0 | 290 | 19 | 29 | 18 | 4 | 66 | 63 | 364 | 4 | 1 | 431 | 22 | 470 | 94 | 4 | 586 | 1373 |
| 18:00 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Grand Total | 537 | 253 | 567 | 2 | 1357 | 80 | 195 | 138 | 4 | 413 | 445 | 2300 | 25 | 5 | 2770 | 133 | 1555 | 537 | 7 | 2225 | 6765 |
| Approach % | 39.6 | 18.6 | 41.8 | - | - | 19.4 | 47.2 | 33.4 | - | - | 16.1 | 83.0 | 0.9 | - | - | 6.0 | 69.9 | 24.1 | - | - | - |
| Total % | 7.9 | 3.7 | 8.4 | - | 20.1 | 1.2 | 2.9 | 2.0 | - | 6.1 | 6.6 | 34.0 | 0.4 | - | 40.9 | 2.0 | 23.0 | 7.9 | - | 32.9 | - |
| Lights | 522 | 249 | 550 | - | 1321 | 76 | 195 | 133 | - | 404 | 443 | 2261 | 24 | - | 2728 | 128 | 1530 | 530 | - | 2188 | 6641 |
| % Lights | 97.2 | 98.4 | 97.0 | - | 97.3 | 95.0 | 100.0 | 96.4 | - | 97.8 | 99.6 | 98.3 | 96.0 | - | 98.5 | 96.2 | 98.4 | 98.7 | - | 98.3 | 98.2 |
| Other Vehicles | 15 | 4 | 17 | - | 36 | 4 | 0 | 5 | - | 9 | 2 | 39 | 1 | - | 42 | 5 | 25 | 7 | - | 37 | 124 |
| % Other Vehicles | 2.8 | 1.6 | 3.0 | - | 2.7 | 5.0 | 0.0 | 3.6 | - | 2.2 | 0.4 | 1.7 | 4.0 | - | 1.5 | 3.8 | 1.6 | 1.3 | - | 1.7 | 1.8 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 2 | - | - | - | - | 4 | - | - | - | - | 5 | - | - | - | - | 7 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 2




Turning Movement Data Plot

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015

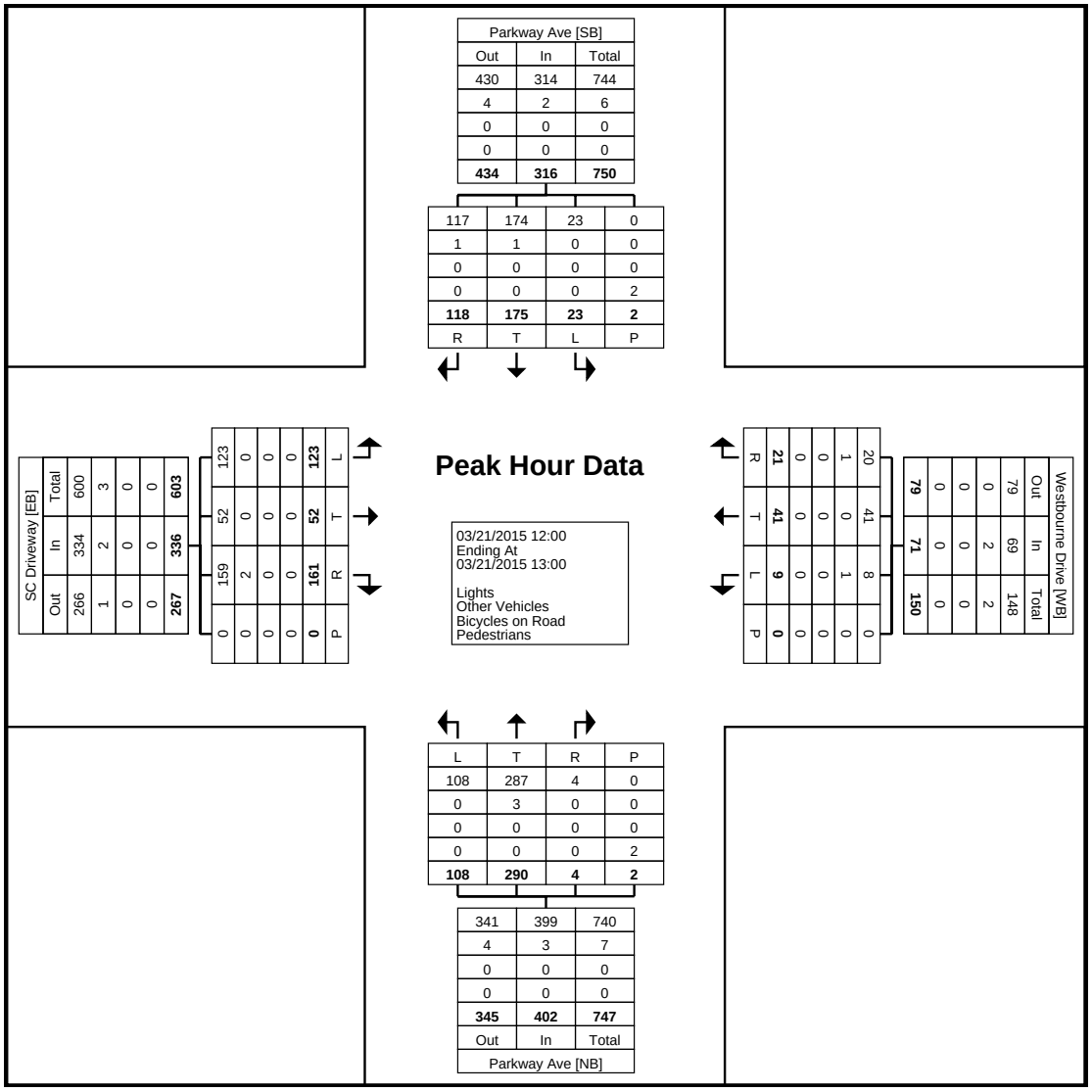

# Turning Movement Peak Hour Data (12:00)

| Start Time | SC Driveway Eastbound | | | | | Westbourne Drive Westbound | | | | | Parkway Ave Northbound | | | | | Parkway Ave Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 12:00 | 28 | 11 | 42 | 0 | 81 | 3 | 13 | 9 | 0 | 25 | 24 | 82 | 1 | 2 | 107 | 7 | 48 | 34 | 1 | 89 | 302 |
| 12:15 | 32 | 12 | 49 | 0 | 93 | 2 | 11 | 6 | 0 | 19 | 31 | 68 | 2 | 0 | 101 | 5 | 42 | 23 | 1 | 70 | 283 |
| 12:30 | 31 | 15 | 33 | 0 | 79 | 2 | 5 | 2 | 0 | 9 | 24 | 60 | 0 | 0 | 84 | 4 | 43 | 22 | 0 | 69 | 241 |
| 12:45 | 32 | 14 | 37 | 0 | 83 | 2 | 12 | 4 | 0 | 18 | 29 | 80 | 1 | 0 | 110 | 7 | 42 | 39 | 0 | 88 | 299 |
| Total | 123 | 52 | 161 | 0 | 336 | 9 | 41 | 21 | 0 | 71 | 108 | 290 | 4 | 2 | 402 | 23 | 175 | 118 | 2 | 316 | 1125 |
| Approach % | 36.6 | 15.5 | 47.9 | - | - | 12.7 | 57.7 | 29.6 | - | - | 26.9 | 72.1 | 1.0 | - | - | 7.3 | 55.4 | 37.3 | - | - | - |
| Total % | 10.9 | 4.6 | 14.3 | - | 29.9 | 0.8 | 3.6 | 1.9 | - | 6.3 | 9.6 | 25.8 | 0.4 | - | 35.7 | 2.0 | 15.6 | 10.5 | - | 28.1 | - |
| PHF | 0.961 | 0.867 | 0.821 | - | 0.903 | 0.750 | 0.788 | 0.583 | - | 0.710 | 0.871 | 0.884 | 0.500 | - | 0.914 | 0.821 | 0.911 | 0.756 | - | 0.888 | 0.931 |
| Lights | 123 | 52 | 159 | - | 334 | 8 | 41 | 20 | - | 69 | 108 | 287 | 4 | - | 399 | 23 | 174 | 117 | - | 314 | 1116 |
| % Lights | 100.0 | 100.0 | 98.8 | - | 99.4 | 88.9 | 100.0 | 95.2 | - | 97.2 | 100.0 | 99.0 | 100.0 | - | 99.3 | 100.0 | 99.4 | 99.2 | - | 99.4 | 99.2 |
| Other Vehicles | 0 | 0 | 2 | - | 2 | 1 | 0 | 1 | - | 2 | 0 | 3 | 0 | - | 3 | 0 | 1 | 1 | - | 2 | 9 |
| % Other Vehicles | 0.0 | 0.0 | 1.2 | - | 0.6 | 11.1 | 0.0 | 4.8 | - | 2.8 | 0.0 | 1.0 | 0.0 | - | 0.7 | 0.0 | 0.6 | 0.8 | - | 0.6 | 0.8 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


Turning Movement Peak Hour Data Plot (12:00)

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015

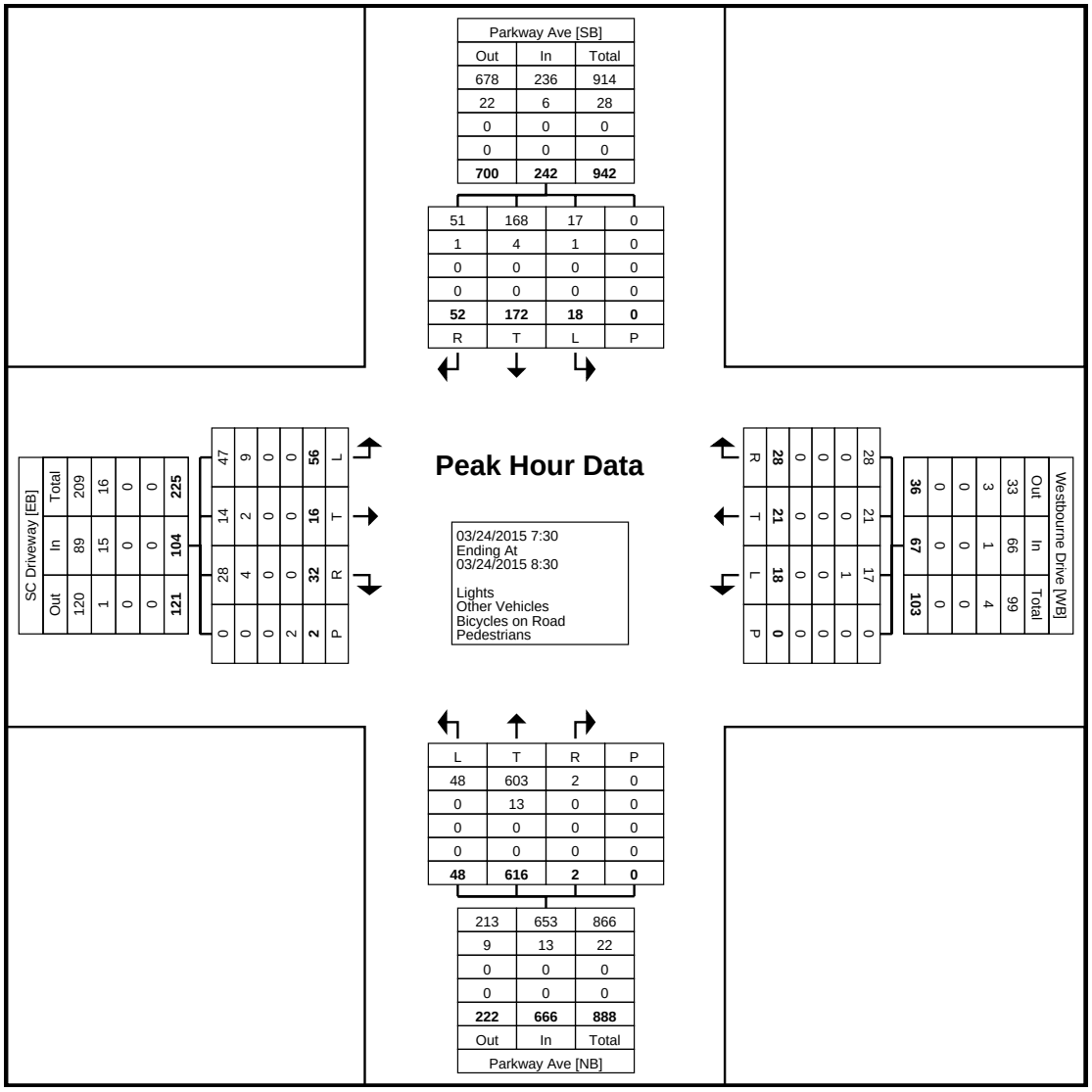

# Turning Movement Peak Hour Data (7:30)

| Start Time | SC Driveway Eastbound | | | | | Westbourne Drive Westbound | | | | | Parkway Ave Northbound | | | | | Parkway Ave Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 7:30 | 12 | 5 | 8 | 0 | 25 | 5 | 7 | 6 | 0 | 18 | 8 | 158 | 0 | 0 | 166 | 5 | 47 | 10 | 0 | 62 | 271 |
| 7:45 | 20 | 5 | 11 | 0 | 36 | 4 | 5 | 8 | 0 | 17 | 18 | 161 | 0 | 0 | 179 | 0 | 45 | 11 | 0 | 56 | 288 |
| 8:00 | 9 | 3 | 7 | 0 | 19 | 6 | 2 | 8 | 0 | 16 | 8 | 144 | 1 | 0 | 153 | 5 | 41 | 10 | 0 | 56 | 244 |
| 8:15 | 15 | 3 | 6 | 2 | 24 | 3 | 7 | 6 | 0 | 16 | 14 | 153 | 1 | 0 | 168 | 8 | 39 | 21 | 0 | 68 | 276 |
| Total | 56 | 16 | 32 | 2 | 104 | 18 | 21 | 28 | 0 | 67 | 48 | 616 | 2 | 0 | 666 | 18 | 172 | 52 | 0 | 242 | 1079 |
| Approach % | 53.8 | 15.4 | 30.8 | - | - | 26.9 | 31.3 | 41.8 | - | - | 7.2 | 92.5 | 0.3 | - | - | 7.4 | 71.1 | 21.5 | - | - | - |
| Total % | 5.2 | 1.5 | 3.0 | - | 9.6 | 1.7 | 1.9 | 2.6 | - | 6.2 | 4.4 | 57.1 | 0.2 | - | 61.7 | 1.7 | 15.9 | 4.8 | - | 22.4 | - |
| PHF | 0.700 | 0.800 | 0.727 | - | 0.722 | 0.750 | 0.750 | 0.875 | - | 0.931 | 0.667 | 0.957 | 0.500 | - | 0.930 | 0.563 | 0.915 | 0.619 | - | 0.890 | 0.937 |
| Lights | 47 | 14 | 28 | - | 89 | 17 | 21 | 28 | - | 66 | 48 | 603 | 2 | - | 653 | 17 | 168 | 51 | - | 236 | 1044 |
| % Lights | 83.9 | 87.5 | 87.5 | - | 85.6 | 94.4 | 100.0 | 100.0 | - | 98.5 | 100.0 | 97.9 | 100.0 | - | 98.0 | 94.4 | 97.7 | 98.1 | - | 97.5 | 96.8 |
| Other Vehicles | 9 | 2 | 4 | - | 15 | 1 | 0 | 0 | - | 1 | 0 | 13 | 0 | - | 13 | 1 | 4 | 1 | - | 6 | 35 |
| % Other Vehicles | 16.1 | 12.5 | 12.5 | - | 14.4 | 5.6 | 0.0 | 0.0 | - | 1.5 | 0.0 | 2.1 | 0.0 | - | 2.0 | 5.6 | 2.3 | 1.9 | - | 2.5 | 3.2 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 6




Turning Movement Peak Hour Data Plot (7:30)

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015

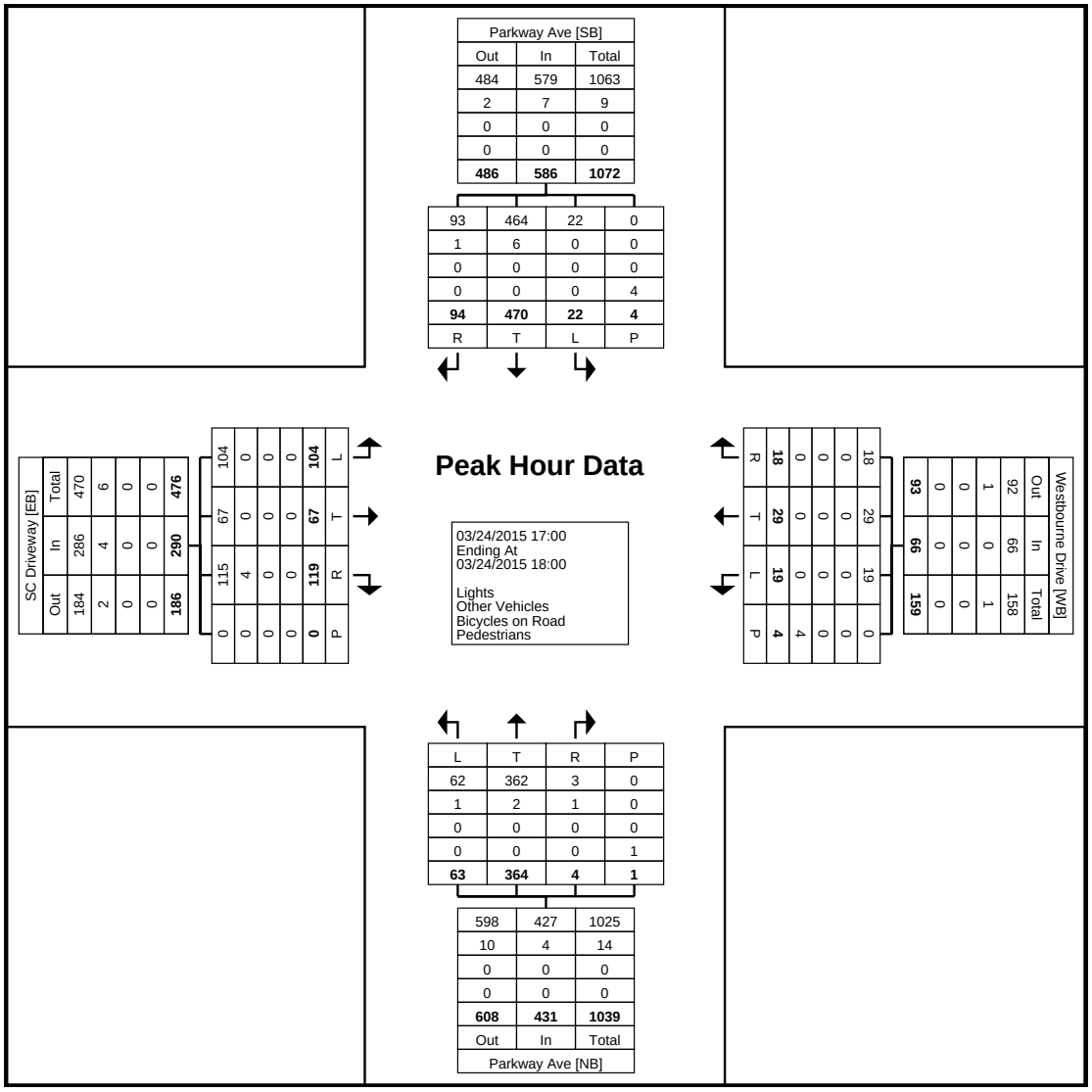

# Turning Movement Peak Hour Data (17:00)

| Start Time | SC Driveway Eastbound | | | | | Westbourne Drive Westbound | | | | | Parkway Ave Northbound | | | | | Parkway Ave Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 17:00 | 36 | 24 | 29 | 0 | 89 | 4 | 5 | 7 | 0 | 16 | 12 | 113 | 1 | 0 | 126 | 2 | 111 | 22 | 0 | 135 | 366 |
| 17:15 | 31 | 16 | 33 | 0 | 80 | 6 | 11 | 5 | 2 | 22 | 14 | 85 | 1 | 0 | 100 | 12 | 114 | 26 | 2 | 152 | 354 |
| 17:30 | 23 | 8 | 36 | 0 | 67 | 5 | 10 | 3 | 2 | 18 | 17 | 89 | 1 | 1 | 107 | 3 | 133 | 23 | 2 | 159 | 351 |
| 17:45 | 14 | 19 | 21 | 0 | 54 | 4 | 3 | 3 | 0 | 10 | 20 | 77 | 1 | 0 | 98 | 5 | 112 | 23 | 0 | 140 | 302 |
| Total | 104 | 67 | 119 | 0 | 290 | 19 | 29 | 18 | 4 | 66 | 63 | 364 | 4 | 1 | 431 | 22 | 470 | 94 | 4 | 586 | 1373 |
| Approach % | 35.9 | 23.1 | 41.0 | - | - | 28.8 | 43.9 | 27.3 | - | - | 14.6 | 84.5 | 0.9 | - | - | 3.8 | 80.2 | 16.0 | - | - | - |
| Total % | 7.6 | 4.9 | 8.7 | - | 21.1 | 1.4 | 2.1 | 1.3 | - | 4.8 | 4.6 | 26.5 | 0.3 | - | 31.4 | 1.6 | 34.2 | 6.8 | - | 42.7 | - |
| PHF | 0.722 | 0.698 | 0.826 | - | 0.815 | 0.792 | 0.659 | 0.643 | - | 0.750 | 0.788 | 0.805 | 1.000 | - | 0.855 | 0.458 | 0.883 | 0.904 | - | 0.921 | 0.938 |
| Lights | 104 | 67 | 115 | - | 286 | 19 | 29 | 18 | - | 66 | 62 | 362 | 3 | - | 427 | 22 | 464 | 93 | - | 579 | 1358 |
| % Lights | 100.0 | 100.0 | 96.6 | - | 98.6 | 100.0 | 100.0 | 100.0 | - | 100.0 | 98.4 | 99.5 | 75.0 | - | 99.1 | 100.0 | 98.7 | 98.9 | - | 98.8 | 98.9 |
| Other Vehicles | 0 | 0 | 4 | - | 4 | 0 | 0 | 0 | - | 0 | 1 | 2 | 1 | - | 4 | 0 | 6 | 1 | - | 7 | 15 |
| % Other Vehicles | 0.0 | 0.0 | 3.4 | - | 1.4 | 0.0 | 0.0 | 0.0 | - | 0.0 | 1.6 | 0.5 | 25.0 | - | 0.9 | 0.0 | 1.3 | 1.1 | - | 1.2 | 1.1 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 4 | - | - | - | - | 1 | - | - | - | - | 4 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: MIO
Counted By:: JG
Weather:: Overcast

Count Name: Parkway Ave & Shopping Center Driveway - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


Turning Movement Peak Hour Data Plot (17:00)

## *EAGLE ROAD & WEST ROLLING ROAD*

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


# Turning Movement Data

| Start Time | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | West Rolling Road Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:00 | 49 | 13 | 0 | 62 | 18 | 57 | 0 | 75 | 15 | 25 | 0 | 40 | 177 |
| 11:15 | 30 | 9 | 0 | 39 | 17 | 58 | 0 | 75 | 12 | 31 | 0 | 43 | 157 |
| 11:30 | 54 | 10 | 0 | 64 | 18 | 82 | 0 | 100 | 16 | 21 | 0 | 37 | 201 |
| 11:45 | 43 | 9 | 0 | 52 | 32 | 71 | 0 | 103 | 20 | 34 | 0 | 54 | 209 |
| Hourly Total | 176 | 41 | 0 | 217 | 85 | 268 | 0 | 353 | 63 | 111 | 0 | 174 | 744 |
| 12:00 | 55 | 7 | 0 | 62 | 29 | 73 | 0 | 102 | 17 | 27 | 0 | 44 | 208 |
| 12:15 | 45 | 19 | 0 | 64 | 25 | 69 | 0 | 94 | 11 | 34 | 0 | 45 | 203 |
| 12:30 | 52 | 8 | 0 | 60 | 35 | 81 | 0 | 116 | 21 | 28 | 0 | 49 | 225 |
| 12:45 | 51 | 14 | 0 | 65 | 17 | 68 | 0 | 85 | 16 | 40 | 0 | 56 | 206 |
| Hourly Total | 203 | 48 | 0 | 251 | 106 | 291 | 0 | 397 | 65 | 129 | 0 | 194 | 842 |
| 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 | 44 | 2 | 0 | 46 | 9 | 93 | 0 | 102 | 23 | 61 | 0 | 84 | 232 |
| 7:15 | 59 | 8 | 0 | 67 | 11 | 101 | 0 | 112 | 64 | 75 | 0 | 139 | 318 |
| 7:30 | 48 | 11 | 0 | 59 | 11 | 144 | 0 | 155 | 83 | 74 | 0 | 157 | 371 |
| 7:45 | 75 | 4 | 0 | 79 | 10 | 97 | 0 | 107 | 54 | 91 | 0 | 145 | 331 |
| Hourly Total | 226 | 25 | 0 | 251 | 41 | 435 | 0 | 476 | 224 | 301 | 0 | 525 | 1252 |
| 8:00 | 53 | 4 | 0 | 57 | 10 | 95 | 0 | 105 | 39 | 74 | 1 | 113 | 275 |
| 8:15 | 52 | 6 | 0 | 58 | 11 | 97 | 0 | 108 | 40 | 66 | 0 | 106 | 272 |
| 8:30 | 44 | 3 | 0 | 47 | 18 | 62 | 0 | 80 | 43 | 64 | 0 | 107 | 234 |
| 8:45 | 57 | 6 | 0 | 63 | 16 | 77 | 0 | 93 | 23 | 52 | 0 | 75 | 231 |
| Hourly Total | 206 | 19 | 0 | 225 | 55 | 331 | 0 | 386 | 145 | 256 | 1 | 401 | 1012 |
| 9:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hourly Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 16:00 | 77 | 19 | 0 | 96 | 50 | 83 | 0 | 133 | 9 | 33 | 0 | 42 | 271 |
| 16:15 | 82 | 28 | 0 | 110 | 52 | 68 | 0 | 120 | 8 | 30 | 0 | 38 | 268 |
| 16:30 | 78 | 25 | 0 | 103 | 73 | 92 | 0 | 165 | 17 | 24 | 0 | 41 | 309 |
| 16:45 | 88 | 37 | 0 | 125 | 73 | 74 | 0 | 147 | 9 | 23 | 0 | 32 | 304 |
| Hourly Total | 325 | 109 | 0 | 434 | 248 | 317 | 0 | 565 | 43 | 110 | 0 | 153 | 1152 |
| 17:00 | 88 | 37 | 0 | 125 | 92 | 82 | 0 | 174 | 12 | 21 | 0 | 33 | 332 |
| 17:15 | 82 | 48 | 0 | 130 | 86 | 79 | 0 | 165 | 11 | 26 | 0 | 37 | 332 |
| 17:30 | 81 | 45 | 0 | 126 | 98 | 80 | 0 | 178 | 8 | 22 | 0 | 30 | 334 |
| 17:45 | 74 | 36 | 0 | 110 | 61 | 90 | 0 | 151 | 21 | 19 | 1 | 40 | 301 |
| Hourly Total | 325 | 166 | 0 | 491 | 337 | 331 | 0 | 668 | 52 | 88 | 1 | 140 | 1299 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 1461 | 408 | 0 | 1869 | 872 | 1974 | 0 | 2846 | 592 | 995 | 2 | 1587 | 6302 |
| Approach % | 78.2 | 21.8 | - | - | 30.6 | 69.4 | - | - | 37.3 | 62.7 | - | - | - |
| Total % | 23.2 | 6.5 | - | 29.7 | 13.8 | 31.3 | - | 45.2 | 9.4 | 15.8 | - | 25.2 | - |
| Lights | 1427 | 406 | - | 1833 | 868 | 1933 | - | 2801 | 579 | 989 | - | 1568 | 6202 |
| % Lights | 97.7 | 99.5 | - | 98.1 | 99.5 | 97.9 | - | 98.4 | 97.8 | 99.4 | - | 98.8 | 98.4 |
| Other Vehicles | 34 | 1 | - | 35 | 4 | 41 | - | 45 | 13 | 6 | - | 19 | 99 |
| % Other Vehicles | 2.3 | 0.2 | - | 1.9 | 0.5 | 2.1 | - | 1.6 | 2.2 | 0.6 | - | 1.2 | 1.6 |
| Bicycles on Road | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.2 | - | 0.1 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 2

| Fake Approach [SB] | | |
|---|---|---|
| Out | In | Total |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **0** | **0** | **0** |

| Eagle Road [EB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 2512 | 1833 | 4345 | 89 | 1 | 0 |
| | 54 | 35 | 89 | 1 | 0 | 1 |
| | 0 | 1 | 1 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| | **2566** | **1869** | **4435** | **0** | **0** | **0** |

| | | | | | |
|---|---|---|---|---|---|
| 0 | 406 | 1427 | 0 | 0 | P |
| 0 | 1 | 34 | 0 | 0 | R |
| 0 | 1 | 0 | 0 | 0 | T |
| 0 | 0 | 0 | 0 | 0 | L |
| **0** | **408** | **1461** | **0** | **0** | P |

03/21/2015 11:00
Ending At
03/24/2015 18:15

Lights
Other Vehicles
Bicycles on Road
Pedestrians

| | | | | | |
|---|---|---|---|---|---|
| 0 | 868 | 1933 | 0 | 0 | T |
| 0 | 4 | 41 | 0 | 0 | L |
| 0 | 0 | 0 | 0 | 0 | P |
| 0 | 0 | 0 | 0 | 0 | |
| **0** | **0** | **0** | **0** | **0** | |

| Eagle Road [WB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 2416 | 2801 | 5217 | 40 | 0 | 0 |
| | 40 | 45 | 85 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| | **2456** | **2846** | **5302** | **0** | **0** | **0** |

| L | R | P |
|---|---|---|
| 579 | 989 | 0 |
| 13 | 6 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 2 |
| **592** | **995** | **2** |

| | | |
|---|---|---|
| 1274 | 1568 | 2842 |
| 5 | 19 | 24 |
| 1 | 0 | 1 |
| 0 | 0 | 0 |
| **1280** | **1587** | **2867** |
| Out | In | Total |
| West Rolling Road [NB] | | |

Turning Movement Data Plot

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


# Turning Movement Peak Hour Data (11:45)

| Start Time | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | West Rolling Road Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 11:45 | 43 | 9 | 0 | 52 | 32 | 71 | 0 | 103 | 20 | 34 | 0 | 54 | 209 |
| 12:00 | 55 | 7 | 0 | 62 | 29 | 73 | 0 | 102 | 17 | 27 | 0 | 44 | 208 |
| 12:15 | 45 | 19 | 0 | 64 | 25 | 69 | 0 | 94 | 11 | 34 | 0 | 45 | 203 |
| 12:30 | 52 | 8 | 0 | 60 | 35 | 81 | 0 | 116 | 21 | 28 | 0 | 49 | 225 |
| Total | 195 | 43 | 0 | 238 | 121 | 294 | 0 | 415 | 69 | 123 | 0 | 192 | 845 |
| Approach % | 81.9 | 18.1 | - | - | 29.2 | 70.8 | - | - | 35.9 | 64.1 | - | - | - |
| Total % | 23.1 | 5.1 | - | 28.2 | 14.3 | 34.8 | - | 49.1 | 8.2 | 14.6 | - | 22.7 | - |
| PHF | 0.886 | 0.566 | - | 0.930 | 0.864 | 0.907 | - | 0.894 | 0.821 | 0.904 | - | 0.889 | 0.939 |
| Lights | 194 | 43 | - | 237 | 121 | 294 | - | 415 | 69 | 123 | - | 192 | 844 |
| % Lights | 99.5 | 100.0 | - | 99.6 | 100.0 | 100.0 | - | 100.0 | 100.0 | 100.0 | - | 100.0 | 99.9 |
| Other Vehicles | 1 | 0 | - | 1 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 1 |
| % Other Vehicles | 0.5 | 0.0 | - | 0.4 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 4

| Fake Approach [SB] | | |
|---|---|---|
| Out | In | Total |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **0** | **0** | **0** |

| Eagle Road [EB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 363 | 237 | 600 | | | |
| | 0 | 1 | 1 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **363** | **238** | **601** | | | |
| P | 0 | 43 | 194 | | | |
| R | **0** | **43** | **195** | | | |
| T | 0 | 0 | 1 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |

## Peak Hour Data

03/21/2015 11:45
Ending At
03/21/2015 12:45

Lights
Other Vehicles
Bicycles on Road
Pedestrians

| Eagle Road [WB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 317 | 415 | 732 | | | |
| | 1 | 0 | 1 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **318** | **415** | **733** | | | |
| T | 294 | 0 | 0 | | | |
| L | **121** | 0 | 0 | | | |
| P | **0** | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 294 | 121 | 0 | | | |

| L | R | P |
|---|---|---|
| 69 | 123 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **69** | **123** | **0** |

| | | |
|---|---|---|
| 164 | 192 | 356 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **164** | **192** | **356** |
| Out | In | Total |
| West Rolling Road [NB] | | |

Turning Movement Peak Hour Data Plot (11:45)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


# Turning Movement Peak Hour Data (7:15)

| Start Time | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | West Rolling Road Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 7:15 | 59 | 8 | 0 | 67 | 11 | 101 | 0 | 112 | 64 | 75 | 0 | 139 | 318 |
| 7:30 | 48 | 11 | 0 | 59 | 11 | 144 | 0 | 155 | 83 | 74 | 0 | 157 | 371 |
| 7:45 | 75 | 4 | 0 | 79 | 10 | 97 | 0 | 107 | 54 | 91 | 0 | 145 | 331 |
| 8:00 | 53 | 4 | 0 | 57 | 10 | 95 | 0 | 105 | 39 | 74 | 1 | 113 | 275 |
| Total | 235 | 27 | 0 | 262 | 42 | 437 | 0 | 479 | 240 | 314 | 1 | 554 | 1295 |
| Approach % | 89.7 | 10.3 | - | - | 8.8 | 91.2 | - | - | 43.3 | 56.7 | - | - | - |
| Total % | 18.1 | 2.1 | - | 20.2 | 3.2 | 33.7 | - | 37.0 | 18.5 | 24.2 | - | 42.8 | - |
| PHF | 0.783 | 0.614 | - | 0.829 | 0.955 | 0.759 | - | 0.773 | 0.723 | 0.863 | - | 0.882 | 0.873 |
| Lights | 222 | 27 | - | 249 | 41 | 418 | - | 459 | 230 | 310 | - | 540 | 1248 |
| % Lights | 94.5 | 100.0 | - | 95.0 | 97.6 | 95.7 | - | 95.8 | 95.8 | 98.7 | - | 97.5 | 96.4 |
| Other Vehicles | 13 | 0 | - | 13 | 1 | 19 | - | 20 | 10 | 4 | - | 14 | 47 |
| % Other Vehicles | 5.5 | 0.0 | - | 5.0 | 2.4 | 4.3 | - | 4.2 | 4.2 | 1.3 | - | 2.5 | 3.6 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 6

| Fake Approach [SB] | | |
|---|---|---|
| Out | In | Total |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **0** | **0** | **0** |

| Eagle Road [EB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 648 | 249 | 897 | | | |
| | 29 | 13 | 42 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **677** | **262** | **939** | | | |
| P | 0 | 27 | 235 | T | | |
| R | 0 | 0 | 0 | | | |
| T | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 222 | 27 | 0 | | | |
| | 13 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **235** | **27** | **0** | | | |

## Peak Hour Data

03/24/2015 7:15
Ending At
03/24/2015 8:15

Lights
Other Vehicles
Bicycles on Road
Pedestrians

| Eagle Road [WB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 532 | 459 | 991 | | | |
| | 17 | 20 | 37 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **549** | **479** | **1028** | | | |
| T | 418 | 41 | 0 | | | |
| L | 19 | 1 | 0 | | | |
| P | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **437** | **42** | **0** | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **418** | **41** | **0** | | | |

| L | R | P |
|---|---|---|
| 230 | 310 | 0 |
| 10 | 4 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 1 |
| **240** | **314** | **1** |

| | | |
|---|---|---|
| 68 | 540 | 608 |
| 1 | 14 | 15 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **69** | **554** | **623** |
| Out | In | Total |
| West Rolling Road [NB] | | |

Turning Movement Peak Hour Data Plot (7:15)

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015


# Turning Movement Peak Hour Data (16:45)

| Start Time | Eagle Road Eastbound | | | | Eagle Road Westbound | | | | West Rolling Road Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| 16:45 | 88 | 37 | 0 | 125 | 73 | 74 | 0 | 147 | 9 | 23 | 0 | 32 | 304 |
| 17:00 | 88 | 37 | 0 | 125 | 92 | 82 | 0 | 174 | 12 | 21 | 0 | 33 | 332 |
| 17:15 | 82 | 48 | 0 | 130 | 86 | 79 | 0 | 165 | 11 | 26 | 0 | 37 | 332 |
| 17:30 | 81 | 45 | 0 | 126 | 98 | 80 | 0 | 178 | 8 | 22 | 0 | 30 | 334 |
| Total | 339 | 167 | 0 | 506 | 349 | 315 | 0 | 664 | 40 | 92 | 0 | 132 | 1302 |
| Approach % | 67.0 | 33.0 | - | - | 52.6 | 47.4 | - | - | 30.3 | 69.7 | - | - | - |
| Total % | 26.0 | 12.8 | - | 38.9 | 26.8 | 24.2 | - | 51.0 | 3.1 | 7.1 | - | 10.1 | - |
| PHF | 0.963 | 0.870 | - | 0.973 | 0.890 | 0.960 | - | 0.933 | 0.833 | 0.885 | - | 0.892 | 0.975 |
| Lights | 333 | 166 | - | 499 | 347 | 312 | - | 659 | 40 | 91 | - | 131 | 1289 |
| % Lights | 98.2 | 99.4 | - | 98.6 | 99.4 | 99.0 | - | 99.2 | 100.0 | 98.9 | - | 99.2 | 99.0 |
| Other Vehicles | 6 | 1 | - | 7 | 2 | 3 | - | 5 | 0 | 1 | - | 1 | 13 |
| % Other Vehicles | 1.8 | 0.6 | - | 1.4 | 0.6 | 1.0 | - | 0.8 | 0.0 | 1.1 | - | 0.8 | 1.0 |
| Bicycles on Road | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - |

Counter:: MIO
Counted By:: RK
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Count Name: Eagle Road & West Rolling Road - AM/PM/SAT
Site Code:
Start Date: 03/21/2015
Page No: 8

| Fake Approach [SB] | | |
|---|---|---|
| Out | In | Total |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **0** | **0** | **0** |

| Eagle Road [EB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 352 | 499 | 851 | | | |
| | 3 | 7 | 10 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **355** | **506** | **861** | | | |
| P | 0 | 166 | 333 | | | |
| R | 0 | 1 | 6 | | | |
| T | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **0** | **167** | **339** | | | |

## Peak Hour Data

03/24/2015 16:45
Ending At
03/24/2015 17:45

Lights
Other Vehicles
Bicycles on Road
Pedestrians

| Eagle Road [WB] | | | | | | |
|---|---|---|---|---|---|---|
| | Out | In | Total | | | |
| | 424 | 659 | 1083 | | | |
| | 7 | 5 | 12 | | | |
| | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **431** | **664** | **1095** | | | |
| T | 312 | 0 | 0 | | | |
| L | 3 | 2 | 0 | | | |
| P | 0 | 0 | 0 | | | |
| | 0 | 0 | 0 | | | |
| | **315** | **349** | **0** | | | |

| L | R | P |
|---|---|---|
| 40 | 91 | 0 |
| 0 | 1 | 0 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **40** | **92** | **0** |

| | | |
|---|---|---|
| 513 | 131 | 644 |
| 3 | 1 | 4 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |
| **516** | **132** | **648** |
| Out | In | Total |
| West Rolling Road [NB] | | |

Turning Movement Peak Hour Data Plot (16:45)

# APPENDIX E

***ATR COUNTS***

***SPROUL ROAD***

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | 5 | 2 | 3 | 24 | 94 | 164 | 84 | 38 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 425 |
| 07:00 | 2 | 0 | 0 | 26 | 135 | 212 | 137 | 39 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 563 |
| 08:00 | 3 | 1 | 2 | 24 | 144 | 226 | 106 | 46 | 7 | 5 | 3 | 0 | 0 | 0 | 0 | 567 |
| 09:00 | 5 | 0 | 1 | 17 | 84 | 200 | 121 | 44 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 490 |
| 10:00 | 6 | 0 | 11 | 20 | 101 | 168 | 99 | 56 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 476 |
| 11:00 | 2 | 0 | 0 | 6 | 69 | 209 | 122 | 53 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 473 |
| 12 PM | 1 | 0 | 2 | 20 | 78 | 178 | 130 | 54 | 17 | 4 | 2 | 0 | 0 | 0 | 0 | 486 |
| 13:00 | 5 | 0 | 9 | 18 | 111 | 211 | 127 | 41 | 9 | 1 | 2 | 0 | 0 | 0 | 0 | 534 |
| 14:00 | 3 | 0 | 0 | 19 | 118 | 193 | 125 | 55 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 526 |
| 15:00 | 4 | 0 | 1 | 11 | 79 | 223 | 131 | 44 | 15 | 3 | 3 | 0 | 0 | 0 | 0 | 514 |
| 16:00 | 1 | 0 | 0 | 7 | 68 | 205 | 176 | 74 | 15 | 7 | 1 | 0 | 0 | 0 | 0 | 554 |
| 17:00 | 3 | 0 | 0 | 6 | 103 | 184 | 169 | 46 | 10 | 2 | 1 | 0 | 1 | 0 | 0 | 525 |
| 18:00 | 1 | 0 | 0 | 11 | 70 | 177 | 127 | 50 | 21 | 4 | 0 | 0 | 0 | 0 | 0 | 461 |
| 19:00 | 4 | 0 | 1 | 17 | 72 | 98 | 96 | 39 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 336 |
| 20:00 | 5 | 0 | 1 | 11 | 68 | 108 | 63 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 271 |
| 21:00 | 1 | 0 | 0 | 6 | 32 | 70 | 46 | 12 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 173 |
| 22:00 | 2 | 0 | 0 | 3 | 18 | 55 | 44 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 142 |
| 23:00 | 0 | 0 | 0 | 4 | 7 | 22 | 22 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 61 |
| Total | 53 | 3 | 31 | 250 | 1451 | 2903 | 1925 | 721 | 179 | 44 | 15 | 1 | 1 | 0 | 0 | 7577 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start | 1 | 21 | 26 | 31 | 36 | 41 | 46 | 51 | 56 | 61 | 66 | 71 | 76 | 77 | 78 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 76 | 77 | 9999 | Total |
| 09/03/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 0 | 3 | 8 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 01:00 | 0 | 0 | 0 | 2 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:00 | 18 | 0 | 2 | 3 | 4 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 04:00 | 0 | 0 | 0 | 2 | 8 | 9 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 05:00 | 0 | 0 | 0 | 2 | 24 | 39 | 32 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| 06:00 | 6 | 0 | 3 | 8 | 60 | 130 | 144 | 59 | 29 | 4 | 0 | 1 | 0 | 0 | 0 | 444 |
| 07:00 | 13 | 1 | 2 | 62 | 271 | 359 | 141 | 47 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 907 |
| 08:00 | 16 | 1 | 12 | 77 | 329 | 288 | 156 | 33 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 914 |
| 09:00 | 4 | 0 | 9 | 51 | 201 | 271 | 99 | 26 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 669 |
| 10:00 | 5 | 0 | 2 | 33 | 151 | 239 | 133 | 26 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 596 |
| 11:00 | 8 | 0 | 1 | 29 | 149 | 253 | 135 | 41 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 631 |
| 12 PM | 74 | 1 | 8 | 63 | 156 | 197 | 85 | 21 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 612 |
| 13:00 | 9 | 0 | 0 | 20 | 138 | 282 | 163 | 37 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 658 |
| 14:00 | 12 | 2 | 7 | 37 | 172 | 282 | 174 | 41 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 746 |
| 15:00 | 7 | 0 | 4 | 21 | 135 | 242 | 187 | 60 | 12 | 4 | 2 | 0 | 0 | 0 | 0 | 674 |
| 16:00 | 5 | 0 | 1 | 29 | 102 | 290 | 202 | 76 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 721 |
| 17:00 | 9 | 1 | 5 | 17 | 129 | 255 | 183 | 52 | 10 | 5 | 2 | 0 | 0 | 0 | 0 | 668 |
| 18:00 | 7 | 0 | 0 | 11 | 111 | 231 | 177 | 61 | 18 | 5 | 0 | 0 | 1 | 0 | 0 | 622 |
| 19:00 | 1 | 0 | 4 | 17 | 97 | 164 | 129 | 50 | 9 | 5 | 3 | 0 | 0 | 0 | 0 | 479 |
| 20:00 | 3 | 0 | 0 | 7 | 67 | 176 | 108 | 38 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 403 |
| 21:00 | 0 | 0 | 0 | 8 | 52 | 102 | 73 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 248 |
| 22:00 | 2 | 0 | 0 | 9 | 26 | 48 | 52 | 25 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 171 |
| 23:00 | 0 | 0 | 0 | 5 | 6 | 15 | 19 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| Total | 199 | 6 | 60 | 513 | 2394 | 3894 | 2408 | 740 | 165 | 49 | 8 | 2 | 1 | 0 | 1 | 10440 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/1 4 | 0 | 0 | 0 | 2 | 4 | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 01:00 | 0 | 0 | 0 | 1 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 03:00 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:00 | 0 | 0 | 0 | 1 | 7 | 10 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 |
| 05:00 | 2 | 0 | 0 | 1 | 28 | 42 | 26 | 14 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 117 |
| 06:00 | 7 | 0 | 1 | 8 | 76 | 156 | 124 | 58 | 18 | 3 | 1 | 1 | 0 | 0 | 0 | 453 |
| 07:00 | 7 | 0 | 4 | 44 | 247 | 381 | 134 | 38 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 862 |
| 08:00 | 12 | 0 | 14 | 71 | 270 | 332 | 150 | 26 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 887 |
| 09:00 | 2 | 0 | 0 | 13 | 145 | 271 | 125 | 52 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 614 |
| 10:00 | 8 | 0 | 2 | 12 | 52 | 97 | 61 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 253 |
| 11:00 | 15 | 2 | 4 | 14 | 17 | 35 | 7 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 98 |
| 12 PM | 8 | 2 | 10 | 22 | 53 | 68 | 46 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 232 |
| 13:00 | 3 | 0 | 5 | 18 | 144 | 219 | 137 | 32 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 575 |
| 14:00 | 4 | 0 | 1 | 20 | 178 | 295 | 147 | 41 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 699 |
| 15:00 | 6 | 0 | 3 | 35 | 112 | 257 | 158 | 57 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 646 |
| 16:00 | 7 | 0 | 0 | 11 | 106 | 277 | 190 | 73 | 21 | 4 | 1 | 0 | 0 | 0 | 0 | 690 |
| 17:00 | 5 | 0 | 0 | 5 | 85 | 274 | 200 | 86 | 20 | 5 | 2 | 0 | 0 | 0 | 0 | 682 |
| 18:00 | 5 | 0 | 3 | 14 | 105 | 215 | 186 | 60 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | 612 |
| 19:00 | 5 | 3 | 3 | 15 | 115 | 183 | 158 | 48 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 542 |
| 20:00 | 2 | 0 | 3 | 23 | 98 | 164 | 84 | 25 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 402 |
| 21:00 | 2 | 0 | 1 | 4 | 51 | 102 | 58 | 26 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 247 |
| 22:00 | 3 | 0 | 2 | 7 | 25 | 57 | 52 | 17 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 169 |
| 23:00 | 2 | 0 | 2 | 2 | 9 | 34 | 25 | 10 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 89 |
| Total | 105 | 7 | 58 | 344 | 1936 | 3489 | 2089 | 706 | 170 | 37 | 7 | 1 | 0 | 0 | 1 | 8950 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/1 4 | 0 | 0 | 0 | 1 | 1 | 19 | 16 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 01:00 | 0 | 1 | 0 | 0 | 3 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 02:00 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 0 | 0 | 0 | 3 | 6 | 10 | 5 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 05:00 | 0 | 0 | 0 | 1 | 26 | 45 | 25 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 111 |
| 06:00 | 7 | 1 | 0 | 7 | 81 | 141 | 118 | 36 | 26 | 3 | 2 | 1 | 0 | 0 | 0 | 423 |
| 07:00 | 12 | 0 | 1 | 45 | 280 | 315 | 131 | 25 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 820 |
| 08:00 | 4 | 0 | 3 | 68 | 255 | 297 | 130 | 51 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 816 |
| 09:00 | 4 | 2 | 8 | 42 | 195 | 204 | 111 | 31 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 610 |
| 10:00 | 13 | 0 | 8 | 31 | 108 | 220 | 119 | 28 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 539 |
| 11:00 | 12 | 1 | 7 | 37 | 132 | 248 | 135 | 33 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 615 |
| 12 PM | 19 | 5 | 13 | 101 | 210 | 250 | 81 | 22 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 707 |
| 13:00 | 16 | 3 | 26 | 73 | 237 | 263 | 67 | 19 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 711 |
| 14:00 | 5 | 1 | 1 | 34 | 187 | 253 | 131 | 50 | 14 | 1 | 1 | 0 | 0 | 0 | 0 | 678 |
| 15:00 | 9 | 0 | 0 | 15 | 114 | 231 | 215 | 76 | 24 | 2 | 1 | 0 | 0 | 0 | 0 | 687 |
| 16:00 | 2 | 0 | 5 | 20 | 131 | 278 | 167 | 73 | 22 | 5 | 0 | 0 | 0 | 0 | 0 | 703 |
| 17:00 | 5 | 1 | 3 | 18 | 101 | 246 | 186 | 57 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 635 |
| 18:00 | 5 | 0 | 1 | 8 | 81 | 209 | 154 | 66 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 541 |
| 19:00 | 6 | 1 | 2 | 8 | 97 | 195 | 113 | 44 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 474 |
| 20:00 | 2 | 0 | 1 | 8 | 89 | 163 | 92 | 21 | 7 | 1 | 1 | 1 | 0 | 0 | 0 | 386 |
| 21:00 | 3 | 1 | 1 | 9 | 47 | 115 | 69 | 17 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 267 |
| 22:00 | 0 | 0 | 1 | 10 | 44 | 120 | 63 | 25 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 270 |
| 23:00 | 0 | 0 | 0 | 1 | 26 | 43 | 24 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| Total | 124 | 17 | 81 | 540 | 2454 | 3878 | 2160 | 701 | 194 | 40 | 7 | 4 | 0 | 0 | 0 | 10200 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/1 4 | 1 | 0 | 1 | 4 | 7 | 28 | 16 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 01:00 | 0 | 0 | 0 | 0 | 5 | 7 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 02:00 | 0 | 0 | 0 | 1 | 4 | 5 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 03:00 | 1 | 0 | 1 | 0 | 1 | 3 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 04:00 | 0 | 0 | 0 | 1 | 1 | 6 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 05:00 | 0 | 0 | 0 | 2 | 9 | 18 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 06:00 | 2 | 0 | 1 | 3 | 21 | 46 | 54 | 19 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 157 |
| 07:00 | 1 | 1 | 2 | 4 | 45 | 91 | 74 | 37 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 271 |
| 08:00 | 6 | 0 | 1 | 3 | 55 | 167 | 129 | 63 | 15 | 4 | 0 | 0 | 0 | 0 | 1 | 444 |
| 09:00 | 8 | 0 | 0 | 14 | 129 | 238 | 196 | 59 | 10 | 5 | 0 | 0 | 0 | 0 | 1 | 660 |
| 10:00 | 8 | 0 | 0 | 22 | 152 | 294 | 217 | 69 | 14 | 3 | 2 | 1 | 0 | 0 | 0 | 782 |
| 11:00 | 11 | 0 | 3 | 7 | 133 | 359 | 277 | 78 | 27 | 3 | 1 | 0 | 0 | 0 | 0 | 899 |
| 12 PM | 95 | 20 | 35 | 42 | 184 | 298 | 149 | 39 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 876 |
| 13:00 | 12 | 0 | 1 | 27 | 145 | 351 | 256 | 85 | 17 | 6 | 1 | 0 | 0 | 0 | 0 | 901 |
| 14:00 | 12 | 8 | 14 | 32 | 157 | 347 | 243 | 72 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 901 |
| 15:00 | 12 | 0 | 7 | 48 | 215 | 345 | 191 | 70 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 909 |
| 16:00 | 10 | 0 | 1 | 57 | 216 | 352 | 187 | 56 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 895 |
| 17:00 | 6 | 0 | 1 | 29 | 161 | 318 | 162 | 46 | 14 | 1 | 4 | 0 | 0 | 0 | 0 | 742 |
| 18:00 | 2 | 0 | 1 | 9 | 106 | 320 | 176 | 60 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 690 |
| 19:00 | 3 | 0 | 0 | 5 | 51 | 143 | 93 | 36 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 343 |
| 20:00 | 6 | 0 | 0 | 5 | 95 | 178 | 92 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 395 |
| 21:00 | 1 | 0 | 0 | 8 | 57 | 113 | 55 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 247 |
| 22:00 | 0 | 0 | 0 | 9 | 69 | 95 | 59 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 252 |
| 23:00 | 0 | 0 | 0 | 3 | 29 | 48 | 32 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| Total | 197 | 29 | 69 | 335 | 2047 | 4170 | 2712 | 859 | 201 | 50 | 9 | 1 | 0 | 0 | 2 | 10681 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start | 1 | 21 | 26 | 31 | 36 | 41 | 46 | 51 | 56 | 61 | 66 | 71 | 76 | 77 | 78 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 76 | 77 | 9999 | Total |
| 09/07/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 2 | 6 | 24 | 17 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 01:00 | 0 | 0 | 0 | 2 | 6 | 14 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 02:00 | 0 | 0 | 0 | 0 | 4 | 6 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 19 |
| 03:00 | 0 | 0 | 0 | 1 | 1 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 04:00 | 0 | 0 | 0 | 0 | 2 | 4 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 05:00 | 0 | 0 | 0 | 0 | 5 | 6 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 06:00 | 1 | 1 | 0 | 2 | 17 | 23 | 33 | 31 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 122 |
| 07:00 | 2 | 0 | 1 | 4 | 18 | 37 | 53 | 39 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 164 |
| 08:00 | 1 | 0 | 1 | 4 | 35 | 100 | 84 | 37 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 268 |
| 09:00 | 1 | 0 | 0 | 4 | 41 | 154 | 136 | 58 | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 417 |
| 10:00 | 4 | 0 | 0 | 3 | 69 | 230 | 183 | 73 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | 579 |
| 11:00 | 4 | 0 | 2 | 14 | 100 | 271 | 280 | 71 | 19 | 4 | 1 | 0 | 0 | 0 | 0 | 766 |
| 12 PM | 8 | 0 | 0 | 9 | 90 | 361 | 272 | 104 | 26 | 7 | 1 | 0 | 0 | 0 | 0 | 878 |
| 13:00 | 41 | 0 | 3 | 17 | 83 | 364 | 277 | 95 | 29 | 6 | 2 | 0 | 0 | 0 | 0 | 917 |
| 14:00 | 29 | 0 | 0 | 20 | 110 | 416 | 232 | 60 | 25 | 4 | 0 | 0 | 0 | 0 | 0 | 896 |
| 15:00 | 390 | 0 | 6 | 24 | 111 | 320 | 256 | 100 | 30 | 7 | 0 | 1 | 0 | 0 | 0 | 1245 |
| 16:00 | 601 | 0 | 1 | 8 | 115 | 371 | 254 | 80 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 1453 |
| 17:00 | 502 | 0 | 0 | 10 | 113 | 309 | 220 | 90 | 24 | 6 | 2 | 0 | 0 | 0 | 0 | 1276 |
| 18:00 | 279 | 0 | 0 | 6 | 58 | 161 | 160 | 65 | 24 | 4 | 1 | 0 | 0 | 0 | 0 | 758 |
| 19:00 | 113 | 0 | 0 | 4 | 68 | 150 | 103 | 43 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 493 |
| 20:00 | 1 | 0 | 1 | 7 | 37 | 131 | 64 | 24 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 273 |
| 21:00 | 0 | 0 | 0 | 4 | 30 | 72 | 45 | 29 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 181 |
| 22:00 | 1 | 0 | 0 | 4 | 30 | 51 | 41 | 21 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 153 |
| 23:00 | 1 | 0 | 1 | 2 | 8 | 16 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| Total | 1979 | 1 | 16 | 151 | 1157 | 3591 | 2764 | 1042 | 278 | 54 | 14 | 2 | 0 | 0 | 0 | 11049 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 1 | 7 | 6 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 01:00 | 0 | 0 | 0 | 1 | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:00 | 0 | 0 | 0 | 1 | 0 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:00 | 0 | 0 | 0 | 0 | 4 | 16 | 10 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 05:00 | 2 | 0 | 1 | 5 | 22 | 44 | 47 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 06:00 | 18 | 0 | 0 | 11 | 64 | 141 | 124 | 53 | 22 | 8 | 3 | 1 | 0 | 0 | 0 | 445 |
| 07:00 | 15 | 0 | 4 | 46 | 278 | 367 | 162 | 40 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 921 |
| 08:00 | 20 | 0 | 15 | 94 | 280 | 369 | 142 | 35 | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 973 |
| 09:00 | 17 | 3 | 12 | 26 | 149 | 299 | 152 | 45 | 16 | 1 | 0 | 1 | 0 | 0 | 0 | 721 |
| 10:00 | 4 | 1 | 1 | 26 | 144 | 224 | 124 | 36 | 9 | 3 | 1 | 0 | 0 | 0 | 0 | 573 |
| 11:00 | 26 | 0 | 11 | 25 | 136 | 221 | 93 | 31 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 557 |
| 12 PM | 9 | 2 | 11 | 34 | 174 | 243 | 122 | 49 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 654 |
| 13:00 | 46 | 0 | 3 | 23 | 162 | 252 | 150 | 46 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 693 |
| 14:00 | 8 | 0 | 8 | 53 | 211 | 223 | 113 | 29 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 654 |
| 15:00 | 4 | 1 | 2 | 19 | 190 | 245 | 128 | 45 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 653 |
| 16:00 | 5 | 0 | 3 | 39 | 141 | 260 | 175 | 56 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 695 |
| 17:00 | 10 | 0 | 5 | 28 | 186 | 276 | 180 | 57 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 763 |
| 18:00 | 8 | 0 | 2 | 37 | 147 | 202 | 99 | 36 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 538 |
| 19:00 | 8 | 0 | 0 | 8 | 49 | 155 | 97 | 26 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 350 |
| 20:00 | 3 | 0 | 0 | 0 | 39 | 83 | 49 | 13 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 194 |
| 21:00 | 1 | 0 | 1 | 5 | 32 | 95 | 54 | 15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 207 |
| 22:00 | 1 | 0 | 0 | 3 | 25 | 77 | 43 | 19 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 176 |
| 23:00 | 1 | 0 | 0 | 2 | 6 | 24 | 30 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 69 |
| Total | 206 | 7 | 79 | 487 | 2451 | 3832 | 2107 | 656 | 188 | 36 | 9 | 2 | 0 | 0 | 0 | 10060 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/1 4 | 0 | 0 | 0 | 0 | 1 | 11 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 01:00 | 0 | 0 | 0 | 1 | 1 | 3 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:00 | 0 | 0 | 0 | 0 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 04:00 | 0 | 0 | 1 | 0 | 5 | 18 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 05:00 | 1 | 0 | 1 | 3 | 23 | 48 | 36 | 10 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 133 |
| 06:00 | 4 | 0 | 3 | 10 | 65 | 171 | 108 | 56 | 11 | 2 | 0 | 1 | 0 | 0 | 0 | 431 |
| 07:00 | 13 | 1 | 4 | 65 | 289 | 349 | 131 | 31 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 888 |
| 08:00 | 76 | 30 | 70 | 187 | 286 | 219 | 72 | 17 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 964 |
| 09:00 | 33 | 0 | 7 | 50 | 198 | 279 | 127 | 31 | 8 | 1 | 1 | 1 | 0 | 0 | 0 | 736 |
| 10:00 | 10 | 0 | 5 | 38 | 116 | 248 | 122 | 43 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 593 |
| 11:00 | 135 | 4 | 7 | 21 | 106 | 231 | 141 | 43 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 700 |
| 12 PM | 107 | 1 | 9 | 30 | 144 | 232 | 121 | 37 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 691 |
| 13:00 | 7 | 0 | 1 | 33 | 164 | 239 | 122 | 36 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 611 |
| 14:00 | 7 | 0 | 14 | 55 | 226 | 248 | 117 | 22 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 698 |
| 15:00 | 10 | 0 | 7 | 38 | 193 | 218 | 156 | 46 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 677 |
| 16:00 | 12 | 0 | 1 | 20 | 72 | 140 | 104 | 18 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 380 |
| 17:00 | 3 | 0 | 1 | 15 | 133 | 267 | 185 | 58 | 21 | 5 | 1 | 0 | 0 | 0 | 0 | 689 |
| 18:00 | 3 | 0 | 2 | 16 | 104 | 186 | 178 | 60 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 572 |
| 19:00 | 5 | 0 | 2 | 11 | 78 | 188 | 122 | 44 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 462 |
| 20:00 | 2 | 0 | 0 | 10 | 70 | 147 | 88 | 32 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 358 |
| 21:00 | 0 | 0 | 1 | 5 | 47 | 95 | 72 | 14 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 241 |
| 22:00 | 1 | 0 | 1 | 5 | 21 | 64 | 62 | 17 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 180 |
| 23:00 | 1 | 0 | 0 | 3 | 16 | 25 | 22 | 5 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 78 |
| Total | 430 | 36 | 137 | 616 | 2361 | 3632 | 2106 | 634 | 174 | 32 | 5 | 3 | 0 | 0 | 0 | 10166 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 0 | 0 | 0 | 1 | 4 | 9 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 22 |
| 01:00 | 0 | 0 | 0 | 0 | 3 | 7 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 |
| 02:00 | 3 | 0 | 1 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 3 | 0 | 1 | 3 | 12 | 18 | 6 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 51 |
| Grand Total | 3296 | 106 | 532 | 3239 | 16263 | 29407 | 18277 | 6063 | 1551 | 344 | 74 | 16 | 2 | 0 | 4 | 79174 |

Stats

| | |
|---|---|
| 15th Percentile : | 34 MPH |
| 50th Percentile : | 42 MPH |
| 85th Percentile : | 48 MPH |
| 95th Percentile : | 53 MPH |
| Mean Speed(Average) : | 41 MPH |
| 10 MPH Pace Speed : | 39-48 MPH |
| Number in Pace : | 44429 |
| Percent in Pace : | 56.1% |
| Number of Vehicles > 55 MPH : | 1991 |
| Percent of Vehicles > 55 MPH : | 2.5% |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | 25 | 0 | 1 | 12 | 32 | 120 | 130 | 50 | 16 | 4 | 1 | 0 | 0 | 0 | 0 | 391 |
| 07:00 | 610 | 3 | 0 | 2 | 6 | 17 | 63 | 24 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 738 |
| 08:00 | 652 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 654 |
| 09:00 | 450 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 452 |
| 10:00 | 434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 435 |
| 11:00 | 419 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 420 |
| 12 PM | 477 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 478 |
| 13:00 | 454 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 456 |
| 14:00 | 472 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 475 |
| 15:00 | 480 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 482 |
| 16:00 | 477 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 477 |
| 17:00 | 504 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 508 |
| 18:00 | 428 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 429 |
| 19:00 | 349 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 351 |
| 20:00 | 246 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 21:00 | 161 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 |
| 22:00 | 135 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| 23:00 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| Total | 6839 | 8 | 3 | 14 | 39 | 141 | 198 | 79 | 24 | 8 | 3 | 0 | 0 | 0 | 0 | 7356 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/1 4 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 01:00 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 02:00 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:00 | 11 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 04:00 | 0 | 0 | 0 | 0 | 5 | 8 | 12 | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 34 |
| 05:00 | 2 | 0 | 0 | 0 | 6 | 20 | 32 | 25 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 06:00 | 23 | 0 | 0 | 3 | 16 | 72 | 182 | 107 | 31 | 8 | 0 | 0 | 0 | 0 | 0 | 442 |
| 07:00 | 56 | 0 | 0 | 12 | 82 | 294 | 353 | 90 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 907 |
| 08:00 | 60 | 1 | 3 | 24 | 158 | 315 | 274 | 66 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 913 |
| 09:00 | 34 | 0 | 5 | 11 | 52 | 180 | 206 | 55 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 550 |
| 10:00 | 31 | 0 | 1 | 8 | 47 | 143 | 159 | 66 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 471 |
| 11:00 | 37 | 0 | 0 | 3 | 31 | 140 | 175 | 107 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 519 |
| 12 PM | 106 | 8 | 2 | 12 | 49 | 145 | 125 | 55 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 516 |
| 13:00 | 39 | 0 | 0 | 6 | 17 | 142 | 191 | 97 | 20 | 2 | 1 | 0 | 0 | 0 | 0 | 515 |
| 14:00 | 57 | 0 | 1 | 2 | 36 | 158 | 209 | 113 | 34 | 7 | 3 | 0 | 0 | 0 | 0 | 620 |
| 15:00 | 43 | 0 | 1 | 6 | 23 | 100 | 229 | 112 | 42 | 5 | 1 | 0 | 0 | 0 | 0 | 562 |
| 16:00 | 43 | 0 | 0 | 0 | 7 | 69 | 221 | 198 | 44 | 7 | 2 | 0 | 0 | 0 | 0 | 591 |
| 17:00 | 30 | 1 | 0 | 3 | 24 | 100 | 216 | 140 | 29 | 5 | 0 | 0 | 0 | 0 | 0 | 548 |
| 18:00 | 29 | 0 | 0 | 1 | 7 | 53 | 161 | 137 | 48 | 3 | 1 | 1 | 0 | 0 | 0 | 441 |
| 19:00 | 18 | 0 | 0 | 0 | 17 | 71 | 134 | 98 | 29 | 3 | 1 | 0 | 0 | 0 | 0 | 371 |
| 20:00 | 15 | 0 | 0 | 0 | 16 | 92 | 136 | 62 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 331 |
| 21:00 | 6 | 0 | 0 | 1 | 12 | 68 | 80 | 25 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 200 |
| 22:00 | 1 | 0 | 0 | 2 | 14 | 44 | 54 | 13 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 139 |
| 23:00 | 2 | 0 | 0 | 1 | 8 | 15 | 18 | 10 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 57 |
| Total | 703 | 10 | 13 | 95 | 627 | 2230 | 3168 | 1581 | 396 | 55 | 13 | 1 | 0 | 0 | 0 | 8892 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 0 | 0 | 14 | 10 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 01:00 | 0 | 0 | 0 | 0 | 5 | 5 | 4 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| 02:00 | 0 | 0 | 0 | 1 | 2 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 03:00 | 0 | 0 | 0 | 0 | 2 | 1 | 9 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| 04:00 | 1 | 0 | 0 | 0 | 3 | 8 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 05:00 | 5 | 0 | 0 | 2 | 5 | 16 | 37 | 19 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 94 |
| 06:00 | 25 | 0 | 0 | 2 | 28 | 73 | 163 | 108 | 42 | 14 | 1 | 0 | 0 | 0 | 0 | 456 |
| 07:00 | 61 | 1 | 3 | 8 | 65 | 371 | 296 | 72 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 887 |
| 08:00 | 76 | 0 | 0 | 8 | 115 | 272 | 300 | 103 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 886 |
| 09:00 | 27 | 0 | 0 | 1 | 28 | 165 | 213 | 95 | 30 | 2 | 0 | 0 | 0 | 0 | 0 | 561 |
| 10:00 | 15 | 4 | 29 | 88 | 229 | 263 | 144 | 34 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 810 |
| 11:00 | 26 | 25 | 85 | 169 | 315 | 265 | 134 | 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1046 |
| 12 PM | 54 | 34 | 34 | 91 | 195 | 255 | 187 | 61 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 920 |
| 13:00 | 38 | 1 | 0 | 7 | 38 | 147 | 202 | 95 | 21 | 7 | 0 | 0 | 0 | 0 | 0 | 556 |
| 14:00 | 32 | 0 | 0 | 6 | 50 | 194 | 245 | 108 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 653 |
| 15:00 | 43 | 0 | 2 | 2 | 28 | 132 | 182 | 109 | 35 | 2 | 0 | 0 | 0 | 0 | 1 | 536 |
| 16:00 | 36 | 0 | 1 | 0 | 4 | 87 | 185 | 205 | 53 | 11 | 1 | 1 | 0 | 0 | 0 | 584 |
| 17:00 | 34 | 0 | 0 | 1 | 12 | 66 | 202 | 192 | 50 | 10 | 0 | 0 | 0 | 0 | 0 | 567 |
| 18:00 | 33 | 0 | 1 | 1 | 18 | 62 | 167 | 140 | 36 | 7 | 3 | 0 | 0 | 0 | 0 | 468 |
| 19:00 | 18 | 0 | 1 | 6 | 14 | 95 | 142 | 85 | 18 | 2 | 0 | 1 | 0 | 0 | 0 | 382 |
| 20:00 | 8 | 0 | 0 | 1 | 27 | 100 | 148 | 36 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 334 |
| 21:00 | 7 | 0 | 0 | 4 | 12 | 67 | 63 | 49 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 216 |
| 22:00 | 5 | 0 | 0 | 0 | 15 | 37 | 54 | 31 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 149 |
| 23:00 | 0 | 1 | 0 | 2 | 9 | 16 | 26 | 22 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 82 |
| Total | 544 | 66 | 156 | 400 | 1219 | 2715 | 3129 | 1603 | 376 | 76 | 7 | 5 | 0 | 0 | 1 | 10297 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/1 4 | 0 | 0 | 0 | 0 | 3 | 10 | 13 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 01:00 | 0 | 1 | 0 | 0 | 2 | 6 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| 02:00 | 0 | 0 | 0 | 1 | 2 | 7 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 17 |
| 04:00 | 0 | 0 | 0 | 1 | 1 | 10 | 11 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 05:00 | 1 | 0 | 0 | 0 | 12 | 30 | 37 | 22 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 110 |
| 06:00 | 19 | 0 | 0 | 0 | 14 | 92 | 167 | 90 | 36 | 8 | 1 | 1 | 0 | 0 | 0 | 428 |
| 07:00 | 58 | 0 | 2 | 12 | 121 | 332 | 264 | 77 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 878 |
| 08:00 | 60 | 0 | 0 | 16 | 87 | 296 | 271 | 96 | 17 | 0 | 1 | 1 | 0 | 0 | 0 | 845 |
| 09:00 | 36 | 0 | 0 | 4 | 46 | 147 | 168 | 68 | 18 | 3 | 1 | 2 | 0 | 0 | 0 | 493 |
| 10:00 | 34 | 0 | 3 | 5 | 42 | 112 | 163 | 102 | 22 | 11 | 1 | 0 | 0 | 0 | 0 | 495 |
| 11:00 | 44 | 4 | 5 | 11 | 41 | 127 | 170 | 70 | 21 | 4 | 2 | 0 | 0 | 0 | 0 | 499 |
| 12 PM | 47 | 14 | 12 | 31 | 65 | 159 | 143 | 51 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 536 |
| 13:00 | 35 | 6 | 7 | 13 | 91 | 206 | 146 | 48 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 565 |
| 14:00 | 33 | 0 | 0 | 3 | 49 | 137 | 208 | 102 | 28 | 10 | 3 | 0 | 0 | 0 | 0 | 573 |
| 15:00 | 34 | 0 | 0 | 0 | 23 | 111 | 196 | 125 | 42 | 11 | 2 | 0 | 0 | 0 | 0 | 544 |
| 16:00 | 44 | 0 | 0 | 0 | 17 | 100 | 205 | 132 | 33 | 7 | 5 | 0 | 0 | 0 | 0 | 543 |
| 17:00 | 28 | 0 | 0 | 4 | 12 | 81 | 186 | 138 | 33 | 2 | 2 | 0 | 0 | 0 | 1 | 487 |
| 18:00 | 31 | 0 | 0 | 1 | 14 | 88 | 147 | 136 | 41 | 7 | 1 | 0 | 0 | 0 | 0 | 466 |
| 19:00 | 23 | 0 | 1 | 2 | 14 | 79 | 155 | 114 | 21 | 3 | 1 | 0 | 0 | 0 | 0 | 413 |
| 20:00 | 10 | 0 | 0 | 1 | 11 | 101 | 126 | 48 | 12 | 3 | 0 | 1 | 0 | 0 | 0 | 313 |
| 21:00 | 4 | 0 | 0 | 2 | 22 | 72 | 93 | 51 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 259 |
| 22:00 | 16 | 0 | 0 | 0 | 21 | 64 | 74 | 47 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 229 |
| 23:00 | 0 | 0 | 0 | 1 | 8 | 26 | 27 | 19 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| Total | 557 | 25 | 30 | 108 | 718 | 2396 | 2985 | 1562 | 399 | 82 | 20 | 6 | 0 | 0 | 1 | 8889 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/1 4 | 1 | 0 | 0 | 0 | 7 | 16 | 22 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 01:00 | 1 | 0 | 0 | 0 | 4 | 10 | 10 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 32 |
| 02:00 | 0 | 0 | 0 | 1 | 4 | 3 | 8 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 04:00 | 0 | 0 | 0 | 0 | 3 | 5 | 11 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 26 |
| 05:00 | 0 | 0 | 0 | 2 | 5 | 15 | 14 | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 45 |
| 06:00 | 3 | 0 | 0 | 2 | 4 | 25 | 57 | 48 | 35 | 7 | 2 | 0 | 0 | 0 | 0 | 183 |
| 07:00 | 11 | 1 | 0 | 0 | 13 | 48 | 104 | 53 | 23 | 8 | 1 | 0 | 0 | 0 | 0 | 262 |
| 08:00 | 13 | 0 | 0 | 1 | 26 | 99 | 170 | 122 | 33 | 6 | 1 | 0 | 0 | 0 | 0 | 471 |
| 09:00 | 43 | 1 | 4 | 7 | 28 | 152 | 263 | 129 | 28 | 4 | 0 | 0 | 0 | 0 | 0 | 659 |
| 10:00 | 58 | 0 | 0 | 2 | 37 | 185 | 246 | 158 | 33 | 8 | 2 | 0 | 0 | 0 | 0 | 729 |
| 11:00 | 85 | 2 | 2 | 1 | 27 | 166 | 297 | 187 | 32 | 9 | 1 | 0 | 0 | 0 | 0 | 809 |
| 12 PM | 108 | 22 | 19 | 35 | 75 | 198 | 217 | 113 | 25 | 4 | 3 | 0 | 0 | 0 | 0 | 819 |
| 13:00 | 60 | 3 | 8 | 7 | 53 | 151 | 274 | 193 | 46 | 5 | 0 | 0 | 0 | 0 | 0 | 800 |
| 14:00 | 71 | 1 | 5 | 25 | 67 | 160 | 261 | 175 | 44 | 6 | 1 | 0 | 0 | 0 | 0 | 816 |
| 15:00 | 52 | 0 | 1 | 5 | 60 | 212 | 306 | 157 | 33 | 3 | 1 | 0 | 0 | 0 | 0 | 830 |
| 16:00 | 46 | 0 | 0 | 6 | 57 | 246 | 238 | 119 | 26 | 1 | 0 | 0 | 0 | 0 | 0 | 739 |
| 17:00 | 33 | 0 | 0 | 5 | 37 | 156 | 257 | 124 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 643 |
| 18:00 | 38 | 0 | 1 | 1 | 24 | 129 | 219 | 134 | 40 | 3 | 0 | 0 | 0 | 0 | 0 | 589 |
| 19:00 | 10 | 2 | 4 | 18 | 65 | 118 | 111 | 101 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 452 |
| 20:00 | 7 | 0 | 0 | 0 | 17 | 88 | 139 | 58 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 318 |
| 21:00 | 9 | 0 | 1 | 4 | 23 | 72 | 63 | 27 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 207 |
| 22:00 | 7 | 0 | 2 | 6 | 31 | 74 | 70 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 209 |
| 23:00 | 1 | 0 | 0 | 1 | 14 | 34 | 43 | 17 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 114 |
| Total | 657 | 32 | 47 | 129 | 681 | 2365 | 3408 | 1957 | 479 | 76 | 15 | 1 | 0 | 0 | 0 | 9847 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/1 4 | 1 | 0 | 0 | 1 | 3 | 20 | 27 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 61 |
| 01:00 | 0 | 0 | 0 | 2 | 5 | 13 | 12 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 02:00 | 0 | 0 | 0 | 1 | 2 | 7 | 12 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 04:00 | 0 | 0 | 0 | 0 | 4 | 3 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 |
| 05:00 | 0 | 0 | 0 | 0 | 4 | 6 | 15 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 06:00 | 2 | 1 | 0 | 1 | 5 | 23 | 28 | 27 | 20 | 8 | 1 | 0 | 0 | 1 | 0 | 117 |
| 07:00 | 3 | 0 | 0 | 0 | 6 | 17 | 43 | 47 | 15 | 6 | 2 | 0 | 0 | 0 | 0 | 139 |
| 08:00 | 8 | 0 | 0 | 3 | 18 | 76 | 92 | 55 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 271 |
| 09:00 | 20 | 0 | 0 | 2 | 19 | 72 | 147 | 83 | 22 | 1 | 2 | 0 | 0 | 1 | 0 | 369 |
| 10:00 | 27 | 0 | 0 | 4 | 18 | 112 | 215 | 118 | 36 | 8 | 2 | 1 | 0 | 1 | 0 | 542 |
| 11:00 | 58 | 0 | 0 | 9 | 34 | 150 | 261 | 160 | 25 | 5 | 2 | 0 | 0 | 0 | 0 | 704 |
| 12 PM | 55 | 0 | 0 | 0 | 24 | 126 | 296 | 188 | 43 | 6 | 2 | 0 | 0 | 0 | 0 | 740 |
| 13:00 | 53 | 0 | 0 | 2 | 17 | 125 | 285 | 202 | 35 | 7 | 2 | 0 | 0 | 0 | 0 | 728 |
| 14:00 | 75 | 0 | 0 | 3 | 46 | 137 | 293 | 165 | 49 | 8 | 1 | 0 | 0 | 0 | 0 | 777 |
| 15:00 | 37 | 0 | 0 | 2 | 15 | 96 | 207 | 151 | 58 | 12 | 3 | 1 | 0 | 0 | 0 | 582 |
| 16:00 | 35 | 0 | 0 | 0 | 11 | 94 | 183 | 125 | 51 | 4 | 0 | 0 | 0 | 0 | 0 | 503 |
| 17:00 | 26 | 0 | 0 | 2 | 14 | 54 | 164 | 125 | 47 | 7 | 1 | 1 | 0 | 0 | 0 | 441 |
| 18:00 | 20 | 0 | 0 | 0 | 8 | 62 | 102 | 112 | 39 | 5 | 0 | 0 | 0 | 0 | 0 | 348 |
| 19:00 | 9 | 0 | 0 | 1 | 8 | 57 | 105 | 55 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 254 |
| 20:00 | 3 | 0 | 0 | 3 | 19 | 70 | 81 | 36 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 223 |
| 21:00 | 5 | 0 | 0 | 1 | 6 | 42 | 68 | 33 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 168 |
| 22:00 | 2 | 0 | 0 | 2 | 12 | 39 | 42 | 22 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 128 |
| 23:00 | 0 | 0 | 0 | 0 | 3 | 14 | 19 | 11 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 51 |
| Total | 439 | 1 | 0 | 39 | 302 | 1418 | 2703 | 1739 | 510 | 88 | 21 | 5 | 0 | 3 | 0 | 7268 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/1 4 | 0 | 0 | 0 | 0 | 3 | 7 | 9 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 01:00 | 0 | 0 | 0 | 0 | 1 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 3 | 4 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 03:00 | 0 | 0 | 0 | 0 | 2 | 4 | 9 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 04:00 | 0 | 0 | 0 | 0 | 3 | 8 | 11 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 05:00 | 2 | 0 | 0 | 0 | 2 | 12 | 38 | 24 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 83 |
| 06:00 | 24 | 0 | 0 | 0 | 15 | 86 | 121 | 107 | 43 | 9 | 3 | 0 | 0 | 0 | 1 | 409 |
| 07:00 | 76 | 0 | 0 | 3 | 100 | 294 | 359 | 109 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 955 |
| 08:00 | 70 | 0 | 0 | 15 | 105 | 342 | 339 | 101 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 993 |
| 09:00 | 35 | 0 | 0 | 2 | 30 | 160 | 243 | 99 | 32 | 5 | 1 | 0 | 0 | 1 | 0 | 608 |
| 10:00 | 24 | 2 | 1 | 3 | 52 | 142 | 133 | 79 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 450 |
| 11:00 | 26 | 0 | 1 | 8 | 27 | 117 | 158 | 70 | 20 | 1 | 1 | 0 | 0 | 0 | 0 | 429 |
| 12 PM | 31 | 0 | 0 | 10 | 26 | 127 | 189 | 88 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 496 |
| 13:00 | 22 | 0 | 0 | 1 | 48 | 149 | 152 | 86 | 18 | 4 | 1 | 0 | 0 | 0 | 0 | 481 |
| 14:00 | 37 | 0 | 2 | 5 | 55 | 170 | 181 | 72 | 21 | 3 | 1 | 0 | 0 | 0 | 0 | 547 |
| 15:00 | 38 | 0 | 0 | 2 | 37 | 113 | 189 | 121 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 531 |
| 16:00 | 44 | 0 | 0 | 9 | 29 | 127 | 225 | 113 | 23 | 4 | 2 | 0 | 0 | 0 | 0 | 576 |
| 17:00 | 38 | 0 | 1 | 1 | 24 | 135 | 216 | 115 | 46 | 4 | 0 | 0 | 0 | 0 | 0 | 580 |
| 18:00 | 18 | 0 | 0 | 5 | 31 | 114 | 166 | 92 | 25 | 1 | 0 | 1 | 0 | 0 | 0 | 453 |
| 19:00 | 14 | 6 | 21 | 48 | 76 | 74 | 110 | 59 | 23 | 2 | 2 | 0 | 0 | 0 | 0 | 435 |
| 20:00 | 7 | 1 | 32 | 56 | 89 | 101 | 80 | 26 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 397 |
| 21:00 | 5 | 0 | 0 | 3 | 16 | 56 | 64 | 36 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 189 |
| 22:00 | 6 | 0 | 0 | 1 | 10 | 32 | 49 | 35 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 145 |
| 23:00 | 0 | 0 | 0 | 2 | 4 | 20 | 39 | 10 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 82 |
| Total | 517 | 9 | 58 | 174 | 788 | 2399 | 3088 | 1461 | 377 | 53 | 16 | 3 | 0 | 1 | 1 | 8945 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/1 4 | 1 | 0 | 0 | 0 | 4 | 12 | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 01:00 | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 0 | 0 | 4 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 04:00 | 0 | 0 | 0 | 0 | 5 | 12 | 10 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 05:00 | 3 | 0 | 0 | 0 | 7 | 24 | 33 | 26 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 06:00 | 33 | 0 | 1 | 3 | 34 | 77 | 140 | 89 | 36 | 9 | 1 | 0 | 0 | 0 | 0 | 423 |
| 07:00 | 74 | 0 | 7 | 8 | 123 | 351 | 307 | 47 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 933 |
| 08:00 | 88 | 20 | 57 | 72 | 178 | 278 | 155 | 62 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 923 |
| 09:00 | 44 | 0 | 1 | 4 | 58 | 143 | 193 | 110 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 575 |
| 10:00 | 21 | 0 | 0 | 4 | 43 | 112 | 156 | 85 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 448 |
| 11:00 | 36 | 8 | 2 | 8 | 39 | 125 | 138 | 62 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 440 |
| 12 PM | 32 | 0 | 1 | 3 | 18 | 84 | 161 | 86 | 17 | 6 | 0 | 0 | 0 | 0 | 1 | 409 |
| 13:00 | 32 | 0 | 0 | 9 | 56 | 143 | 145 | 68 | 16 | 4 | 2 | 0 | 0 | 0 | 0 | 475 |
| 14:00 | 43 | 0 | 0 | 4 | 41 | 183 | 202 | 80 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 574 |
| 15:00 | 31 | 0 | 0 | 1 | 39 | 140 | 204 | 105 | 32 | 5 | 2 | 0 | 0 | 0 | 0 | 559 |
| 16:00 | 27 | 37 | 87 | 122 | 159 | 216 | 174 | 60 | 18 | 3 | 1 | 0 | 0 | 0 | 0 | 904 |
| 17:00 | 53 | 0 | 0 | 3 | 15 | 126 | 209 | 128 | 25 | 8 | 5 | 0 | 0 | 0 | 0 | 572 |
| 18:00 | 21 | 0 | 2 | 6 | 11 | 95 | 173 | 134 | 28 | 4 | 1 | 0 | 0 | 0 | 0 | 475 |
| 19:00 | 15 | 0 | 0 | 2 | 18 | 83 | 132 | 74 | 20 | 1 | 2 | 2 | 0 | 1 | 0 | 350 |
| 20:00 | 13 | 0 | 0 | 1 | 14 | 77 | 115 | 35 | 6 | 1 | 3 | 1 | 0 | 0 | 0 | 266 |
| 21:00 | 8 | 0 | 0 | 1 | 11 | 55 | 83 | 40 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 208 |
| 22:00 | 3 | 0 | 0 | 1 | 5 | 41 | 74 | 36 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 173 |
| 23:00 | 2 | 0 | 0 | 1 | 11 | 20 | 24 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 73 |
| Total | 580 | 65 | 158 | 253 | 895 | 2412 | 2847 | 1359 | 344 | 57 | 17 | 3 | 0 | 1 | 1 | 8992 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Nb
Location: 0.4 mi N of Springfield Rd
Counter: 22603
Weather: Clear

Site Code: 0902141
Station ID:
NB

Latitude: 39' 95220.0000 North

Nb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 76 | 77 77 | 78 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 1 | 0 | 0 | 0 | 2 | 9 | 12 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 34 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 3 | 0 | 1 | 1 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 4 | 0 | 1 | 1 | 6 | 11 | 17 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 57 |
| Grand Total | 10840 | 216 | 466 | 1213 | 5275 | 16087 | 21543 | 11354 | 2908 | 496 | 112 | 24 | 0 | 5 | 4 | 70543 |

Stats

| | |
|---|---|
| 15th Percentile : | 10 MPH |
| 50th Percentile : | 43 MPH |
| 85th Percentile : | 51 MPH |
| 95th Percentile : | 55 MPH |
| Mean Speed(Average) : | 36 MPH |
| 10 MPH Pace Speed : | 42-51 MPH |
| Number in Pace : | 29817 |
| Percent in Pace : | 42.3% |
| Number of Vehicles > 55 MPH : | 3549 |
| Percent of Vehicles > 55 MPH : | 5.0% |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | **5** | 19 | 104 | 238 | **178** | **54** | 7 | **4** | **1** | 0 | 0 | 0 | 0 | 0 | 610 | 45-54 | 365 |
| 08:00 | 5 | 22 | 117 | 252 | 166 | 44 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 615 | 44-53 | 370 |
| 09:00 | 4 | **29** | **164** | **308** | 130 | 31 | 3 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | **670** | 43-52 | 424 |
| 10:00 | 5 | 15 | 132 | 263 | 176 | 41 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 640 | 44-53 | 399 |
| 11:00 | 5 | 26 | 122 | 272 | 170 | 50 | **11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 657 | 44-53 | 391 |
| 12 PM | 21 | 28 | 157 | 299 | 170 | 40 | 5 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 722 | 44-53 | 407 |
| 13:00 | 1 | 27 | 194 | 302 | 173 | **48** | **10** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 756 | 43-52 | 461 |
| 14:00 | 10 | 43 | 160 | 303 | **184** | 46 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 754 | 44-53 | 425 |
| 15:00 | 22 | 111 | 298 | 326 | 138 | 43 | 3 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 943 | 41-50 | 466 |
| 16:00 | **29** | **158** | 367 | **418** | 141 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1142** | 41-50 | 568 |
| 17:00 | 11 | 107 | **415** | 384 | 172 | 38 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1131 | 41-50 | 630 |
| 18:00 | 8 | 38 | 221 | 402 | 145 | 36 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 855 | 43-52 | 542 |
| 19:00 | 6 | 60 | 127 | 235 | 122 | 23 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 577 | 43-52 | 304 |
| 20:00 | 2 | 35 | 103 | 133 | 64 | 15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 42-51 | 191 |
| 21:00 | 0 | 8 | 58 | 89 | 46 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 221 | 43-52 | 135 |
| 22:00 | 1 | 3 | 24 | 49 | 30 | 9 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 118 | 44-53 | 72 |
| 23:00 | 2 | 3 | 15 | 31 | 22 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 44-53 | 45 |
| Total | 137 | 732 | 2778 | 4304 | 2227 | 568 | 75 | 18 | 2 | 2 | 1 | 0 | 0 | 0 | 10844 | | |
| Percent | 1.3% | 6.8% | 25.6% | 39.7% | 20.5% | 5.2% | 0.7% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 09:00 | 09:00 | 09:00 | 07:00 | 07:00 | 11:00 | 07:00 | 07:00 | | 09:00 | | | | 09:00 | | |
| Vol. | 5 | 29 | 164 | 308 | 178 | 54 | 11 | 4 | 1 | | 1 | | | | 670 | | |
| PM Peak | 16:00 | 16:00 | 17:00 | 16:00 | 14:00 | 13:00 | 13:00 | 12:00 | 22:00 | 15:00 | | | | | 16:00 | | |
| Vol. | 29 | 158 | 415 | 418 | 184 | 48 | 10 | 2 | 1 | 1 | | | | | 1142 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/14 | 0 | 1 | 3 | 9 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 47-56 | 15 |
| 01:00 | 0 | 0 | 5 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 41-50 | 6 |
| 02:00 | 0 | 2 | 5 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 39-48 | 7 |
| 03:00 | 0 | 4 | 2 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 31-40 | 5 |
| 04:00 | 0 | 1 | 6 | 9 | 8 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 46-55 | 15 |
| 05:00 | 0 | 4 | 14 | 35 | 39 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 47-56 | 67 |
| 06:00 | 1 | 5 | 33 | 107 | 95 | **59** | **14** | **4** | 1 | 0 | 0 | 0 | 0 | 0 | 319 | 46-55 | 183 |
| 07:00 | 11 | 29 | 132 | 229 | **182** | 52 | 12 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 650 | 45-54 | 352 |
| 08:00 | 4 | 27 | 135 | 274 | 149 | 30 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 628 | 44-53 | 386 |
| 09:00 | 16 | **84** | **277** | 232 | 84 | 26 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 722 | 41-50 | 379 |
| 10:00 | 6 | 32 | 193 | **316** | 120 | 20 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 693 | 42-51 | 439 |
| 11:00 | **52** | 75 | 228 | 249 | 126 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **753** | 42-51 | 332 |
| 12 PM | 209 | 149 | 197 | 193 | 63 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 823 | 16-25 | 199 |
| 13:00 | 38 | 28 | 211 | 350 | 169 | 31 | **9** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 837 | 43-52 | 462 |
| 14:00 | 6 | 57 | 242 | 292 | 158 | 44 | 7 | **6** | 0 | 0 | 0 | 0 | 0 | 0 | 812 | 42-51 | 448 |
| 15:00 | 9 | 71 | 334 | 338 | 126 | **53** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 934 | 41-50 | 539 |
| 16:00 | 109 | **203** | **385** | 331 | 155 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1209** | 40-49 | 449 |
| 17:00 | **396** | 137 | 261 | 209 | 75 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1087 | 15-24 | 322 |
| 18:00 | 22 | 65 | 234 | **359** | **211** | 46 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 940 | 43-52 | 499 |
| 19:00 | 4 | 13 | 158 | 289 | 148 | 24 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 641 | 43-52 | 423 |
| 20:00 | 5 | 13 | 122 | 189 | 84 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | 43-52 | 275 |
| 21:00 | 0 | 11 | 60 | 112 | 48 | 12 | 7 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 251 | 43-52 | 157 |
| 22:00 | 2 | 1 | 29 | 44 | 38 | 15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 133 | 45-54 | 75 |
| 23:00 | 0 | 4 | 15 | 32 | 15 | 9 | 4 | 0 | 1 | **1** | 0 | 0 | 0 | 0 | 81 | 43-52 | 44 |
| Total | 890 | 1016 | 3281 | 4208 | 2105 | 537 | 96 | 18 | 6 | 1 | 0 | 0 | 0 | 0 | 12158 | | |
| Percent | 7.3% | 8.4% | 27.0% | 34.6% | 17.3% | 4.4% | 0.8% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 09:00 | 09:00 | 10:00 | 07:00 | 06:00 | 06:00 | 06:00 | 07:00 | | | | | | 11:00 | | |
| Vol. | 52 | 84 | 277 | 316 | 182 | 59 | 14 | 4 | 2 | | | | | | 753 | | |
| PM Peak | 17:00 | 16:00 | 16:00 | 18:00 | 18:00 | 15:00 | 13:00 | 14:00 | 21:00 | 23:00 | | | | | 16:00 | | |
| Vol. | 396 | 203 | 385 | 359 | 211 | 53 | 9 | 6 | 1 | 1 | | | | | 1209 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/14 | 1 | 0 | 8 | 11 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 43-52 | 16 |
| 01:00 | 1 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 41-50 | 7 |
| 02:00 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 44-53 | 2 |
| 03:00 | 2 | 2 | 3 | 3 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 49-58 | 6 |
| 04:00 | 0 | 2 | 6 | 14 | 4 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 43-52 | 18 |
| 05:00 | 0 | 2 | 19 | 36 | 38 | 20 | 7 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 124 | 46-55 | 68 |
| 06:00 | 0 | 7 | 29 | 85 | 108 | 51 | **16** | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 47-56 | 176 |
| 07:00 | 1 | 27 | 146 | 271 | **167** | **52** | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 671 | 44-53 | 404 |
| 08:00 | 8 | 38 | **177** | 287 | 114 | 40 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 671 | 43-52 | 392 |
| 09:00 | 9 | 27 | 166 | 289 | 126 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 642 | 43-52 | 398 |
| 10:00 | 9 | 32 | 171 | 266 | 115 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 616 | 43-52 | 371 |
| 11:00 | **25** | **48** | 173 | **302** | 118 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **687** | 43-52 | 375 |
| 12 PM | 11 | 51 | 211 | 295 | 146 | 26 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 743 | 42-51 | 420 |
| 13:00 | 16 | 66 | 200 | 302 | 138 | 20 | **7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 749 | 42-51 | 401 |
| 14:00 | 27 | 51 | 243 | 294 | 123 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 771 | 42-51 | 416 |
| 15:00 | **184** | 124 | 277 | 223 | 102 | 27 | 5 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 944 | 40-49 | 269 |
| 16:00 | 176 | **256** | 357 | 264 | 87 | 24 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1169 | 39-48 | 353 |
| 17:00 | 66 | 150 | **388** | **414** | 152 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1197** | 41-50 | 553 |
| 18:00 | 13 | 80 | 285 | 392 | **157** | **46** | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 979 | 42-51 | 546 |
| 19:00 | 0 | 17 | 209 | 298 | 117 | 35 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 680 | 42-51 | 457 |
| 20:00 | 3 | 14 | 133 | 202 | 96 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 475 | 43-52 | 302 |
| 21:00 | 1 | 3 | 51 | 111 | 69 | 21 | 1 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 260 | 44-53 | 168 |
| 22:00 | 3 | 4 | 31 | 42 | 37 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 44-53 | 69 |
| 23:00 | 1 | 6 | 18 | 36 | 22 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 44-53 | 50 |
| Total | 557 | 1007 | 3309 | 4440 | 2047 | 530 | 90 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 11999 | | |
| Percent | 4.6% | 8.4% | 27.6% | 37.0% | 17.1% | 4.4% | 0.8% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 08:00 | 11:00 | 07:00 | 07:00 | 06:00 | 06:00 | | 05:00 | | | | | 11:00 | | |
| Vol. | 25 | 48 | 177 | 302 | 167 | 52 | 16 | 4 | | 1 | | | | | 687 | | |
| PM Peak | 15:00 | 16:00 | 17:00 | 17:00 | 18:00 | 18:00 | 13:00 | 21:00 | 15:00 | | | | | | 17:00 | | |
| Vol. | 184 | 256 | 388 | 414 | 157 | 46 | 7 | 3 | 1 | | | | | | 1197 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/14 | 0 | 2 | 4 | 19 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 44-53 | 22 |
| 01:00 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 9 | 39-48 | 5 |
| 02:00 | 0 | 1 | 3 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 41-50 | 3 |
| 03:00 | 0 | 2 | 3 | 6 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 44-53 | 9 |
| 04:00 | 1 | 1 | 7 | 11 | 10 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 44-53 | 18 |
| 05:00 | 3 | 6 | 20 | 49 | 33 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 45-54 | 67 |
| 06:00 | 1 | 3 | 55 | 97 | 90 | **60** | **13** | **4** | 1 | 0 | 0 | 0 | 0 | 0 | 324 | 46-55 | 174 |
| 07:00 | 12 | 50 | 171 | 224 | **134** | 25 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 624 | 43-52 | 324 |
| 08:00 | 3 | 43 | 209 | 245 | 128 | 29 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 662 | 42-51 | 384 |
| 09:00 | 4 | 27 | 168 | 253 | 122 | 17 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 597 | 43-52 | 371 |
| 10:00 | 8 | 38 | 166 | 250 | 134 | 25 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 628 | 43-52 | 358 |
| 11:00 | **53** | **82** | **251** | **291** | 107 | 15 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **803** | 42-51 | 373 |
| 12 PM | 189 | 87 | 171 | 152 | 67 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 683 | 15-24 | 175 |
| 13:00 | 149 | 122 | 259 | 228 | 68 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 835 | 40-49 | 264 |
| 14:00 | 19 | 57 | 273 | 346 | 116 | 30 | **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 850 | 42-51 | 490 |
| 15:00 | 28 | 113 | 320 | **384** | 124 | 26 | 3 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 1001 | 41-50 | 519 |
| 16:00 | 117 | **249** | **422** | 319 | 116 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1245** | 39-48 | 456 |
| 17:00 | **237** | 230 | 404 | 260 | 72 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1218 | 39-48 | 357 |
| 18:00 | 13 | 58 | 271 | 370 | **149** | **31** | 3 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 897 | 42-51 | 527 |
| 19:00 | 10 | 25 | 155 | 280 | 139 | 28 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 642 | 43-52 | 389 |
| 20:00 | 2 | 13 | 103 | 167 | 96 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 407 | 43-52 | 252 |
| 21:00 | 0 | 11 | 69 | 123 | 79 | 28 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 315 | 44-53 | 188 |
| 22:00 | 1 | 4 | 42 | 76 | 52 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 192 | 44-53 | 119 |
| 23:00 | 5 | 1 | 22 | 37 | 27 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 45-54 | 54 |
| Total | 855 | 1225 | 3572 | 4189 | 1877 | 440 | 83 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 12260 | | |
| Percent | 7.0% | 10.0% | 29.1% | 34.2% | 15.3% | 3.6% | 0.7% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 07:00 | 06:00 | 06:00 | 06:00 | 01:00 | | | | | | 11:00 | | |
| Vol. | 53 | 82 | 251 | 291 | 134 | 60 | 13 | 4 | 1 | | | | | | 803 | | |
| PM Peak | 17:00 | 16:00 | 16:00 | 15:00 | 18:00 | 18:00 | 14:00 | 18:00 | 15:00 | | | | | | 16:00 | | |
| Vol. | 237 | 249 | 422 | 384 | 149 | 31 | 9 | 2 | 2 | | | | | | 1245 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/14 | 0 | 5 | 13 | 21 | 19 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 45-54 | 34 |
| 01:00 | 0 | 1 | 3 | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45-54 | 14 |
| 02:00 | 0 | 2 | 2 | 5 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 45-54 | 7 |
| 03:00 | 0 | 0 | 5 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 42-51 | 11 |
| 04:00 | 0 | 2 | 5 | 9 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 43-52 | 13 |
| 05:00 | 0 | 1 | 9 | 15 | 8 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 43-52 | 23 |
| 06:00 | 2 | 4 | 16 | 45 | 37 | 19 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 127 | 45-54 | 70 |
| 07:00 | 2 | 11 | 32 | 64 | 71 | 39 | **8** | **4** | **1** | 0 | 0 | 0 | 0 | 0 | 232 | 47-56 | 116 |
| 08:00 | 3 | 7 | 66 | 131 | 99 | 43 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 360 | 45-54 | 208 |
| 09:00 | **4** | 9 | 80 | 190 | 174 | **52** | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 519 | 45-54 | 321 |
| 10:00 | 4 | 18 | **149** | 318 | 165 | 43 | 8 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 707 | 44-53 | 452 |
| 11:00 | 4 | **29** | 148 | **366** | **192** | 40 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **787** | 44-53 | 505 |
| 12 PM | **53** | **116** | 212 | 279 | 128 | 31 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 825 | 42-51 | 334 |
| 13:00 | 15 | 58 | **236** | **347** | 174 | 26 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **859** | 43-52 | 485 |
| 14:00 | 10 | 36 | 221 | 344 | 159 | **36** | 7 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 815 | 43-52 | 491 |
| 15:00 | 3 | 34 | 205 | 338 | **184** | 35 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 807 | 43-52 | 498 |
| 16:00 | 5 | 12 | 130 | 346 | 142 | 36 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 679 | 44-53 | 461 |
| 17:00 | 3 | 17 | 123 | 233 | 123 | 31 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 536 | 43-52 | 335 |
| 18:00 | 3 | 16 | 107 | 196 | 113 | 30 | **8** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 475 | 44-53 | 287 |
| 19:00 | 1 | 18 | 118 | 207 | 89 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 447 | 43-52 | 294 |
| 20:00 | 1 | 5 | 83 | 149 | 70 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 323 | 43-52 | 220 |
| 21:00 | 1 | 9 | 45 | 93 | 56 | 15 | 4 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 226 | 44-53 | 135 |
| 22:00 | 0 | 11 | 29 | 81 | 35 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 | 44-53 | 103 |
| 23:00 | 3 | 3 | 22 | 36 | 24 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 44-53 | 53 |
| Total | 117 | 424 | 2059 | 3832 | 2075 | 544 | 101 | 21 | 5 | 1 | 0 | 0 | 0 | 0 | 9179 | | |
| Percent | 1.3% | 4.6% | 22.4% | 41.7% | 22.6% | 5.9% | 1.1% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 11:00 | 10:00 | 11:00 | 11:00 | 09:00 | 07:00 | 07:00 | 07:00 | 10:00 | | | | | 11:00 | | |
| Vol. | 4 | 29 | 149 | 366 | 192 | 52 | 8 | 4 | 1 | 1 | | | | | 787 | | |
| PM Peak | 12:00 | 12:00 | 13:00 | 13:00 | 15:00 | 14:00 | 18:00 | 21:00 | 14:00 | | | | | | 13:00 | | |
| Vol. | 53 | 116 | 236 | 347 | 184 | 36 | 8 | 3 | 1 | | | | | | 859 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/14 | 1 | 3 | 12 | 10 | 10 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 43-52 | 18 |
| 01:00 | 0 | 1 | 5 | 11 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 43-52 | 15 |
| 02:00 | 0 | 2 | 5 | 6 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 40-49 | 9 |
| 03:00 | 0 | 0 | 3 | 3 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 41-50 | 6 |
| 04:00 | 0 | 2 | 6 | 4 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 42-51 | 8 |
| 05:00 | 2 | 0 | 2 | 9 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 47-56 | 10 |
| 06:00 | 1 | 1 | 5 | 18 | 27 | 16 | 3 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 73 | 48-57 | 42 |
| 07:00 | 0 | 6 | 18 | 52 | 48 | 30 | 7 | **2** | 1 | 0 | 0 | 0 | 0 | 0 | 164 | 46-55 | 89 |
| 08:00 | 2 | 4 | 26 | 90 | 82 | 35 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 245 | 46-55 | 152 |
| 09:00 | 5 | 8 | 50 | 132 | 135 | **52** | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 392 | 46-55 | 232 |
| 10:00 | **7** | 17 | 65 | 191 | 183 | 51 | **11** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 528 | 46-55 | 316 |
| 11:00 | 5 | **18** | **100** | **298** | **190** | 43 | 11 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | **668** | 45-54 | 430 |
| 12 PM | **17** | **26** | **176** | **377** | 166 | 36 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **807** | 43-52 | 496 |
| 13:00 | 2 | 17 | 119 | 267 | 165 | 44 | 9 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 626 | 44-53 | 394 |
| 14:00 | 5 | 11 | 93 | 280 | **195** | 40 | 12 | 2 | **2** | 0 | 0 | 0 | 0 | 0 | 640 | 45-54 | 421 |
| 15:00 | 3 | 16 | 104 | 272 | 160 | 41 | **13** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 44-53 | 389 |
| 16:00 | 4 | 9 | 76 | 249 | 146 | 39 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 530 | 45-54 | 353 |
| 17:00 | 6 | 1 | 80 | 255 | 148 | 34 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 534 | 45-54 | 365 |
| 18:00 | 3 | 8 | 51 | 197 | 133 | **47** | 9 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 450 | 45-54 | 291 |
| 19:00 | 2 | 12 | 88 | 153 | 80 | 32 | 7 | 2 | 0 | **1** | 0 | 0 | 0 | 0 | 377 | 43-52 | 224 |
| 20:00 | 1 | 5 | 63 | 112 | 61 | 11 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 259 | 43-52 | 168 |
| 21:00 | 1 | 5 | 26 | 29 | 41 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 | 47-56 | 61 |
| 22:00 | 0 | 2 | 19 | 27 | 21 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 45-54 | 45 |
| 23:00 | 1 | 2 | 11 | 25 | 17 | 11 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 45-54 | 37 |
| Total | 68 | 176 | 1203 | 3067 | 2027 | 599 | 137 | 32 | 8 | 2 | 0 | 0 | 0 | 0 | 7319 | | |
| Percent | 0.9% | 2.4% | 16.4% | 41.9% | 27.7% | 8.2% | 1.9% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 10:00 | 11:00 | 11:00 | 11:00 | 11:00 | 09:00 | 10:00 | 07:00 | 11:00 | 06:00 | | | | | 11:00 | | |
| Vol. | 7 | 18 | 100 | 298 | 190 | 52 | 11 | 2 | 2 | 1 | | | | | 668 | | |
| PM Peak | 12:00 | 12:00 | 12:00 | 12:00 | 14:00 | 18:00 | 15:00 | 13:00 | 14:00 | 19:00 | | | | | 12:00 | | |
| Vol. | 17 | 26 | 176 | 377 | 195 | 47 | 13 | 3 | 2 | 1 | | | | | 807 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/14 | 1 | 1 | 5 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 41-50 | 8 |
| 01:00 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 44-53 | 4 |
| 02:00 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 41-50 | 4 |
| 03:00 | 0 | 1 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 51-60 | 5 |
| 04:00 | 0 | 2 | 13 | 12 | 11 | 2 | 3 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 44 | 42-51 | 23 |
| 05:00 | 0 | 4 | 22 | 33 | 29 | 19 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 45-54 | 57 |
| 06:00 | 1 | 9 | 33 | 115 | 98 | 32 | **11** | 1 | 1 | 0 | 0 | 0 | **1** | 0 | 302 | 46-55 | 185 |
| 07:00 | 8 | **69** | 187 | **301** | 113 | 26 | 4 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | **711** | 42-51 | 392 |
| 08:00 | 3 | 47 | 181 | 301 | **135** | 35 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 711 | 43-52 | 417 |
| 09:00 | 5 | 24 | 152 | 221 | 119 | **46** | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 572 | 43-52 | 331 |
| 10:00 | 6 | 29 | **197** | 258 | 80 | 24 | 2 | 0 | 1 | **1** | 0 | 0 | 0 | 0 | 598 | 42-51 | 379 |
| 11:00 | **11** | 40 | 174 | 278 | 97 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 619 | 42-51 | 370 |
| 12 PM | 9 | 42 | 194 | 286 | 112 | 31 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 676 | 42-51 | 399 |
| 13:00 | 7 | 67 | 215 | 260 | 126 | 29 | 3 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 709 | 42-51 | 381 |
| 14:00 | 16 | 120 | 293 | 219 | 74 | 19 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 745 | 40-49 | 368 |
| 15:00 | 16 | 116 | 344 | 292 | 79 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 869 | 40-49 | 466 |
| 16:00 | 72 | 211 | **459** | **341** | 93 | 17 | 0 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | 1194 | 40-49 | 526 |
| 17:00 | **194** | **280** | 436 | 264 | 77 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1263** | 38-47 | 403 |
| 18:00 | 38 | 129 | 264 | 335 | **152** | **36** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 955 | 42-51 | 429 |
| 19:00 | 2 | 22 | 177 | 224 | 104 | 26 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 559 | 42-51 | 351 |
| 20:00 | 2 | 14 | 109 | 163 | 72 | 15 | **5** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 381 | 43-52 | 240 |
| 21:00 | 1 | 6 | 43 | 86 | 55 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 203 | 44-53 | 129 |
| 22:00 | 1 | 1 | 24 | 55 | 32 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 44-53 | 81 |
| 23:00 | 0 | 3 | 12 | 27 | 25 | 7 | 5 | **3** | 1 | 0 | 0 | 0 | 0 | 0 | 83 | 45-54 | 46 |
| Total | 393 | 1237 | 3538 | 4084 | 1692 | 434 | 78 | 15 | 6 | 1 | 1 | 0 | 1 | 0 | 11480 | | |
| Percent | 3.4% | 10.8% | 30.8% | 35.6% | 14.7% | 3.8% | 0.7% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 07:00 | 10:00 | 07:00 | 08:00 | 09:00 | 06:00 | 07:00 | 04:00 | 10:00 | | | 06:00 | | 07:00 | | |
| Vol. | 11 | 69 | 197 | 301 | 135 | 46 | 11 | 3 | 1 | 1 | | | 1 | | 711 | | |
| PM Peak | 17:00 | 17:00 | 16:00 | 16:00 | 18:00 | 18:00 | 20:00 | 23:00 | 13:00 | | 16:00 | | | | 17:00 | | |
| Vol. | 194 | 280 | 459 | 341 | 152 | 36 | 5 | 3 | 1 | | 1 | | | | 1263 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/14 | 0 | 1 | 7 | 13 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 43-52 | 18 |
| 01:00 | 0 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 47-56 | 3 |
| 02:00 | 0 | 0 | 5 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 42-51 | 6 |
| 03:00 | 0 | 2 | 1 | 4 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 45-54 | 7 |
| 04:00 | 1 | 2 | 6 | 12 | 9 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 45-54 | 17 |
| 05:00 | 1 | 3 | 12 | 27 | 45 | 20 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 114 | 48-57 | 65 |
| 06:00 | 2 | 7 | 35 | 112 | 124 | **57** | 9 | 1 | **1** | **1** | 0 | 0 | 0 | 0 | 349 | 47-56 | 210 |
| 07:00 | 5 | 48 | 209 | 239 | **129** | 31 | **11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 673 | 42-51 | 373 |
| 08:00 | 4 | 52 | **265** | 233 | 106 | 26 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 691 | 41-50 | 405 |
| 09:00 | 4 | 37 | 189 | 246 | 95 | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 593 | 42-51 | 363 |
| 10:00 | 9 | 28 | 136 | 223 | 107 | 31 | 3 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 540 | 43-52 | 309 |
| 11:00 | **75** | **59** | 175 | **248** | 116 | 25 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **702** | 42-51 | 282 |
| 12 PM | 20 | 63 | 197 | 324 | 103 | 20 | 2 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 731 | 42-51 | 405 |
| 13:00 | 8 | 43 | 183 | 287 | 142 | **31** | 5 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 701 | 43-52 | 404 |
| 14:00 | 62 | 79 | 256 | 243 | 94 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 748 | 41-50 | 331 |
| 15:00 | 26 | 122 | 287 | 313 | 138 | 20 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 910 | 41-50 | 437 |
| 16:00 | 204 | **199** | **450** | 234 | 73 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1181 | 39-48 | 386 |
| 17:00 | **218** | 199 | 433 | 271 | 83 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1224** | 39-48 | 387 |
| 18:00 | 17 | 149 | 303 | **356** | **148** | 23 | **6** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1002 | 41-50 | 484 |
| 19:00 | 1 | 19 | 110 | 234 | 116 | 28 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 516 | 44-53 | 328 |
| 20:00 | 0 | 20 | 85 | 192 | 88 | 20 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 410 | 44-53 | 260 |
| 21:00 | 1 | 3 | 49 | 107 | 49 | 15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 228 | 44-53 | 151 |
| 22:00 | 2 | 3 | 25 | 37 | 36 | 15 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 121 | 45-54 | 64 |
| 23:00 | 4 | 2 | 13 | 26 | 24 | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 | 46-55 | 40 |
| Total | 664 | 1141 | 3433 | 3984 | 1840 | 448 | 82 | 15 | 6 | 1 | 0 | 0 | 0 | 0 | 11614 | | |
| Percent | 5.7% | 9.8% | 29.6% | 34.3% | 15.8% | 3.9% | 0.7% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 08:00 | 11:00 | 07:00 | 06:00 | 07:00 | 10:00 | 06:00 | 06:00 | | | | | 11:00 | | |
| Vol. | 75 | 59 | 265 | 248 | 129 | 57 | 11 | 3 | 1 | 1 | | | | | 702 | | |
| PM Peak | 17:00 | 16:00 | 16:00 | 18:00 | 18:00 | 13:00 | 18:00 | 12:00 | 13:00 | | | | | | 17:00 | | |
| Vol. | 218 | 199 | 450 | 356 | 148 | 31 | 6 | 2 | 1 | | | | | | 1224 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Travel Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 0 | **1** | **6** | **15** | **11** | **4** | 0 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | **38** | 46-55 | 23 |
| 01:00 | **2** | 1 | 4 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 42-51 | 4 |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 2 | 2 | 10 | 18 | 12 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 51 | | |
| Percent | 3.9% | 3.9% | 19.6% | 35.3% | 23.5% | 11.8% | 0.0% | 0.0% | 0.0% | 2.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 01:00 | 00:00 | 00:00 | 00:00 | 00:00 | 00:00 | | | | 00:00 | | | | | 00:00 | | |
| Vol. | 2 | 1 | 6 | 15 | 11 | 4 | | | | 1 | | | | | 38 | | |
| PM Peak Vol. | | | | | | | | | | | | | | | | | |
| Total | 3683 | 6960 | 23183 | 32126 | 15902 | 4106 | 742 | 150 | 39 | 10 | 2 | 0 | 1 | 0 | 86904 | | |
| Percent | 4.2% | 8.0% | 26.7% | 37.0% | 18.3% | 4.7% | 0.9% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 27 MPH |
| 50th Percentile : | 44 MPH |
| 85th Percentile : | 51 MPH |
| 95th Percentile : | 55 MPH |

Stats

| | |
|---|---|
| 10 MPH Pace Speed : | 42-51 MPH |
| Number in Pace : | 42424 |
| Percent in Pace : | 48.8% |
| Number of Vehicles > 55 MPH : | 5050 |
| Percent of Vehicles > 55 MPH : | 5.8% |
| Mean Speed(Average) : | 42 MPH |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | 17 | **7** | 40 | 91 | 119 | 57 | 12 | **7** | **1** | 0 | 0 | 0 | 0 | 0 | 351 | 47-56 | 170 |
| 08:00 | 18 | 2 | 21 | 129 | 104 | 41 | 10 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 329 | 46-55 | 183 |
| 09:00 | **20** | 2 | **52** | 143 | 123 | 43 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 399 | 46-55 | 214 |
| 10:00 | 18 | 6 | 37 | 89 | 115 | **65** | 8 | 2 | 0 | **1** | 0 | 0 | 0 | 0 | 341 | 47-56 | 166 |
| 11:00 | 19 | 7 | 44 | **154** | **126** | 43 | **17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **410** | 46-55 | 222 |
| 12 PM | 13 | 5 | 42 | 122 | 129 | 38 | 11 | 1 | 0 | **1** | 0 | **1** | 0 | 0 | 363 | 46-55 | 206 |
| 13:00 | 18 | 14 | 63 | 154 | 131 | **61** | **18** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 460 | 46-55 | 230 |
| 14:00 | 30 | 5 | 62 | 217 | 148 | 57 | 13 | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 536 | 45-54 | 289 |
| 15:00 | 50 | **50** | 111 | 215 | **164** | 50 | 8 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 652 | 45-54 | 270 |
| 16:00 | 68 | 40 | 154 | **295** | 149 | 40 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 757 | 43-52 | 336 |
| 17:00 | **78** | 36 | **171** | 275 | 161 | 59 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **792** | 43-52 | 329 |
| 18:00 | 45 | 9 | 81 | 221 | 160 | 46 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 574 | 45-54 | 286 |
| 19:00 | 18 | 30 | 74 | 167 | 105 | 32 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 436 | 44-53 | 213 |
| 20:00 | 13 | 17 | 86 | 112 | 59 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 42-51 | 156 |
| 21:00 | 5 | 3 | 44 | 71 | 40 | 18 | 5 | 2 | **1** | 0 | 0 | 0 | 0 | 0 | 189 | 43-52 | 103 |
| 22:00 | 1 | 6 | 12 | 60 | 41 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 46-55 | 86 |
| 23:00 | 2 | 7 | 24 | 51 | 46 | 24 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 162 | 46-55 | 83 |
| Total | 433 | 246 | 1118 | 2566 | 1920 | 706 | 163 | 33 | 4 | 3 | 0 | 1 | 0 | 0 | 7193 | | |
| Percent | 6.0% | 3.4% | 15.5% | 35.7% | 26.7% | 9.8% | 2.3% | 0.5% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 07:00 | 09:00 | 11:00 | 11:00 | 10:00 | 11:00 | 07:00 | 07:00 | 10:00 | | | | | 11:00 | | |
| Vol. | 20 | 7 | 52 | 154 | 126 | 65 | 17 | 7 | 1 | 1 | | | | | 410 | | |
| PM Peak | 17:00 | 15:00 | 17:00 | 16:00 | 15:00 | 13:00 | 13:00 | 14:00 | 21:00 | 12:00 | | 12:00 | | | 17:00 | | |
| Vol. | 78 | 50 | 171 | 295 | 164 | 61 | 18 | 4 | 1 | 1 | | 1 | | | 792 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/14 | 0 | 1 | 12 | 13 | 4 | 4 | 3 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 38 | 41-50 | 22 |
| 01:00 | 0 | 0 | 2 | 1 | 1 | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 56-65 | 7 |
| 02:00 | 0 | 0 | 1 | 6 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 44-53 | 8 |
| 03:00 | 1 | 2 | 1 | 6 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 46-55 | 8 |
| 04:00 | 0 | 1 | 2 | 5 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 45-54 | 8 |
| 05:00 | 2 | 1 | 5 | 13 | 13 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 51-60 | 24 |
| 06:00 | 9 | 0 | 12 | 35 | 60 | 33 | 13 | **4** | 0 | **1** | **1** | 0 | 0 | 0 | 168 | 48-57 | 82 |
| 07:00 | 16 | 7 | 41 | **159** | **124** | **39** | **14** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 401 | 46-55 | 227 |
| 08:00 | 25 | 5 | 41 | 139 | 112 | 39 | 6 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 371 | 46-55 | 191 |
| 09:00 | 22 | **15** | **92** | 151 | 86 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 394 | 43-52 | 198 |
| 10:00 | 20 | 12 | 44 | 148 | 122 | 36 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 388 | 46-55 | 208 |
| 11:00 | **39** | 13 | 67 | 147 | 117 | 30 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | **422** | 45-54 | 190 |
| 12 PM | 109 | **74** | 111 | 127 | 66 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 513 | 41-50 | 125 |
| 13:00 | 47 | 12 | 75 | 189 | 141 | 39 | 8 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 514 | 45-54 | 239 |
| 14:00 | 42 | 12 | 105 | 174 | 149 | 64 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 565 | 45-54 | 248 |
| 15:00 | 55 | 24 | 111 | 220 | 143 | 52 | 9 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 618 | 44-53 | 268 |
| 16:00 | 115 | 51 | **171** | **226** | 145 | 50 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **769** | 43-52 | 255 |
| 17:00 | **248** | 73 | 166 | 139 | 72 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 715 | 15-24 | 208 |
| 18:00 | 51 | 3 | 74 | 206 | **190** | **76** | **19** | **7** | 2 | 0 | 0 | 0 | 0 | 0 | 628 | 46-55 | 297 |
| 19:00 | 23 | 9 | 79 | 161 | 107 | 36 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 428 | 44-53 | 217 |
| 20:00 | 15 | 11 | 90 | 150 | 80 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 366 | 43-52 | 203 |
| 21:00 | 5 | 3 | 34 | 98 | 65 | 28 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 237 | 45-54 | 142 |
| 22:00 | 0 | 4 | 23 | 48 | 35 | 17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 45-54 | 75 |
| 23:00 | 3 | 3 | 12 | 45 | 50 | 26 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 47-56 | 82 |
| Total | 847 | 336 | 1371 | 2606 | 1893 | 666 | 159 | 33 | 10 | 1 | 1 | 0 | 0 | 0 | 7923 | | |
| Percent | 10.7% | 4.2% | 17.3% | 32.9% | 23.9% | 8.4% | 2.0% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 09:00 | 09:00 | 07:00 | 07:00 | 07:00 | 07:00 | 06:00 | 00:00 | 06:00 | 06:00 | | | | 11:00 | | |
| Vol. | 39 | 15 | 92 | 159 | 124 | 39 | 14 | 4 | 1 | 1 | 1 | | | | 422 | | |
| PM Peak | 17:00 | 12:00 | 16:00 | 16:00 | 18:00 | 18:00 | 18:00 | 18:00 | 13:00 | | | | | | 16:00 | | |
| Vol. | 248 | 74 | 171 | 226 | 190 | 76 | 19 | 7 | 2 | | | | | | 769 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/14 | 0 | 3 | 11 | 15 | 13 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 44-53 | 25 |
| 01:00 | 1 | 0 | 7 | 4 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | 40-49 | 9 |
| 02:00 | 0 | 0 | 3 | 3 | 3 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 51-60 | 8 |
| 03:00 | 0 | 1 | 2 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 41-50 | 6 |
| 04:00 | 0 | 1 | 4 | 5 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 43-52 | 9 |
| 05:00 | 0 | 3 | 3 | 10 | 22 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 50-59 | 35 |
| 06:00 | 14 | 2 | 11 | 28 | 53 | 31 | 8 | **4** | 1 | 0 | 0 | 0 | 0 | 0 | 152 | 49-58 | 65 |
| 07:00 | 22 | **14** | 68 | 140 | 90 | 36 | **9** | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 382 | 44-53 | 182 |
| 08:00 | 14 | 11 | 73 | 127 | 107 | 45 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 383 | 45-54 | 194 |
| 09:00 | 19 | 3 | 36 | 149 | **116** | **53** | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 382 | 46-55 | 212 |
| 10:00 | 12 | 10 | 51 | 107 | 96 | 38 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 321 | 45-54 | 165 |
| 11:00 | **23** | 8 | **75** | **152** | 112 | 36 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **411** | 45-54 | 211 |
| 12 PM | 22 | 6 | 77 | 179 | 137 | 34 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 465 | 45-54 | 257 |
| 13:00 | 29 | 6 | 53 | 147 | 139 | 54 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 440 | 46-55 | 220 |
| 14:00 | 36 | 23 | 83 | 227 | 115 | 40 | **12** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 538 | 44-53 | 263 |
| 15:00 | **179** | 51 | 123 | 166 | 108 | 47 | 10 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 685 | 15-24 | 173 |
| 16:00 | 97 | **77** | 177 | 242 | 130 | 34 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 765 | 42-51 | 266 |
| 17:00 | 84 | 53 | **196** | 248 | 140 | 51 | 7 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | **781** | 42-51 | 301 |
| 18:00 | 39 | 9 | 111 | **272** | **151** | **64** | 10 | **3** | 1 | 0 | 0 | 0 | 0 | 0 | 660 | 44-53 | 343 |
| 19:00 | 32 | 7 | 51 | 177 | 131 | 37 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 449 | 45-54 | 232 |
| 20:00 | 19 | 12 | 87 | 172 | 66 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 374 | 43-52 | 211 |
| 21:00 | 9 | 3 | 50 | 96 | 61 | 25 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 253 | 44-53 | 137 |
| 22:00 | 1 | 4 | 24 | 47 | 33 | 18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 44-53 | 72 |
| 23:00 | 2 | 5 | 25 | 55 | 42 | 15 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 | 45-54 | 84 |
| Total | 654 | 312 | 1401 | 2773 | 1874 | 703 | 143 | 24 | 7 | 1 | 0 | 0 | 0 | 0 | 7892 | | |
| Percent | 8.3% | 4.0% | 17.8% | 35.1% | 23.7% | 8.9% | 1.8% | 0.3% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 07:00 | 11:00 | 11:00 | 09:00 | 09:00 | 07:00 | 06:00 | 07:00 | | | | | | 11:00 | | |
| Vol. | 23 | 14 | 75 | 152 | 116 | 53 | 9 | 4 | 2 | | | | | | 411 | | |
| PM Peak | 15:00 | 16:00 | 17:00 | 18:00 | 18:00 | 18:00 | 14:00 | 18:00 | 15:00 | 17:00 | | | | | 17:00 | | |
| Vol. | 179 | 77 | 196 | 272 | 151 | 64 | 12 | 3 | 1 | 1 | | | | | 781 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/14 | 2 | 2 | 7 | 8 | 17 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 47-56 | 19 |
| 01:00 | 1 | 1 | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 46-55 | 5 |
| 02:00 | 0 | 1 | 4 | 2 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 48-57 | 9 |
| 03:00 | 0 | 1 | 1 | 6 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 46-55 | 9 |
| 04:00 | 0 | 0 | 2 | 6 | 6 | 3 | 0 | 2 | 0 | **1** | 0 | 0 | 0 | 0 | 20 | 47-56 | 11 |
| 05:00 | 0 | 2 | 5 | 12 | 16 | 12 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 48-57 | 27 |
| 06:00 | 9 | 1 | 9 | 34 | 67 | 31 | 11 | **3** | **1** | 0 | 0 | 0 | 0 | 0 | 166 | 48-57 | 86 |
| 07:00 | 21 | 25 | **88** | 102 | 113 | 22 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 379 | 45-54 | 164 |
| 08:00 | 16 | 17 | 70 | 118 | 86 | 30 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 345 | 44-53 | 164 |
| 09:00 | 22 | 7 | 62 | 125 | **123** | 32 | **14** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 388 | 45-54 | 194 |
| 10:00 | 20 | 9 | 39 | 124 | 99 | **46** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 340 | 46-55 | 171 |
| 11:00 | **29** | **26** | 73 | **137** | 117 | 28 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | **418** | 45-54 | 186 |
| 12 PM | 150 | 61 | 92 | 98 | 64 | 17 | 3 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 487 | 15-24 | 132 |
| 13:00 | 101 | 63 | 105 | 185 | 84 | 23 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 567 | 43-52 | 169 |
| 14:00 | 39 | 20 | 91 | 205 | 109 | 47 | 12 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 525 | 44-53 | 243 |
| 15:00 | 65 | 16 | 126 | **249** | 154 | 53 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 675 | 44-53 | 300 |
| 16:00 | 99 | 73 | **215** | 238 | 130 | 39 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **802** | 42-51 | 287 |
| 17:00 | **166** | **127** | 156 | 192 | 95 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 760 | 41-50 | 179 |
| 18:00 | 46 | 2 | 73 | 196 | **191** | **63** | **19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 590 | 46-55 | 292 |
| 19:00 | 18 | 5 | 51 | 155 | 114 | 36 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 390 | 45-54 | 217 |
| 20:00 | 7 | 10 | 58 | 130 | 71 | 22 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 304 | 44-53 | 176 |
| 21:00 | 6 | 9 | 27 | 87 | 64 | 22 | 8 | 2 | **2** | 0 | 0 | 0 | 0 | 0 | 227 | 45-54 | 123 |
| 22:00 | 6 | 4 | 28 | 80 | 62 | 25 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 212 | 45-54 | 119 |
| 23:00 | 8 | 9 | 34 | 65 | 55 | 33 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 209 | 45-54 | 97 |
| Total | 831 | 491 | 1416 | 2560 | 1850 | 615 | 145 | 28 | 5 | 2 | 0 | 0 | 0 | 0 | 7943 | | |
| Percent | 10.5% | 6.2% | 17.8% | 32.2% | 23.3% | 7.7% | 1.8% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 07:00 | 11:00 | 09:00 | 10:00 | 09:00 | 06:00 | 06:00 | 04:00 | | | | | 11:00 | | |
| Vol. | 29 | 26 | 88 | 137 | 123 | 46 | 14 | 3 | 1 | 1 | | | | | 418 | | |
| PM Peak | 17:00 | 17:00 | 16:00 | 15:00 | 18:00 | 18:00 | 18:00 | 14:00 | 21:00 | 12:00 | | | | | 16:00 | | |
| Vol. | 166 | 127 | 215 | 249 | 191 | 63 | 19 | 2 | 2 | 1 | | | | | 802 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/14 | 0 | 4 | 14 | 19 | 23 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 46-55 | 36 |
| 01:00 | 0 | 5 | 6 | 7 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 41-50 | 10 |
| 02:00 | 0 | 1 | 2 | 13 | 6 | 9 | 1 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 34 | 47-56 | 17 |
| 03:00 | 0 | 1 | 3 | 4 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 47-56 | 10 |
| 04:00 | 0 | 1 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 53-62 | 3 |
| 05:00 | 0 | 0 | 5 | 6 | 5 | 7 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | 49-58 | 12 |
| 06:00 | 4 | 2 | 3 | 19 | 17 | 21 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 73 | 49-58 | 31 |
| 07:00 | 1 | 3 | 18 | 44 | 57 | 35 | **20** | **5** | **4** | 0 | 0 | 0 | 0 | 0 | 187 | 47-56 | 94 |
| 08:00 | 10 | 8 | 19 | 70 | 69 | 33 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | 46-55 | 109 |
| 09:00 | 17 | 2 | 12 | 86 | 136 | **76** | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 347 | 48-57 | 190 |
| 10:00 | 30 | 6 | 42 | 154 | **164** | 57 | 12 | 3 | 0 | **1** | 0 | 0 | 0 | 0 | 469 | 46-55 | 243 |
| 11:00 | **31** | **11** | **59** | **179** | 151 | 58 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **498** | 46-55 | 252 |
| 12 PM | 29 | **25** | **85** | 177 | 141 | 44 | 9 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 512 | 45-54 | 243 |
| 13:00 | 38 | 19 | 71 | 175 | 153 | 44 | 12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | **515** | 45-54 | 240 |
| 14:00 | 36 | 12 | 64 | 150 | **170** | 49 | **14** | **3** | 0 | **1** | 0 | 0 | 0 | 0 | 499 | 46-55 | 238 |
| 15:00 | **39** | 15 | 62 | 174 | 149 | **53** | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 504 | 46-55 | 236 |
| 16:00 | 27 | 6 | 67 | **187** | 158 | 45 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 506 | 45-54 | 272 |
| 17:00 | 22 | 6 | 40 | 145 | 104 | 43 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 371 | 45-54 | 193 |
| 18:00 | 10 | 5 | 42 | 134 | 89 | 42 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 335 | 45-54 | 188 |
| 19:00 | 17 | 8 | 42 | 105 | 94 | 26 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 45-54 | 153 |
| 20:00 | 2 | 3 | 33 | 120 | 73 | 17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 251 | 45-54 | 172 |
| 21:00 | 4 | 4 | 30 | 80 | 66 | 23 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 210 | 45-54 | 125 |
| 22:00 | 4 | 9 | 42 | 50 | 45 | 15 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 171 | 44-53 | 82 |
| 23:00 | 7 | 4 | 38 | 59 | 53 | 20 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 186 | 45-54 | 94 |
| Total | 328 | 160 | 799 | 2159 | 1937 | 729 | 180 | 29 | 13 | 4 | 1 | 0 | 0 | 0 | 6339 | | |
| Percent | 5.2% | 2.5% | 12.6% | 34.1% | 30.6% | 11.5% | 2.8% | 0.5% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 10:00 | 09:00 | 07:00 | 07:00 | 07:00 | 10:00 | 02:00 | | | | 11:00 | | |
| Vol. | 31 | 11 | 59 | 179 | 164 | 76 | 20 | 5 | 4 | 1 | 1 | | | | 498 | | |
| PM Peak | 15:00 | 12:00 | 12:00 | 16:00 | 14:00 | 15:00 | 14:00 | 14:00 | 12:00 | 14:00 | | | | | 13:00 | | |
| Vol. | 39 | 25 | 85 | 187 | 170 | 53 | 14 | 3 | 2 | 1 | | | | | 515 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/14 | 1 | 4 | 13 | 26 | 14 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 44-53 | 35 |
| 01:00 | 0 | 1 | 3 | 15 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 45-54 | 21 |
| 02:00 | 0 | 0 | 3 | 6 | 11 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | 46-55 | 16 |
| 03:00 | 1 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 54-63 | 3 |
| 04:00 | 0 | 1 | 2 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 40-49 | 5 |
| 05:00 | 0 | 0 | 2 | 5 | 3 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 44-53 | 8 |
| 06:00 | 1 | 1 | 3 | 9 | 12 | 6 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 46-55 | 18 |
| 07:00 | 3 | **6** | 16 | 28 | 42 | 29 | 5 | **7** | **2** | **1** | 0 | 0 | 0 | 0 | 139 | 48-57 | 63 |
| 08:00 | 4 | 1 | 7 | 35 | 62 | 33 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 48-57 | 89 |
| 09:00 | 6 | 0 | 13 | 50 | 93 | 47 | 13 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 227 | 48-57 | 132 |
| 10:00 | 10 | 2 | **23** | 72 | 115 | **52** | **17** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 294 | 48-57 | 162 |
| 11:00 | **18** | 5 | 21 | **129** | **147** | 48 | 11 | 3 | 1 | 0 | **1** | 0 | 0 | 0 | **384** | 47-56 | 219 |
| 12 PM | **36** | **8** | **56** | **156** | **167** | 60 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | **490** | 46-55 | 242 |
| 13:00 | 26 | 4 | 52 | 129 | 135 | **66** | 14 | 3 | 1 | 0 | **1** | 0 | 0 | 0 | 431 | 46-55 | 208 |
| 14:00 | 16 | 4 | 29 | 128 | 117 | 56 | 14 | **5** | **2** | 0 | 0 | 0 | 0 | 0 | 371 | 46-55 | 199 |
| 15:00 | 17 | 2 | 33 | 111 | 153 | 64 | 20 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 404 | 47-56 | 220 |
| 16:00 | 12 | 3 | 26 | 103 | 162 | 50 | 12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 371 | 47-56 | 224 |
| 17:00 | 16 | 1 | 37 | 107 | 135 | 55 | **21** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 375 | 47-56 | 201 |
| 18:00 | 14 | 7 | 39 | 108 | 118 | 61 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 358 | 47-56 | 186 |
| 19:00 | 9 | 8 | 37 | 120 | 84 | 30 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 299 | 45-54 | 168 |
| 20:00 | 12 | 2 | 41 | 77 | 54 | 9 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 198 | 44-53 | 106 |
| 21:00 | 1 | 1 | 18 | 53 | 45 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 45-54 | 87 |
| 22:00 | 1 | 2 | 13 | 29 | 17 | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 45-54 | 41 |
| 23:00 | 4 | 5 | 16 | 41 | 37 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 46-55 | 63 |
| Total | 208 | 68 | 503 | 1543 | 1735 | 719 | 184 | 47 | 14 | 1 | 2 | 0 | 0 | 0 | 5024 | | |
| Percent | 4.1% | 1.4% | 10.0% | 30.7% | 34.5% | 14.3% | 3.7% | 0.9% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 07:00 | 10:00 | 11:00 | 11:00 | 10:00 | 10:00 | 07:00 | 07:00 | 07:00 | 11:00 | | | | 11:00 | | |
| Vol. | 18 | 6 | 23 | 129 | 147 | 52 | 17 | 7 | 2 | 1 | 1 | | | | 384 | | |
| PM Peak | 12:00 | 12:00 | 12:00 | 12:00 | 12:00 | 13:00 | 17:00 | 14:00 | 14:00 | | 13:00 | | | | 12:00 | | |
| Vol. | 36 | 8 | 56 | 156 | 167 | 66 | 21 | 5 | 2 | | 1 | | | | 490 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/14 | 1 | 3 | 8 | 10 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 42-51 | 15 |
| 01:00 | 0 | 1 | 1 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 45-54 | 6 |
| 02:00 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 46-55 | 7 |
| 03:00 | 1 | 0 | 2 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 44-53 | 8 |
| 04:00 | 0 | 0 | 4 | 4 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 44-53 | 8 |
| 05:00 | 1 | 0 | 4 | 8 | 17 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 49-58 | 23 |
| 06:00 | 4 | 5 | 11 | 30 | 69 | 33 | 9 | 1 | **1** | 0 | **1** | 0 | 0 | 0 | 164 | 49-58 | 90 |
| 07:00 | 19 | **14** | **70** | 139 | 110 | 30 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **391** | 45-54 | 198 |
| 08:00 | 19 | 8 | 57 | 135 | 105 | 37 | **14** | **3** | 1 | 0 | 0 | 0 | 0 | 0 | 379 | 45-54 | 192 |
| 09:00 | 8 | 2 | 42 | 141 | 106 | **49** | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 360 | 46-55 | 213 |
| 10:00 | 15 | 7 | 55 | **147** | 99 | 28 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 358 | 45-54 | 201 |
| 11:00 | **22** | 7 | 55 | 136 | **112** | 29 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 364 | 45-54 | 192 |
| 12 PM | 25 | 7 | 74 | 147 | 113 | 32 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 401 | 45-54 | 205 |
| 13:00 | 22 | 25 | 77 | 149 | 110 | 34 | 9 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 428 | 45-54 | 200 |
| 14:00 | 28 | 26 | 127 | 170 | 91 | 26 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 474 | 42-51 | 227 |
| 15:00 | 42 | 27 | 229 | 265 | 69 | 19 | 6 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 659 | 41-50 | 360 |
| 16:00 | 80 | 45 | 199 | **267** | 133 | 33 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 760 | 42-51 | 319 |
| 17:00 | **153** | **107** | **244** | 222 | 69 | 11 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **811** | 40-49 | 250 |
| 18:00 | 59 | 38 | 100 | 221 | **166** | **53** | 7 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 646 | 45-54 | 271 |
| 19:00 | 29 | 10 | 65 | 159 | 102 | 28 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 401 | 45-54 | 199 |
| 20:00 | 13 | 7 | 91 | 131 | 66 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 316 | 43-52 | 185 |
| 21:00 | 6 | 9 | 21 | 72 | 48 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 167 | 45-54 | 94 |
| 22:00 | 1 | 2 | 21 | 49 | 55 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 46-55 | 92 |
| 23:00 | 2 | 4 | 15 | 48 | 28 | 26 | **12** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 46-55 | 66 |
| Total | 550 | 354 | 1575 | 2664 | 1690 | 515 | 119 | 14 | 4 | 1 | 1 | 0 | 0 | 0 | 7487 | | |
| Percent | 7.3% | 4.7% | 21.0% | 35.6% | 22.6% | 6.9% | 1.6% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 07:00 | 07:00 | 10:00 | 11:00 | 09:00 | 08:00 | 08:00 | 06:00 | | 06:00 | | | | 07:00 | | |
| Vol. | 22 | 14 | 70 | 147 | 112 | 49 | 14 | 3 | 1 | | 1 | | | | 391 | | |
| PM Peak | 17:00 | 17:00 | 17:00 | 16:00 | 18:00 | 18:00 | 23:00 | 13:00 | 15:00 | 18:00 | | | | | 17:00 | | |
| Vol. | 153 | 107 | 244 | 267 | 166 | 53 | 12 | 2 | 1 | 1 | | | | | 811 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/14 | 0 | 2 | 9 | 11 | 15 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 45-54 | 23 |
| 01:00 | 0 | 0 | 0 | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 49-58 | 5 |
| 02:00 | 0 | 0 | 2 | 5 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 42-51 | 7 |
| 03:00 | 0 | 0 | 1 | 9 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 44-53 | 11 |
| 04:00 | 0 | 1 | 5 | 6 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 40-49 | 9 |
| 05:00 | 1 | 2 | 7 | 8 | 15 | 11 | 8 | **3** | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 50-59 | 23 |
| 06:00 | 3 | 1 | 9 | 38 | 50 | 35 | **12** | 1 | 0 | 0 | 0 | **1** | 0 | 0 | 150 | 48-57 | 81 |
| 07:00 | **29** | 13 | 59 | 131 | 95 | 34 | 8 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 372 | 45-54 | 168 |
| 08:00 | 26 | 4 | **69** | **143** | 96 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 366 | 44-53 | 188 |
| 09:00 | 13 | 10 | 64 | 138 | 96 | **45** | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 373 | 45-54 | 196 |
| 10:00 | 12 | 8 | 55 | 137 | 98 | 41 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 360 | 45-54 | 196 |
| 11:00 | 15 | **16** | 66 | 138 | **109** | 34 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **383** | 45-54 | 198 |
| 12 PM | 25 | 17 | 62 | 142 | 118 | **42** | 3 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 411 | 45-54 | 197 |
| 13:00 | 25 | 8 | 73 | 133 | 114 | 34 | **10** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 399 | 45-54 | 193 |
| 14:00 | 33 | 31 | 133 | 189 | 101 | 24 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 516 | 43-52 | 244 |
| 15:00 | 63 | 47 | 182 | 210 | 119 | 24 | 4 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 651 | 42-51 | 269 |
| 16:00 | **153** | **103** | **204** | 193 | 86 | 23 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 773 | 41-50 | 212 |
| 17:00 | 141 | 89 | 195 | **273** | 100 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **817** | 42-51 | 266 |
| 18:00 | 43 | 30 | 179 | 258 | **148** | 37 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 706 | 43-52 | 344 |
| 19:00 | 20 | 7 | 43 | 161 | 120 | 27 | 8 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 388 | 45-54 | 220 |
| 20:00 | 14 | 13 | 43 | 115 | 78 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 289 | 45-54 | 150 |
| 21:00 | 7 | 4 | 37 | 76 | 74 | 20 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 224 | 45-54 | 125 |
| 22:00 | 1 | 3 | 28 | 50 | 33 | 18 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 145 | 44-53 | 77 |
| 23:00 | 7 | 0 | 17 | 48 | 52 | 23 | 8 | **3** | 0 | 1 | 0 | 0 | 0 | 0 | 159 | 46-55 | 83 |
| Total | 631 | 409 | 1542 | 2613 | 1724 | 547 | 130 | 28 | 5 | 3 | 1 | 1 | 0 | 0 | 7634 | | |
| Percent | 8.3% | 5.4% | 20.2% | 34.2% | 22.6% | 7.2% | 1.7% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 11:00 | 08:00 | 08:00 | 11:00 | 09:00 | 06:00 | 05:00 | 07:00 | | | 06:00 | | | 11:00 | | |
| Vol. | 29 | 16 | 69 | 143 | 109 | 45 | 12 | 3 | 2 | | | 1 | | | 383 | | |
| PM Peak | 16:00 | 16:00 | 16:00 | 17:00 | 18:00 | 12:00 | 13:00 | 23:00 | 15:00 | 12:00 | 19:00 | | | | 17:00 | | |
| Vol. | 153 | 103 | 204 | 273 | 148 | 42 | 10 | 3 | 1 | 1 | 1 | | | | 817 | | |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Rt. 320 Sb
Location: 0.4 mi N of Springfield Rd
Counter: 24990
Weather: Clear

Site Code: 0902141
Station ID:
SB

Latitude: 39' 95143.0000 North

Sb Passing Lane

| Start Time | 1 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 90 | 91 95 | 96 999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | **1** | 0 | **7** | **11** | **13** | **7** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **40** | 47-56 | 21 |
| 01:00 | 1 | **1** | 3 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 48-57 | 5 |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 2 | 1 | 10 | 13 | 17 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | | |
| Percent | 3.8% | 1.9% | 18.9% | 24.5% | 32.1% | 17.0% | 1.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 00:00 | 01:00 | 00:00 | 00:00 | 00:00 | 00:00 | 00:00 | | | | | | | | 00:00 | | |
| Vol. | 1 | 1 | 7 | 11 | 13 | 7 | 1 | | | | | | | | 40 | | |
| PM Peak Vol. | | | | | | | | | | | | | | | | | |
| Total | 4484 | 2377 | 9735 | 19497 | 14640 | 5209 | 1224 | 236 | 62 | 16 | 6 | 2 | 0 | 0 | 57488 | | |
| Percent | 7.8% | 4.1% | 16.9% | 33.9% | 25.5% | 9.1% | 2.1% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 20 MPH |
| 50th Percentile : | 45 MPH |
| 85th Percentile : | 53 MPH |
| 95th Percentile : | 57 MPH |

| Stats | |
|---|---|
| 10 MPH Pace Speed : | 45-54 MPH |
| Number in Pace : | 25295 |
| Percent in Pace : | 44.0% |
| Number of Vehicles > 55 MPH : | 6755 |
| Percent of Vehicles > 55 MPH : | 11.8% |
| Mean Speed(Average) : | 41 MPH |

***REED ROAD***

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | 4 | 5 | 17 | 45 | 82 | 71 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 247 |
| 09:00 | 2 | 1 | 1 | 15 | 81 | 83 | 20 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 208 |
| 10:00 | 4 | 1 | 2 | 31 | 95 | 61 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 208 |
| 11:00 | 2 | 0 | 6 | 30 | 66 | 75 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 196 |
| 12 PM | 3 | 2 | 8 | 36 | 106 | 60 | 18 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 |
| 13:00 | 1 | 0 | 4 | 44 | 79 | 67 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 14:00 | 2 | 2 | 7 | 34 | 98 | 89 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 249 |
| 15:00 | 8 | 0 | 4 | 40 | 80 | 89 | 21 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 16:00 | 12 | 7 | 6 | 35 | 112 | 91 | 29 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 295 |
| 17:00 | 6 | 0 | 4 | 27 | 91 | 92 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 245 |
| 18:00 | 2 | 2 | 6 | 19 | 62 | 48 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 159 |
| 19:00 | 1 | 0 | 1 | 10 | 43 | 41 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 20:00 | 1 | 0 | 7 | 18 | 41 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 |
| 21:00 | 1 | 0 | 1 | 5 | 17 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 22:00 | 0 | 0 | 0 | 4 | 9 | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 23:00 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 49 | 20 | 74 | 395 | 1065 | 903 | 236 | 38 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2782 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/1 4 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 01:00 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:00 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 4 | 0 | 2 | 4 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 05:00 | 1 | 0 | 0 | 5 | 19 | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 06:00 | 2 | 0 | 1 | 8 | 34 | 54 | 18 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 121 |
| 07:00 | 4 | 0 | 3 | 35 | 66 | 78 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 205 |
| 08:00 | 1 | 0 | 6 | 44 | 137 | 67 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 272 |
| 09:00 | 3 | 0 | 6 | 35 | 97 | 72 | 19 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 239 |
| 10:00 | 1 | 0 | 4 | 30 | 116 | 62 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 230 |
| 11:00 | 4 | 1 | 6 | 38 | 100 | 69 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 232 |
| 12 PM | 3 | 0 | 9 | 64 | 133 | 61 | 14 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 287 |
| 13:00 | 4 | 0 | 3 | 31 | 88 | 59 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 195 |
| 14:00 | 5 | 0 | 1 | 31 | 86 | 77 | 23 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 227 |
| 15:00 | 1 | 0 | 5 | 36 | 114 | 65 | 34 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260 |
| 16:00 | 3 | 0 | 2 | 30 | 108 | 110 | 33 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 289 |
| 17:00 | 4 | 1 | 1 | 19 | 81 | 114 | 30 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 255 |
| 18:00 | 1 | 0 | 1 | 17 | 81 | 66 | 24 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 197 |
| 19:00 | 1 | 0 | 1 | 13 | 49 | 52 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 20:00 | 1 | 0 | 4 | 17 | 34 | 22 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 21:00 | 0 | 1 | 2 | 10 | 18 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 22:00 | 2 | 0 | 3 | 2 | 11 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 33 |
| 23:00 | 2 | 0 | 0 | 4 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 48 | 3 | 62 | 477 | 1384 | 1070 | 295 | 49 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 3397 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:00 | 1 | 0 | 1 | 5 | 6 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 05:00 | 1 | 0 | 0 | 9 | 17 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 06:00 | 2 | 1 | 0 | 14 | 32 | 46 | 14 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 07:00 | 1 | 0 | 11 | 37 | 77 | 67 | 15 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 215 |
| 08:00 | 2 | 0 | 13 | 31 | 92 | 81 | 21 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 249 |
| 09:00 | 6 | 2 | 3 | 33 | 94 | 84 | 16 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 244 |
| 10:00 | 0 | 0 | 2 | 32 | 65 | 62 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| 11:00 | 4 | 1 | 9 | 41 | 82 | 60 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 12 PM | 2 | 0 | 2 | 26 | 109 | 69 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 224 |
| 13:00 | 16 | 1 | 10 | 18 | 41 | 14 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 14:00 | 11 | 2 | 12 | 26 | 97 | 47 | 27 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 227 |
| 15:00 | 8 | 0 | 3 | 28 | 81 | 72 | 24 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 227 |
| 16:00 | 3 | 0 | 3 | 39 | 109 | 84 | 19 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 264 |
| 17:00 | 0 | 0 | 2 | 16 | 84 | 95 | 34 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 240 |
| 18:00 | 0 | 0 | 2 | 19 | 88 | 82 | 31 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 229 |
| 19:00 | 1 | 1 | 3 | 21 | 51 | 37 | 13 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 131 |
| 20:00 | 2 | 0 | 2 | 14 | 52 | 31 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 21:00 | 0 | 0 | 1 | 6 | 22 | 20 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 22:00 | 1 | 0 | 0 | 4 | 18 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 23:00 | 2 | 0 | 0 | 1 | 3 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 63 | 8 | 81 | 423 | 1223 | 975 | 289 | 63 | 15 | 4 | 1 | 0 | 0 | 0 | 0 | 3145 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/1 4 | 4 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 01:00 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:00 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 0 | 0 | 1 | 4 | 4 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 05:00 | 1 | 0 | 0 | 13 | 21 | 7 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 06:00 | 3 | 0 | 2 | 13 | 42 | 27 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 07:00 | 2 | 0 | 1 | 26 | 60 | 69 | 18 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 181 |
| 08:00 | 1 | 0 | 2 | 38 | 99 | 79 | 30 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 256 |
| 09:00 | 1 | 1 | 5 | 24 | 87 | 71 | 10 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 204 |
| 10:00 | 6 | 0 | 2 | 22 | 75 | 67 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 |
| 11:00 | 1 | 0 | 8 | 26 | 87 | 68 | 19 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 213 |
| 12 PM | 1 | 0 | 7 | 54 | 114 | 89 | 21 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 293 |
| 13:00 | 2 | 0 | 11 | 30 | 96 | 66 | 28 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 237 |
| 14:00 | 3 | 0 | 2 | 40 | 92 | 86 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 247 |
| 15:00 | 2 | 1 | 5 | 28 | 92 | 87 | 26 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 251 |
| 16:00 | 1 | 0 | 5 | 26 | 102 | 90 | 30 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 257 |
| 17:00 | 0 | 0 | 2 | 27 | 94 | 83 | 19 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 231 |
| 18:00 | 0 | 0 | 2 | 16 | 71 | 66 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 |
| 19:00 | 1 | 0 | 4 | 18 | 42 | 46 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 20:00 | 0 | 0 | 3 | 10 | 27 | 17 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 21:00 | 0 | 0 | 3 | 8 | 26 | 15 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 22:00 | 1 | 0 | 1 | 7 | 14 | 10 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 23:00 | 0 | 0 | 2 | 5 | 6 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total | 30 | 2 | 69 | 438 | 1254 | 1058 | 307 | 57 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 3232 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start | 1 | 21 | 26 | 31 | 36 | 41 | 46 | 51 | 56 | 61 | 66 | 71 | 76 | 81 | 86 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 9999 | Total |
| 09/06/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 2 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 01:00 | 0 | 0 | 1 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 02:00 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 05:00 | 0 | 0 | 1 | 3 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 06:00 | 0 | 0 | 0 | 2 | 9 | 9 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 07:00 | 1 | 1 | 0 | 5 | 15 | 21 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 08:00 | 4 | 1 | 2 | 12 | 42 | 37 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 09:00 | 5 | 2 | 2 | 17 | 66 | 57 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 174 |
| 10:00 | 5 | 0 | 4 | 21 | 80 | 82 | 35 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 232 |
| 11:00 | 3 | 0 | 2 | 20 | 71 | 90 | 30 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| 12 PM | 2 | 0 | 4 | 21 | 86 | 88 | 23 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 233 |
| 13:00 | 0 | 1 | 1 | 13 | 86 | 85 | 30 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 220 |
| 14:00 | 2 | 0 | 0 | 15 | 57 | 80 | 27 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 189 |
| 15:00 | 1 | 1 | 8 | 28 | 60 | 73 | 23 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 197 |
| 16:00 | 3 | 2 | 4 | 16 | 53 | 55 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 17:00 | 2 | 0 | 3 | 10 | 49 | 34 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 18:00 | 2 | 0 | 1 | 7 | 25 | 28 | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 19:00 | 3 | 2 | 3 | 14 | 26 | 20 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 20:00 | 0 | 0 | 2 | 3 | 19 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 21:00 | 0 | 0 | 1 | 6 | 12 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 22:00 | 2 | 0 | 2 | 8 | 15 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 23:00 | 0 | 0 | 0 | 4 | 10 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total | 35 | 10 | 41 | 232 | 801 | 803 | 267 | 51 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 2247 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/1 4 | 0 | 0 | 0 | 1 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 03:00 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 05:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 06:00 | 0 | 0 | 1 | 1 | 3 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 07:00 | 0 | 1 | 0 | 3 | 6 | 7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 08:00 | 3 | 0 | 0 | 6 | 25 | 25 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 09:00 | 1 | 0 | 1 | 8 | 39 | 42 | 18 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 10:00 | 2 | 0 | 4 | 16 | 44 | 49 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 11:00 | 1 | 0 | 2 | 9 | 33 | 50 | 28 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 129 |
| 12 PM | 0 | 0 | 3 | 17 | 52 | 69 | 21 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 168 |
| 13:00 | 1 | 0 | 2 | 16 | 44 | 64 | 17 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 14:00 | 2 | 0 | 2 | 10 | 48 | 47 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 15:00 | 1 | 0 | 1 | 6 | 43 | 53 | 22 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| 16:00 | 1 | 0 | 3 | 7 | 32 | 52 | 14 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 17:00 | 3 | 0 | 1 | 14 | 37 | 28 | 25 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 18:00 | 0 | 1 | 1 | 9 | 29 | 28 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 19:00 | 2 | 0 | 6 | 10 | 24 | 26 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 20:00 | 0 | 0 | 1 | 9 | 14 | 5 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 21:00 | 1 | 0 | 1 | 5 | 11 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 22:00 | 1 | 0 | 0 | 1 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 23:00 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 23 | 2 | 29 | 153 | 509 | 563 | 215 | 39 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1543 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/1 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 03:00 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 0 | 0 | 4 | 1 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 05:00 | 0 | 0 | 3 | 9 | 15 | 10 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 06:00 | 1 | 0 | 2 | 10 | 38 | 29 | 18 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 102 |
| 07:00 | 2 | 0 | 0 | 15 | 91 | 82 | 25 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 220 |
| 08:00 | 0 | 0 | 2 | 31 | 88 | 80 | 24 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 230 |
| 09:00 | 2 | 4 | 3 | 27 | 107 | 66 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224 |
| 10:00 | 1 | 1 | 11 | 39 | 79 | 62 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 205 |
| 11:00 | 3 | 2 | 7 | 33 | 71 | 53 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 181 |
| 12 PM | 4 | 2 | 10 | 34 | 113 | 56 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 241 |
| 13:00 | 0 | 0 | 4 | 47 | 108 | 62 | 15 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 241 |
| 14:00 | 2 | 0 | 6 | 30 | 81 | 58 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 201 |
| 15:00 | 1 | 1 | 4 | 34 | 95 | 71 | 17 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 228 |
| 16:00 | 1 | 1 | 2 | 37 | 106 | 107 | 21 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 281 |
| 17:00 | 3 | 0 | 1 | 16 | 99 | 127 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 276 |
| 18:00 | 2 | 0 | 2 | 15 | 66 | 95 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 202 |
| 19:00 | 2 | 0 | 3 | 22 | 37 | 51 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| 20:00 | 2 | 0 | 3 | 7 | 36 | 28 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 21:00 | 0 | 0 | 1 | 4 | 26 | 18 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 22:00 | 1 | 0 | 0 | 4 | 12 | 7 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 23:00 | 1 | 0 | 0 | 3 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 28 | 11 | 69 | 419 | 1280 | 1068 | 265 | 54 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 3201 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/1 4 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:00 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:00 | 0 | 0 | 4 | 3 | 11 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 05:00 | 0 | 1 | 1 | 10 | 16 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 06:00 | 2 | 1 | 1 | 11 | 38 | 46 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 110 |
| 07:00 | 4 | 1 | 6 | 26 | 74 | 64 | 25 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 206 |
| 08:00 | 4 | 1 | 6 | 46 | 108 | 78 | 24 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 273 |
| 09:00 | 0 | 1 | 6 | 37 | 100 | 64 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| 10:00 | 2 | 0 | 4 | 31 | 78 | 50 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |
| 11:00 | 2 | 0 | 7 | 40 | 80 | 56 | 10 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 197 |
| 12 PM | 0 | 0 | 2 | 46 | 98 | 70 | 19 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 237 |
| 13:00 | 2 | 1 | 5 | 50 | 85 | 58 | 11 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 217 |
| 14:00 | 2 | 0 | 7 | 42 | 100 | 76 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 15:00 | 2 | 2 | 7 | 37 | 94 | 58 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 225 |
| 16:00 | 2 | 0 | 6 | 45 | 92 | 86 | 23 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 262 |
| 17:00 | 0 | 0 | 1 | 32 | 110 | 100 | 27 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| 18:00 | 2 | 1 | 2 | 22 | 73 | 77 | 15 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 198 |
| 19:00 | 1 | 0 | 0 | 18 | 69 | 28 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 20:00 | 4 | 1 | 1 | 15 | 35 | 24 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 92 |
| 21:00 | 1 | 2 | 1 | 8 | 36 | 14 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 22:00 | 1 | 0 | 1 | 1 | 20 | 8 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 23:00 | 2 | 0 | 0 | 4 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 34 | 12 | 70 | 528 | 1330 | 978 | 275 | 48 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 3288 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Travel Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:00 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 0 | 0 | 1 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Grand Total | 310 | 68 | 496 | 3070 | 8851 | 7419 | 2149 | 399 | 66 | 12 | 3 | 3 | 1 | 0 | 0 | 22847 |

Stats

| | |
|---|---|
| 15th Percentile : | 33 MPH |
| 50th Percentile : | 39 MPH |
| 85th Percentile : | 44 MPH |
| 95th Percentile : | 48 MPH |
| Mean Speed(Average) : | 39 MPH |
| 10 MPH Pace Speed : | 35-44 MPH |
| Number in Pace : | 14665 |
| Percent in Pace : | 64.2% |
| Number of Vehicles > 55 MPH : | 85 |
| Percent of Vehicles > 55 MPH : | 0.4% |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | 13 | 13 | 23 | 23 | 23 | 25 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 09:00 | 6 | 2 | 11 | 31 | 19 | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 10:00 | 19 | 3 | 10 | 22 | 32 | 15 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 11:00 | 15 | 0 | 6 | 17 | 28 | 19 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 12 PM | 24 | 1 | 5 | 29 | 27 | 18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 |
| 13:00 | 6 | 1 | 8 | 24 | 28 | 18 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| 14:00 | 9 | 0 | 8 | 24 | 31 | 29 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 114 |
| 15:00 | 11 | 1 | 7 | 36 | 39 | 35 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 16:00 | 23 | 1 | 8 | 12 | 33 | 23 | 10 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 113 |
| 17:00 | 9 | 0 | 7 | 16 | 45 | 23 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| 18:00 | 2 | 1 | 7 | 17 | 36 | 22 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 92 |
| 19:00 | 2 | 1 | 10 | 28 | 34 | 16 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 20:00 | 0 | 2 | 7 | 27 | 18 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 21:00 | 1 | 0 | 3 | 8 | 17 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 22:00 | 0 | 0 | 1 | 3 | 11 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 23:00 | 1 | 0 | 1 | 7 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Total | 141 | 26 | 122 | 324 | 430 | 292 | 108 | 19 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1466 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/1 4 | 0 | 0 | 0 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:00 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 06:00 | 1 | 0 | 1 | 5 | 4 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 07:00 | 3 | 0 | 5 | 18 | 21 | 22 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 08:00 | 3 | 0 | 12 | 34 | 33 | 26 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 116 |
| 09:00 | 8 | 1 | 6 | 30 | 30 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| 10:00 | 10 | 2 | 11 | 30 | 20 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 11:00 | 33 | 0 | 6 | 20 | 25 | 20 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 12 PM | 27 | 0 | 11 | 26 | 23 | 20 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 13:00 | 10 | 0 | 2 | 18 | 32 | 14 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 14:00 | 22 | 1 | 6 | 20 | 28 | 23 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 109 |
| 15:00 | 15 | 3 | 10 | 30 | 37 | 31 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 |
| 16:00 | 19 | 1 | 5 | 24 | 35 | 37 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 |
| 17:00 | 8 | 1 | 2 | 24 | 44 | 31 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 |
| 18:00 | 4 | 0 | 11 | 27 | 49 | 38 | 8 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 140 |
| 19:00 | 2 | 1 | 2 | 22 | 44 | 22 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 20:00 | 0 | 1 | 6 | 12 | 31 | 19 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 21:00 | 0 | 1 | 2 | 12 | 26 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 22:00 | 0 | 0 | 1 | 12 | 14 | 9 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 23:00 | 0 | 1 | 2 | 2 | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total | 165 | 14 | 104 | 369 | 508 | 358 | 107 | 19 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 1653 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/1 4 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 | 1 | 0 | 1 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 06:00 | 1 | 0 | 0 | 4 | 5 | 6 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| 07:00 | 3 | 1 | 4 | 13 | 21 | 21 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 08:00 | 4 | 3 | 11 | 22 | 35 | 14 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 09:00 | 4 | 1 | 9 | 23 | 19 | 8 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 10:00 | 5 | 0 | 8 | 20 | 18 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 11:00 | 32 | 0 | 12 | 22 | 28 | 20 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 12 PM | 44 | 2 | 13 | 28 | 27 | 17 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| 13:00 | 14 | 9 | 38 | 73 | 49 | 15 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 205 |
| 14:00 | 12 | 3 | 7 | 25 | 35 | 36 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 15:00 | 14 | 2 | 9 | 27 | 46 | 25 | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 136 |
| 16:00 | 18 | 0 | 5 | 21 | 45 | 30 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 17:00 | 13 | 0 | 4 | 31 | 40 | 48 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 |
| 18:00 | 19 | 0 | 4 | 25 | 47 | 41 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| 19:00 | 2 | 1 | 8 | 21 | 36 | 30 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 20:00 | 1 | 0 | 6 | 20 | 18 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 21:00 | 0 | 0 | 5 | 11 | 24 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 22:00 | 2 | 0 | 0 | 8 | 13 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 23:00 | 0 | 1 | 1 | 4 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Total | 189 | 24 | 147 | 402 | 518 | 386 | 128 | 27 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1825 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/1 4 | 0 | 0 | 0 | 4 | 7 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 01:00 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 | 1 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 06:00 | 3 | 0 | 3 | 2 | 7 | 10 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 07:00 | 4 | 0 | 5 | 17 | 20 | 13 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 08:00 | 9 | 3 | 14 | 30 | 36 | 14 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 122 |
| 09:00 | 8 | 2 | 9 | 24 | 21 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 10:00 | 18 | 0 | 8 | 25 | 21 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| 11:00 | 30 | 2 | 9 | 21 | 23 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 |
| 12 PM | 59 | 1 | 5 | 17 | 40 | 22 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| 13:00 | 17 | 1 | 7 | 31 | 43 | 27 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| 14:00 | 17 | 1 | 4 | 15 | 28 | 27 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 15:00 | 19 | 0 | 7 | 14 | 37 | 34 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 |
| 16:00 | 29 | 2 | 7 | 25 | 36 | 41 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 |
| 17:00 | 19 | 0 | 9 | 29 | 28 | 30 | 9 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 18:00 | 4 | 1 | 5 | 15 | 32 | 38 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 19:00 | 1 | 2 | 7 | 21 | 35 | 25 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 20:00 | 2 | 1 | 4 | 13 | 32 | 21 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 21:00 | 0 | 1 | 9 | 13 | 24 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 22:00 | 3 | 0 | 4 | 11 | 31 | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 23:00 | 1 | 0 | 2 | 8 | 8 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Total | 245 | 18 | 121 | 338 | 512 | 386 | 123 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1764 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/1 4 | 0 | 0 | 1 | 2 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 01:00 | 0 | 1 | 0 | 2 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:00 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 05:00 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 06:00 | 0 | 0 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 07:00 | 0 | 2 | 4 | 10 | 6 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 08:00 | 3 | 1 | 6 | 12 | 12 | 9 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 09:00 | 3 | 2 | 4 | 9 | 18 | 10 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 56 |
| 10:00 | 9 | 0 | 6 | 11 | 39 | 25 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 11:00 | 41 | 4 | 9 | 23 | 39 | 32 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 164 |
| 12 PM | 12 | 0 | 8 | 29 | 68 | 44 | 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 |
| 13:00 | 4 | 1 | 3 | 20 | 31 | 39 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 |
| 14:00 | 6 | 0 | 9 | 19 | 37 | 41 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 15:00 | 15 | 2 | 12 | 28 | 51 | 42 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 169 |
| 16:00 | 5 | 0 | 6 | 17 | 58 | 38 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 17:00 | 5 | 0 | 6 | 22 | 36 | 34 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 18:00 | 2 | 2 | 4 | 19 | 36 | 29 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 19:00 | 1 | 1 | 3 | 16 | 22 | 22 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 20:00 | 1 | 1 | 1 | 10 | 18 | 21 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 21:00 | 1 | 0 | 2 | 10 | 27 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 22:00 | 1 | 1 | 1 | 10 | 18 | 15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 23:00 | 0 | 2 | 2 | 7 | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Total | 109 | 20 | 87 | 282 | 551 | 447 | 140 | 20 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1661 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/1 4 | 0 | 0 | 0 | 1 | 10 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 01:00 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 06:00 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 07:00 | 0 | 0 | 3 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 08:00 | 3 | 0 | 2 | 2 | 4 | 12 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 09:00 | 0 | 0 | 3 | 8 | 19 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 10:00 | 1 | 2 | 3 | 11 | 14 | 15 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 11:00 | 4 | 0 | 4 | 12 | 37 | 23 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 12 PM | 9 | 0 | 6 | 10 | 30 | 44 | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 13:00 | 12 | 0 | 2 | 14 | 33 | 31 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 14:00 | 4 | 0 | 1 | 24 | 28 | 38 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| 15:00 | 4 | 0 | 1 | 14 | 24 | 31 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| 16:00 | 21 | 1 | 3 | 21 | 40 | 40 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 |
| 17:00 | 4 | 0 | 3 | 18 | 25 | 36 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 18:00 | 0 | 2 | 3 | 17 | 34 | 31 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 19:00 | 0 | 0 | 4 | 15 | 25 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 20:00 | 0 | 1 | 4 | 10 | 20 | 22 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 21:00 | 0 | 0 | 2 | 5 | 12 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 22:00 | 0 | 0 | 4 | 10 | 14 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 23:00 | 0 | 1 | 2 | 6 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Total | 62 | 8 | 51 | 205 | 385 | 392 | 112 | 28 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1248 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start | 1 | 21 | 26 | 31 | 36 | 41 | 46 | 51 | 56 | 61 | 66 | 71 | 76 | 81 | 86 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 9999 | Total |
| 09/08/1 | | | | | | | | | | | | | | | | |
| 4 | 0 | 0 | 0 | 2 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:00 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 05:00 | 1 | 0 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 06:00 | 2 | 1 | 0 | 5 | 4 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 07:00 | 4 | 1 | 3 | 16 | 26 | 24 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| 08:00 | 2 | 5 | 15 | 28 | 22 | 27 | 14 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 09:00 | 3 | 2 | 16 | 29 | 29 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 10:00 | 7 | 1 | 10 | 22 | 12 | 19 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 11:00 | 2 | 1 | 11 | 17 | 19 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 12 PM | 5 | 1 | 6 | 21 | 31 | 22 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 13:00 | 3 | 2 | 9 | 15 | 23 | 26 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 14:00 | 6 | 2 | 15 | 22 | 24 | 26 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 15:00 | 2 | 4 | 10 | 28 | 38 | 28 | 15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 16:00 | 7 | 3 | 8 | 24 | 47 | 37 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 |
| 17:00 | 1 | 0 | 7 | 20 | 41 | 28 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 18:00 | 2 | 0 | 6 | 16 | 39 | 36 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 19:00 | 3 | 1 | 5 | 25 | 38 | 18 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 20:00 | 0 | 0 | 8 | 25 | 32 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 21:00 | 0 | 0 | 10 | 12 | 15 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 22:00 | 1 | 1 | 3 | 8 | 11 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 23:00 | 0 | 1 | 3 | 3 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Total | 53 | 26 | 146 | 342 | 468 | 369 | 110 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1536 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/1 4 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 06:00 | 1 | 0 | 1 | 3 | 4 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 07:00 | 6 | 2 | 7 | 8 | 13 | 13 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 08:00 | 6 | 1 | 20 | 48 | 53 | 29 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 176 |
| 09:00 | 4 | 2 | 12 | 36 | 37 | 16 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 10:00 | 5 | 1 | 5 | 19 | 23 | 11 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 11:00 | 4 | 4 | 12 | 20 | 28 | 17 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 12 PM | 3 | 1 | 5 | 26 | 30 | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 13:00 | 7 | 0 | 19 | 27 | 37 | 9 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| 14:00 | 14 | 5 | 18 | 27 | 41 | 20 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| 15:00 | 7 | 0 | 7 | 27 | 44 | 29 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| 16:00 | 3 | 4 | 11 | 32 | 48 | 30 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 17:00 | 2 | 2 | 10 | 21 | 44 | 35 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 |
| 18:00 | 5 | 1 | 7 | 27 | 30 | 33 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 114 |
| 19:00 | 2 | 1 | 3 | 22 | 37 | 15 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 20:00 | 4 | 0 | 3 | 13 | 27 | 16 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 21:00 | 1 | 0 | 5 | 14 | 19 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 22:00 | 0 | 0 | 0 | 5 | 7 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 23:00 | 2 | 0 | 2 | 4 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Total | 76 | 24 | 149 | 383 | 536 | 328 | 107 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1624 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Eb
Location: 0.2 mi E of Rt. 320
Counter: 24306
Weather: Clear

Site Code: 0902142
Station ID:
EB

Latitude: 39' 95850.0000 North

Eb Passing Lane

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:00 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 0 | 0 | 2 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Grand Total | 1040 | 160 | 929 | 2649 | 3910 | 2959 | 936 | 168 | 30 | 5 | 1 | 0 | 0 | 0 | 0 | 12787 |

Stats

| | |
|---|---|
| 15th Percentile : | 16 MPH |
| 50th Percentile : | 36 MPH |
| 85th Percentile : | 43 MPH |
| 95th Percentile : | 47 MPH |
| Mean Speed(Average) : | 33 MPH |
| 10 MPH Pace Speed : | 34-43 MPH |
| Number in Pace : | 6045 |
| Percent in Pace : | 47.3% |
| Number of Vehicles > 55 MPH : | 36 |
| Percent of Vehicles > 55 MPH : | 0.3% |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/02/14 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | 10 | 22 | 66 | 126 | 74 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 309 |
| 09:00 | 8 | 15 | 75 | 111 | 65 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 284 |
| 10:00 | 19 | 21 | 59 | 102 | 55 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 |
| 11:00 | 19 | 7 | 60 | 111 | 80 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 285 |
| 12 PM | 65 | 9 | 51 | 128 | 56 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 322 |
| 13:00 | 60 | 15 | 55 | 127 | 47 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 314 |
| 14:00 | 58 | 10 | 48 | 127 | 48 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 294 |
| 15:00 | 75 | 8 | 50 | 142 | 73 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 356 |
| 16:00 | 37 | 8 | 51 | 166 | 86 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 356 |
| 17:00 | 27 | 15 | 90 | 146 | 57 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 344 |
| 18:00 | 3 | 13 | 60 | 129 | 41 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 252 |
| 19:00 | 2 | 8 | 51 | 90 | 36 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 189 |
| 20:00 | 0 | 5 | 28 | 48 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 21:00 | 1 | 2 | 9 | 37 | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 22:00 | 1 | 1 | 9 | 17 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 23:00 | 0 | 1 | 7 | 16 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Total | 385 | 160 | 769 | 1623 | 781 | 101 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3831 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/03/1 4 | 0 | 0 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 01:00 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 2 | 3 | 2 | 9 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 05:00 | 1 | 5 | 12 | 19 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 06:00 | 6 | 8 | 39 | 61 | 40 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 161 |
| 07:00 | 14 | 31 | 80 | 133 | 74 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 342 |
| 08:00 | 7 | 39 | 72 | 147 | 54 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 330 |
| 09:00 | 4 | 13 | 93 | 143 | 50 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 305 |
| 10:00 | 10 | 24 | 75 | 127 | 38 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 277 |
| 11:00 | 28 | 22 | 52 | 107 | 55 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| 12 PM | 22 | 6 | 70 | 184 | 76 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 366 |
| 13:00 | 82 | 13 | 56 | 101 | 59 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 318 |
| 14:00 | 60 | 6 | 39 | 110 | 63 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 283 |
| 15:00 | 12 | 17 | 85 | 169 | 54 | 6 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 349 |
| 16:00 | 22 | 9 | 112 | 177 | 69 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 398 |
| 17:00 | 4 | 7 | 99 | 206 | 53 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 373 |
| 18:00 | 6 | 8 | 60 | 132 | 59 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 270 |
| 19:00 | 1 | 6 | 62 | 105 | 53 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 230 |
| 20:00 | 6 | 5 | 24 | 71 | 37 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 147 |
| 21:00 | 1 | 2 | 12 | 53 | 23 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 22:00 | 0 | 3 | 12 | 20 | 12 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 23:00 | 0 | 3 | 6 | 13 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| Total | 288 | 231 | 1064 | 2102 | 902 | 98 | 14 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 4705 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/04/1 4 | 0 | 0 | 0 | 5 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 01:00 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 3 | 4 | 3 | 9 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 05:00 | 2 | 3 | 11 | 18 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 06:00 | 4 | 10 | 23 | 72 | 36 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154 |
| 07:00 | 19 | 15 | 87 | 146 | 83 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 367 |
| 08:00 | 24 | 20 | 82 | 146 | 53 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 337 |
| 09:00 | 18 | 17 | 93 | 107 | 57 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 301 |
| 10:00 | 5 | 28 | 63 | 122 | 50 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 280 |
| 11:00 | 7 | 35 | 70 | 116 | 56 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 298 |
| 12 PM | 6 | 16 | 90 | 154 | 67 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 341 |
| 13:00 | 72 | 19 | 53 | 97 | 49 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 297 |
| 14:00 | 82 | 7 | 42 | 107 | 41 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 285 |
| 15:00 | 65 | 11 | 54 | 141 | 62 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 343 |
| 16:00 | 63 | 13 | 76 | 152 | 75 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 385 |
| 17:00 | 8 | 16 | 86 | 178 | 71 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 363 |
| 18:00 | 6 | 6 | 58 | 127 | 75 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 281 |
| 19:00 | 0 | 6 | 54 | 114 | 60 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 20:00 | 2 | 7 | 28 | 70 | 41 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 |
| 21:00 | 1 | 0 | 8 | 30 | 26 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 22:00 | 2 | 3 | 6 | 12 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 23:00 | 0 | 2 | 5 | 14 | 13 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| Total | 390 | 238 | 994 | 1943 | 956 | 154 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4684 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/05/1 4 | 0 | 0 | 4 | 10 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 01:00 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:00 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 0 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:00 | 0 | 2 | 1 | 5 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 05:00 | 5 | 6 | 9 | 24 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 06:00 | 4 | 13 | 26 | 59 | 44 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 |
| 07:00 | 8 | 17 | 74 | 128 | 75 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 305 |
| 08:00 | 13 | 27 | 87 | 150 | 48 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 333 |
| 09:00 | 9 | 20 | 99 | 115 | 37 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 284 |
| 10:00 | 14 | 21 | 69 | 124 | 44 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 280 |
| 11:00 | 4 | 35 | 88 | 132 | 56 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 326 |
| 12 PM | 9 | 25 | 74 | 209 | 57 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 385 |
| 13:00 | 16 | 14 | 81 | 150 | 70 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 339 |
| 14:00 | 24 | 25 | 76 | 146 | 63 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 345 |
| 15:00 | 7 | 11 | 108 | 171 | 61 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 375 |
| 16:00 | 3 | 13 | 106 | 169 | 74 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 371 |
| 17:00 | 8 | 16 | 80 | 155 | 58 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 |
| 18:00 | 3 | 9 | 77 | 122 | 44 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 |
| 19:00 | 2 | 5 | 55 | 77 | 46 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 190 |
| 20:00 | 0 | 4 | 33 | 68 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 21:00 | 3 | 3 | 10 | 25 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| 22:00 | 0 | 1 | 16 | 29 | 21 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 23:00 | 0 | 1 | 4 | 12 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| Total | 132 | 268 | 1182 | 2084 | 876 | 126 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4682 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/06/1 4 | 0 | 0 | 6 | 22 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 01:00 | 1 | 0 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 02:00 | 0 | 0 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 04:00 | 0 | 1 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 05:00 | 3 | 2 | 1 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 06:00 | 2 | 0 | 13 | 26 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 07:00 | 3 | 6 | 20 | 38 | 17 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 08:00 | 4 | 5 | 34 | 78 | 45 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| 09:00 | 2 | 15 | 99 | 127 | 66 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 316 |
| 10:00 | 52 | 1 | 48 | 144 | 83 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 351 |
| 11:00 | 60 | 7 | 41 | 140 | 105 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 368 |
| 12 PM | 107 | 3 | 44 | 120 | 69 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 354 |
| 13:00 | 88 | 0 | 29 | 112 | 86 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 |
| 14:00 | 75 | 5 | 26 | 107 | 71 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 293 |
| 15:00 | 19 | 4 | 53 | 131 | 67 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 280 |
| 16:00 | 4 | 6 | 51 | 98 | 38 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 210 |
| 17:00 | 3 | 6 | 40 | 72 | 42 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| 18:00 | 4 | 4 | 29 | 68 | 28 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 19:00 | 2 | 6 | 34 | 58 | 31 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 20:00 | 1 | 2 | 17 | 34 | 21 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 21:00 | 0 | 2 | 8 | 25 | 17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 22:00 | 1 | 3 | 8 | 22 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 23:00 | 0 | 0 | 4 | 8 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| Total | 431 | 78 | 615 | 1448 | 835 | 137 | 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3558 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/07/1 4 | 1 | 1 | 3 | 2 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 01:00 | 0 | 1 | 1 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 02:00 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:00 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:00 | 1 | 1 | 4 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 06:00 | 0 | 4 | 3 | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 07:00 | 0 | 2 | 8 | 30 | 17 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 08:00 | 0 | 3 | 18 | 56 | 42 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| 09:00 | 7 | 8 | 37 | 67 | 59 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 195 |
| 10:00 | 4 | 3 | 50 | 130 | 66 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 |
| 11:00 | 1 | 6 | 36 | 126 | 91 | 18 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 284 |
| 12 PM | 2 | 16 | 52 | 137 | 89 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 310 |
| 13:00 | 13 | 2 | 50 | 122 | 61 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 266 |
| 14:00 | 42 | 2 | 20 | 91 | 63 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| 15:00 | 36 | 1 | 23 | 85 | 60 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 209 |
| 16:00 | 2 | 7 | 40 | 93 | 35 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 185 |
| 17:00 | 1 | 7 | 24 | 64 | 33 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 18:00 | 3 | 2 | 31 | 77 | 34 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| 19:00 | 4 | 3 | 19 | 49 | 28 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 20:00 | 0 | 2 | 17 | 30 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 21:00 | 0 | 1 | 7 | 19 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 22:00 | 1 | 2 | 5 | 10 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 23:00 | 0 | 0 | 1 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total | 118 | 75 | 450 | 1219 | 737 | 145 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2763 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/08/1 4 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 01:00 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 | 2 | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 04:00 | 3 | 4 | 2 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:00 | 5 | 3 | 8 | 24 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 06:00 | 3 | 6 | 19 | 67 | 47 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 |
| 07:00 | 12 | 14 | 88 | 127 | 76 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 |
| 08:00 | 17 | 16 | 80 | 114 | 69 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 306 |
| 09:00 | 10 | 29 | 100 | 103 | 49 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 299 |
| 10:00 | 17 | 26 | 74 | 100 | 35 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 258 |
| 11:00 | 12 | 36 | 89 | 111 | 45 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 299 |
| 12 PM | 14 | 21 | 113 | 136 | 44 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 336 |
| 13:00 | 9 | 26 | 103 | 130 | 49 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |
| 14:00 | 10 | 33 | 98 | 90 | 52 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 291 |
| 15:00 | 6 | 8 | 88 | 140 | 58 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 312 |
| 16:00 | 11 | 13 | 95 | 174 | 63 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 357 |
| 17:00 | 3 | 17 | 117 | 153 | 76 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 376 |
| 18:00 | 0 | 8 | 80 | 124 | 71 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 291 |
| 19:00 | 4 | 7 | 47 | 101 | 50 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 215 |
| 20:00 | 3 | 12 | 37 | 46 | 41 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 |
| 21:00 | 3 | 1 | 8 | 27 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 22:00 | 0 | 1 | 4 | 20 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 23:00 | 0 | 0 | 3 | 11 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Total | 144 | 281 | 1260 | 1808 | 893 | 115 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4515 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/09/1 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:00 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:00 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:00 | 2 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:00 | 5 | 4 | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 05:00 | 4 | 3 | 10 | 22 | 18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 06:00 | 3 | 10 | 30 | 72 | 42 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| 07:00 | 2 | 12 | 70 | 163 | 67 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 |
| 08:00 | 17 | 20 | 107 | 146 | 59 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 354 |
| 09:00 | 12 | 24 | 80 | 114 | 41 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 276 |
| 10:00 | 17 | 12 | 73 | 112 | 39 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260 |
| 11:00 | 6 | 15 | 100 | 115 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 292 |
| 12 PM | 2 | 27 | 97 | 157 | 46 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 339 |
| 13:00 | 5 | 27 | 89 | 128 | 41 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 296 |
| 14:00 | 11 | 34 | 86 | 128 | 31 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 292 |
| 15:00 | 3 | 19 | 87 | 140 | 64 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 323 |
| 16:00 | 3 | 21 | 93 | 141 | 70 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 337 |
| 17:00 | 5 | 22 | 118 | 173 | 63 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 383 |
| 18:00 | 3 | 12 | 74 | 107 | 68 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 270 |
| 19:00 | 6 | 8 | 50 | 79 | 33 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 185 |
| 20:00 | 5 | 6 | 37 | 59 | 45 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 161 |
| 21:00 | 1 | 0 | 9 | 31 | 25 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 22:00 | 0 | 2 | 1 | 14 | 21 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 23:00 | 0 | 0 | 2 | 15 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Total | 112 | 280 | 1221 | 1922 | 854 | 115 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4518 |

# Tri-State Traffic Data, Inc.

184 Baker Road
Coatesville, PA 19320
(610) 466-1469 TSTData.com

Road: Reed Rd Wb
Location: 0.2 mi E of Rt. 320
Counter: 22611
Weather: Clear

Site Code: 0902142
Station ID:
WB

Latitude: 39' 95910.0000 North

Wb

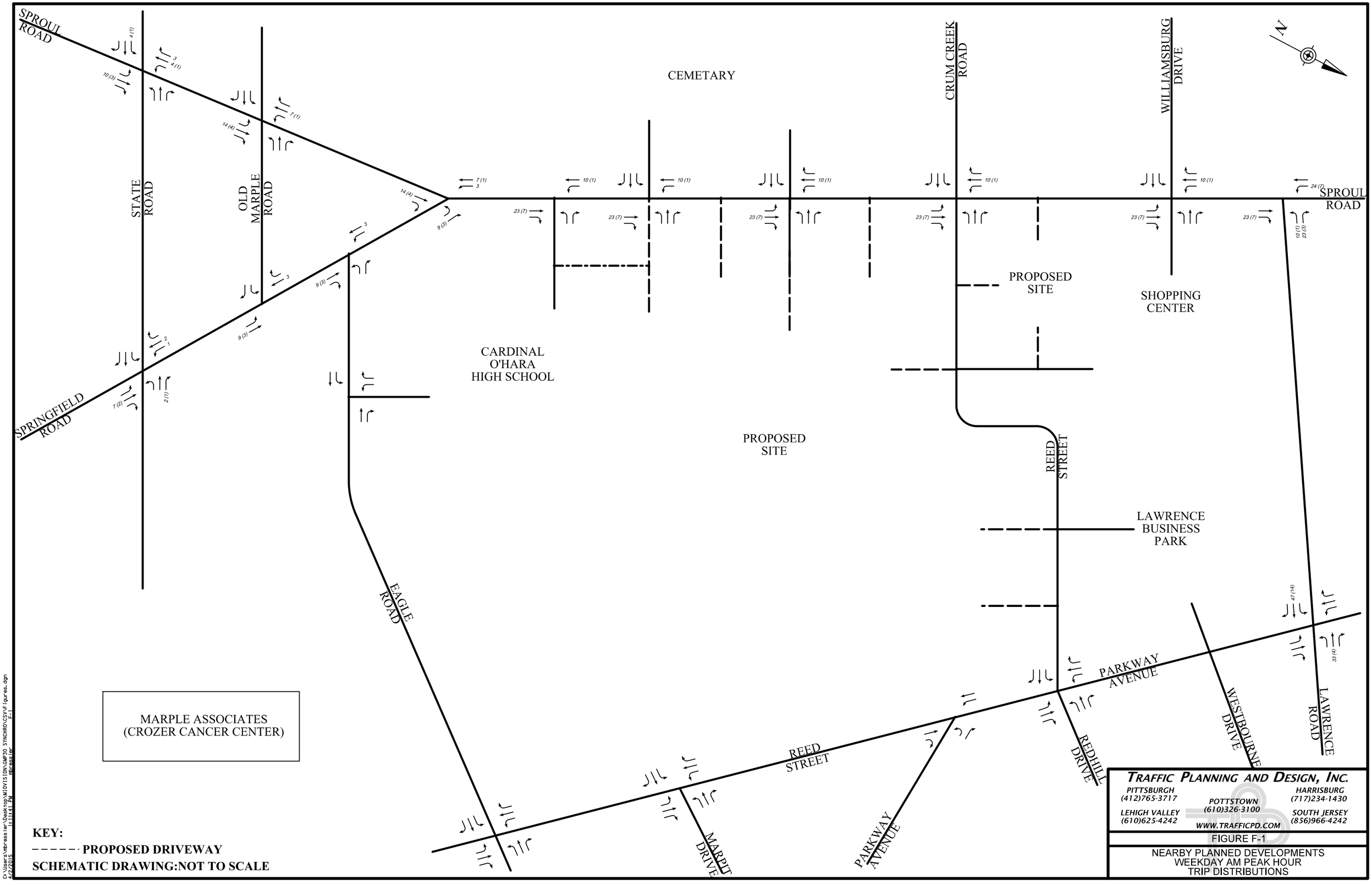
| Start Time | 1 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 80 | 81 85 | 86 9999 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09/10/14 | 0 | 0 | 4 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 01:00 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:00 | 0 | 2 | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 0 | 2 | 7 | 9 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Grand Total | 2000 | 1613 | 7562 | 14158 | 6842 | 993 | 102 | 9 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 33285 |

Stats

| | |
|---|---|
| 15th Percentile : | 19 MPH |
| 50th Percentile : | 31 MPH |
| 85th Percentile : | 36 MPH |
| 95th Percentile : | 39 MPH |
| Mean Speed(Average) : | 30 MPH |
| 10 MPH Pace Speed : | 28-37 MPH |
| Number in Pace : | 19189 |
| Percent in Pace : | 57.7% |
| Number of Vehicles > 55 MPH : | 6 |
| Percent of Vehicles > 55 MPH : | 0.0% |

# APPENDIX F

***NEARBY DEVELOPMENT DATA***


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
REDHILL DRIVE
REED STREET
MARPIT DRIVE
PARKWAY AVENUE
MARPLE ASSOCIATES (CROZER CANCER CENTER)
KEY:
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE F-1
NEARBY PLANNED DEVELOPMENTS
WEEKDAY AM PEAK HOUR
TRIP DISTRIBUTIONS

SPROUL ROAD

STATE ROAD

OLD MARPLE ROAD

SPRINGFIELD ROAD

CEMETARY

CRUM CREEK ROAD

WILLIAMSBURG DRIVE

SPROUL ROAD

PROPOSED SITE

SHOPPING CENTER

CARDINAL O'HARA HIGH SCHOOL

PROPOSED SITE

REED STREET

LAWRENCE BUSINESS PARK

EAGLE ROAD

PARKWAY AVENUE

WESTBOURNE DRIVE

LAWRENCE ROAD

REDHILL DRIVE

REED STREET

MARPIT DRIVE

PARKWAY AVENUE

MARPLE ASSOCIATES
(CROZER CANCER CENTER)

**KEY:**

**– – – – – PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**


TRAFFIC PLANNING AND DESIGN, INC.

PITTSBURGH (412)765-3717

HARRISBURG (717)234-1430

POTTSTOWN (610)326-3100

LEHIGH VALLEY (610)625-4242

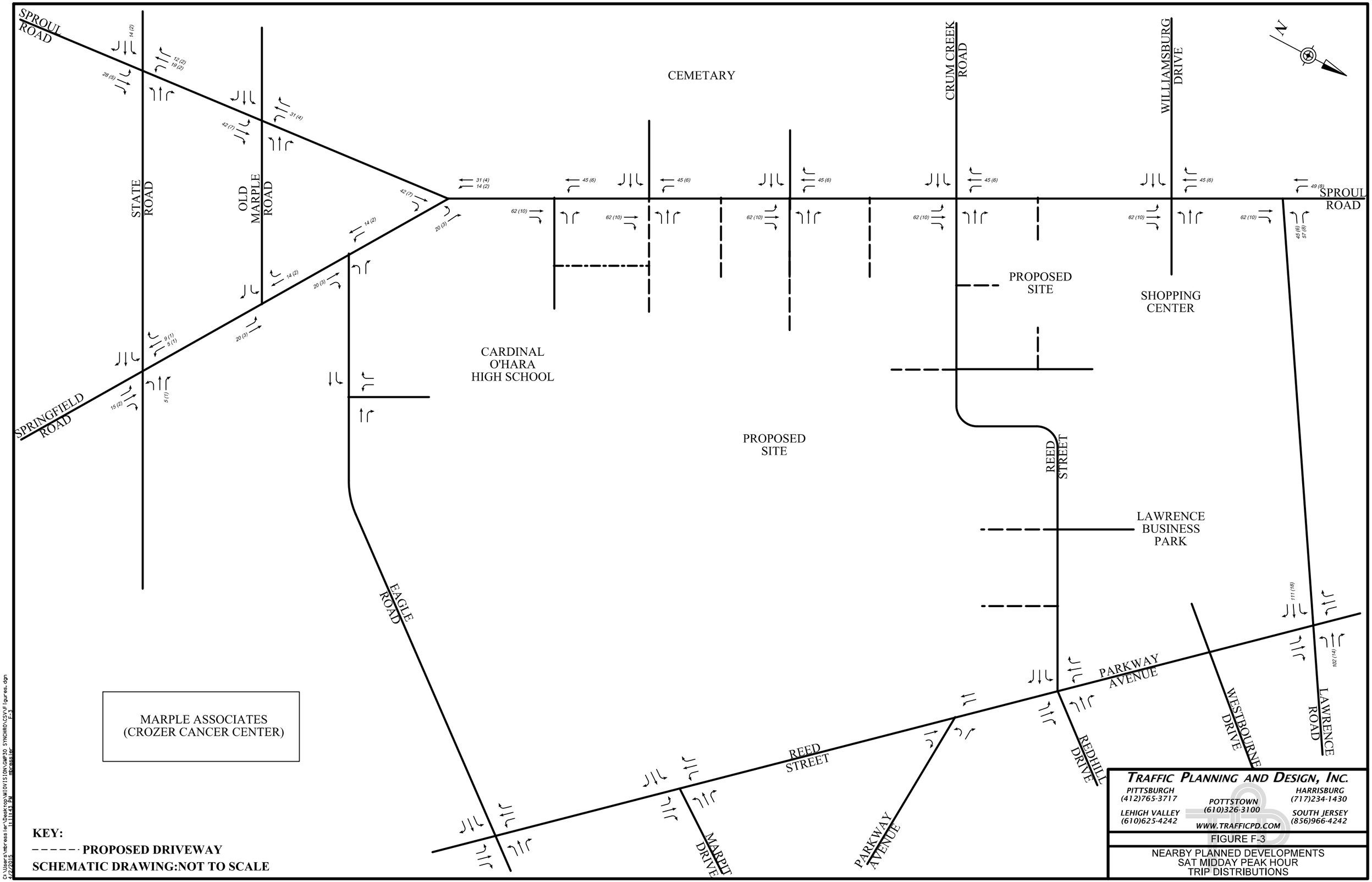
SOUTH JERSEY (856)966-4242

WWW.TRAFFICPD.COM


FIGURE F-2

NEARBY PLANNED DEVELOPMENTS
WEEKDAY PM PEAK HOUR
TRIP DISTRIBUTIONS


C:\Users\mbrasier\Desktop\MIDVISION\GMP30 SYNCHRO\CS\VFigures.dgn
4/2/2015 11:14:42 PM
mbrasier
F-2


SPROUL ROAD
STATE ROAD
OLD MARPLE ROAD
SPRINGFIELD ROAD
CEMETARY
CRUM CREEK ROAD
WILLIAMSBURG DRIVE
SPROUL ROAD
PROPOSED SITE
SHOPPING CENTER
CARDINAL O'HARA HIGH SCHOOL
PROPOSED SITE
REED STREET
LAWRENCE BUSINESS PARK
EAGLE ROAD
PARKWAY AVENUE
WESTBOURNE DRIVE
LAWRENCE ROAD
REDHILL DRIVE
REED STREET
MARPIT DRIVE
PARKWAY AVENUE
MARPLE ASSOCIATES (CROZER CANCER CENTER)
KEY:
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
TRAFFIC PLANNING AND DESIGN, INC.
PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM
FIGURE F-3
NEARBY PLANNED DEVELOPMENTS
SAT MIDDAY PEAK HOUR
TRIP DISTRIBUTIONS

Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

# TRAFFIC IMPACT STUDY

# MARPLE ASSOCIATES DEVELOPMENT

## Marple Township, Delaware County

**Prepared for**
**Marple Associates**

July 11, 2011
Revised January 6, 2014

Prepared by

Orth-Rodgers & Associates Inc.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEVEN B. BOLT
ENGINEER
PE38208-R

STEVEN B. BOLT, PE38208-R
President

301 Lindenwood Drive, Suite 130 | Malvern PA 19355 | Phone 610.407.9700 | Fax 610.407.9600

**TABLE OF CONTENTS**


| | Page No. |
|---|---|
| Executive Summary | 1 |
| Concept Plan | 4 |
| Level of Service and Queue Summary Tables | 5 - 10 |
| Introduction | 11 |
| Data Collection | 11 |
| Existing Study Area Conditions | 12 |
| Other Planned Development | 15 |
| Other Planned Transportation Improvements | 16 |
| Year 2015 Traffic Conditions without the Proposed Development | 16 |
| Year 2020 Traffic Conditions without the Proposed Development | 17 |
| Development Description | 18 |
| Trip Generation | 18 |
| Trip Distribution | 19 |
| Diversion of Public Traffic | 19 |
| Proposed Improvements | 20 |
| Year 2015 Traffic Conditions with the Proposed Development | 21 |
| Year 2020 Traffic Conditions with the Proposed Development | 22 |
| Recommendations and Conclusion | 22 |

Figures 1 - 35

## LIST OF ILLUSTRATIONS


1 Site Location Map

2 Study Area

3 Existing AM Peak Hour Traffic Volume

4 Existing PM Peak Hour Traffic Volume

5 Existing Saturday Peak Traffic Volume

6 Existing AM Peak Hour Levels of Service

7 Existing PM Peak Hour Levels of Service

8 Existing Saturday Peak Hour Levels of Service

9 Year 2015 No Build AM Peak Hour Traffic Volume

10 Year 2015 No Build PM Peak Hour Traffic Volume

11 Year 2015 No Build Saturday Peak Hour Traffic Volume

12 Year 2015 No Build AM Peak Hour Levels of Service

13 Year 2015 No Build PM Peak Hour Levels of Service

14 Year 2015 No Build Saturday Peak Hour Levels of Service

15 Year 2020 No Build AM Peak Hour Traffic Volume

16 Year 2020 No Build PM Peak Hour Traffic Volume

17 Year 2020 No Build Saturday Peak Hour Traffic Volume

18 Year 2020 No Build AM Peak Hour Levels of Service

19 Year 2020 No Build PM Peak Hour Levels of Service

20 Year 2020 No Build Saturday Peak Hour Levels of Service

21 Site Generated Trips – AM Peak Hour

22 Site Generated Trips – PM Peak Hour

23 Site Generated Trips – Saturday Peak Hour

## LIST OF ILLUSTRATIONS (continued)


24 Year 2015 Build AM Peak Hour Traffic Volume

25 Year 2015 Build PM Peak Hour Traffic Volume

26 Year 2015 Build Saturday Peak Hour Traffic Volume

27 Year 2015 Build AM Peak Hour Levels of Service

28 Year 2015 Build PM Peak Hour Levels of Service

29 Year 2015 Build Saturday Peak Hour Levels of Service

30 Year 2020 Build AM Peak Hour Traffic Volume

31 Year 2020 Build PM Peak Hour Traffic Volume

32 Year 2020 Build Saturday Peak Hour Traffic Volume

33 Year 2020 Build AM Peak Hour Levels of Service

34 Year 2020 Build PM Peak Hour Levels of Service

35 Year 2020 Build Saturday Peak Hour Levels of Service


## LIST OF TABLES


1. AM Peak Hour Level of Service Summary

2. PM Peak Hour Level of Service Summary

3. Saturday Peak Hour Level of Service Summary

4. AM Peak Hour Queue Length Summary

5. PM Peak Hour Queue Length Summary

6. Saturday Peak Hour Queue Length Summary

**APPENDIX (bound separately)**

A. Site Photographs

B. Signal Plans

C. Traffic Count Data

D. Crash Data & Analysis

E. Planned Development Information

F. Trip Generation Worksheets

G. Trip Distribution and Future Volumes Spreadsheet

H. Public Diversion Memo

I. Synchro Calibration Memo

J. Langford Run Road and Lawrence Road Signalization Study

K. Capacity and Queue Analysis Output “Existing Conditions”

L. Capacity and Queue Analysis Output “Year 2015 No Build”

M. Capacity and Queue Analysis Output “Year 2020 No Build”

N. Capacity and Queue Analysis Output “Year 2015 Build”

O. Capacity and Queue Analysis Output “Year 2020 Build”

P. Concept Plan

Q. Correspondence

## Executive Summary

This study analyzes the traffic impact of the proposed development of a 26-acre site owned by Marple Associates located in the southwest quadrant of the I-476/West Chester Pike interchange in Marple Township, Delaware County. Two access points will be provided for the proposed development. The primary access point is a proposed new full-movement signalized intersection of West Chester Pike and Langford Run Road, located at the site's existing right-in, right-out only driveway. The second site access is located at the existing unsignalized intersection of South Lawrence Road and Langford Run Road, which provides left-and-right turn entry and right-turn-only exit.

The study area for this traffic impact study includes West Chester Pike from New Ardmore Avenue to Old West Chester Pike as well as two intersections on South Lawrence Road: Langford Run Road and Sussex Road. This TIS analysis projects peak hourly volumes to Opening Year 2015 as well as Design Horizon Year 2020, with and without the proposed development.

Proposed Development

The Marple Associates site is proposed to be developed with a mix of retail, office and residential uses, including 260,000 sq.ft. retail shopping center, a drive-in bank, fitness center, day care, 40,000 sq.ft. of office and 150 townhomes. The trips associated with the proposed development are summarized as follows. The detailed trip generation is shown in Appendix F.

| | AM Peak Hour | | | PM Peak Hour | | | Saturday Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total |
| Total Trips | 355 | 254 | 609 | 822 | 889 | 1711 | 1020 | 936 | 1955 |
| Internal Trips | 0 | 0 | 0 | 50 | 39 | 89 | 34 | 36 | 70 |
| Pass-by Trips * | 0 | 0 | 0 | 175 | 195 | 370 | 243 | 220 | 463 |
| **New Trips** | **355** | **254** | **609** | **597** | **656** | **1253** | **743** | **681** | **1423** |

* *Pass-by traffic after subtracting internal trips*

Other Development

Other development in the vicinity includes an outpatient center by Crozer Keystone Health System on the site of the Pathmark supermarket on South Lawrence Road (along with the closing of that supermarket). A YMCA is proposed in Haverford Township at Eagle and N. Lawrence Road. A synagogue is proposed in the residential area north of West Chester Pike accessed by New Ardmore Avenue. Information on other development is included in Appendix E.

Proposed Improvements

Proposed improvements in conjunction with the development include creation of a full-movement signalized intersection at the intersection of Langford Run Road and West Chester Pike, so that Langford Run Road can serve as the main access to the Marple Associates development site. West Chester Pike

will be improved at the new intersection to add a westbound left turn lane and an eastbound right turn lane and additional eastbound through lane.

Langford Run Road will be extended through the development site to connect West Chester Pike and South Lawrence Road. Langford Run Road will serve a 'public' function by providing an attractive alternate for a number of motorists traveling between the west on West Chester Pike and the south on Lawrence Road -- diverting traffic from the heavily traveled section of West Chester Pike between the I-476 interchange and Lawrence Road.

Proposed modifications at the I-476 southbound off ramp (Ramp S-WC) include elimination of the existing channelized right-turn yield roadway, widening of other portions of the ramp to provide for additional lanes and storage length, and routing of all southbound off ramp traffic to the signalized intersection with West Chester Pike. The ramp will provide a double left turn, a through lane and a separate right turn lane at the West Chester Pike signal.

Other roadway improvements along West Chester Pike include adding a westbound right turn deceleration lane for Mather Avenue beginning just west of the pedestrian crossing at Langford Run Road and extending the sidewalks on West Chester Pike from New Ardmore Avenue to Langford Run Road.

At the three-lane approach of I-476 Northbound off ramp to West Chester Pike it is proposed to change the ramp's center lane from the existing shared left-and-through to a shared left, through and right turn lane and modify the existing overhead lane control signing. The pedestrian operation at the signal will need to be modified for a double-right turn movement from the ramp.

On the I-476 Northbound on ramp, where the lanes from eastbound and westbound West Chester Pike meet it is proposed to restripe the ramp to extend the separate lanes and move the merge area further north along the ramp. This will reduce the conflict perceived by drivers and increase the rate of flow through this area, which should act to decrease backups on the ramp.

In addition to these roadway improvements, it is recommended that the timings and offsets of the signals along West Chester Pike included in the study area be adjusted and optimized. An interconnection by fiber-optic cable will be established between the two separate interconnected systems on West Chester Pike in Marple Township and Haverford Township, and the signals will operate off a single master.

The proposed roadway improvements are illustrated in the concept plan that follows. The total cost of design and construction of the improvements, including construction of Langford Run Road connecting West Chester Pike and Lawrence Road, modification to the southbound off ramp from I-476 at West Chester Pike, and road widening, signalization, and signing improvements to West Chester Pike, is approximately $3 million.

Tables 1 – 6 which follow the Proposed Roadway Improvements Plan illustrate the comparisons of peak hour levels of service and queues with and without development. With the improvements described above, overall intersection delay with development remains within ten seconds of the no-build delay at all study intersections in both the Opening Year 2015 and Design Horizon Year 2020. Overall intersection levels of service with development are all 'D' or better except for the intersection of N. Lawrence Road which is LOS 'E' in the 2020 AM peak. Overall intersection levels of service with development remain the same as no-build levels of service at all intersections except for the intersections of North Lawrence Road (LOS 'C' to Level 'D') and Old West Chester Pike (LOS 'B' to LOS 'C') during the PM peak hour, as well as the intersection of I-476 Northbound Off-Ramp (LOS 'B' to LOS 'C') during the Saturday peak hour. All turn lane queues in the Future Horizon Year 2020 are within the available storage length, except the northbound right turn from South Lawrence Road at West Chester Pike, which is the existing condition.

Furthermore, if deemed beneficial by PennDOT and if supported by both Marple and Haverford Townships, Traffic Adaptive Control will be installed at all the signals from Old West Chester Pike to New Ardmore Avenue as part of the offsite improvements. Although no analysis was conducted to quantify the effects of Traffic Adaptive Control, there is little doubt that the traffic operation at the signalized intersections within the study area would benefit from this new technology. With the addition of Traffic Adaptive Control, the future intersection levels of service and the queue lengths would be better than what is shown in this report.

Point of Access Study

A Point of Access Study dated March 31, 2010 was prepared by ORA on behalf of Marple Township with analysis of the existing weekday AM and PM peak hours and the future PM peak hour to Year 2032. That study included the West Chester Pike intersections from New Ardmore Avenue to North Lawrence Road. The study demonstrated the feasibility of the proposed median opening and new traffic signal on West Chester Pike at Langford Run Road for Marple Associates site access, along with the proposed modifications to the I-476 southbound off ramp. It also demonstrated the advantages of the median opening and full movement signalized access to the highway network:

- By providing direct access, it prevents undesirable movements by drivers attempting to reach the development (such as a U turn from westbound West Chester Pike at the New Ardmore Ave. signal) or departing the development (such as a U turn from eastbound West Chester Pike at the I-476 NB on-ramp in order to proceed west on West Chester Pike).
- By providing direct access, it helps prevent overloading and capacity/queuing problems that would occur at other intersections resulting from drivers traveling to the development via indirect access.
- It provides a bypass (via Langford Run Road) of a congested area of West Chester Pike for non-development motorists traveling between the west and the south.

The PennDOT review letter for the POA Study is included in Appendix Q.

N
NEW ARDMORE AVE
MATHER AVE
ADD RIGHT-TURN DECELERATION LANE FOR MATHER AVENUE
MEDIAN BREAK AND NEW TRAFFIC SIGNAL
ELIMINATE I-476 SB SLIP RAMP; PROPOSED LANE CONFIGURATION: (2) LEFT-TURN LANES, (1) THROUGH LANE, AND (1) RIGHT-TURN LANE
I-476 SB OFF-RAMP
LANE ENDS MERGE LEFT
WEST CHESTER PIKE PA ROUTE 3
PROPOSED LANE CONFIGURATION: (1) LEFT-TURN LANE AND (2) THROUGH LANES
I-476 SB ON-RAMP
INTERSTATE 476 BLUE ROUTE
I-476 SB OFF-RAMP
RESTRIPE RAMP TO EXTEND SEPARATE LANES FROM EAST AND WEST, TO MOVE THE MERGE FURTHER NORTH AND INCREASE RAMP FLOW
I-476 NB ON-RAMP
PROPOSED LANE CONFIGURATION: (3) THROUGH LANES AND (1) RIGHT-TURN LANE
LANGFORD RUN RD
PROPOSED LANE CONFIGURATION: (2) LEFT-TURN LANES AND (1) RIGHT-TURN LANE
WEST CHESTER PIKE PA ROUTE 3
INTERSTATE 476 BLUE ROUTE
PROPOSED LANE CONFIGURATION: (1) LEFT-TURN LANE, (1) SHARED LEFT/RIGHT-TURN LANE, AND (1) RIGHT-TURN LANE
I-476 NB OFF-RAMP
MODIFY EXISTING OVERHEAD LANE CONTROL SIGN
LANGFORD RUN RD
SCALE IN FEET
0 80 160
PROPOSED ROADWAY IMPROVEMENTS
I-476 RAMP AND WEST CHESTER PIKE
OR&A
Orth – Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS and PLANNERS

# Table 1. AM Peak Hour Level of Service Comparison

| intersection (node) | approach | movement | Existing (by move) | 2015 No Build (move) | 2015 Build (move) | 2020 No Build (move) | 2020 Build (move) |
|---|---|---|---|---|---|---|---|
| West Chester Pike & New Ardmore (3) | EB | Left | E(55) | E(66) | E(66) | E(66) | E(66) |
| | | Thru/Right | B(15) | B(15) | B(14) | B(15) | B(14) |
| | WB | Left | D(52) | E(65) | E(69) | E(65) | E(68) |
| | | Thru/Right | B(12) | A(5) | A(9) | A(5) | A(9) |
| | NB | Left/Thru | D(38) | D(37) | D(39) | D(37) | D(39) |
| | | Right | D(36) | D(35) | D(37) | D(35) | D(37) |
| | SB | LTR | D(54) | D(51) | E(61) | D(51) | E(61) |
| | **Overall** | | **B(17)** | **B(15)** | **B(17)** | **B(15)** | **B(17)** |
| West Chester Pike & Langford (6) | EB | Thru | | | C(26) | | C(26) |
| | | Right | | | A(10) | | A(10) |
| | WB | Left | | | C(25) | | C(25) |
| | | Thru | | | A(2) | | A(2) |
| | NB | Left | | | D(44) | | D(44) |
| | | Right | | | C(28) | | C(28) |
| | **Overall** | | | | **B(18)** | | **B(18)** |
| West Chester Pike & I-476 SB Ramps (10) | EB | Thru | B(18) | B(12) | B(17) | B(13) | B(17) |
| | WB | Thru | B(18) | A(6) | A(5) | A(7) | A(5) |
| | SB | Left | D(36) | D(36) | C(34) | D(36) | C(34) |
| | | Thru | C(24) | C(24) | C(23) | C(24) | C(23) |
| | | Right | | | D(37) | | D(37) |
| | **Overall** | | **C(23)** | **B(16)** | **B(19)** | **B(16)** | **B(19)** |
| West Chester Pike & I-476 NB Ramps (15) | EB | Left | E(61) | E(59) | D(44) | E(63) | D(46) |
| | | Thru | A(9) | A(9) | A(9) | A(9) | A(10) |
| | WB | Thru | F(95) | E(66) | E(63) | E(71) | E(69) |
| | NB | Left | C(32) | C(33) | D(41) | C(32) | D(41) |
| | | LT(R) | C(32) | C(33) | D(49) | C(32) | D(50) |
| | | Right | D(51) | E(59) | D(50) | E(60) | D(49) |
| | **Overall** | | **D(52)** | **D(41)** | **D(38)** | **D(44)** | **D(40)** |
| West Chester Pike & S Lawrence Rd (18) | EB | Thru | C(29) | B(13) | B(14) | B(13) | B(13) |
| | | Right | B(13) | A(4) | A(5) | A(3) | A(5) |
| | WB | Left | D(54) | D(48) | D(47) | D(48) | D(47) |
| | | Thru | F(89) | E(74) | E(72) | E(75) | E(77) |
| | NB | Left | D(37) | D(46) | D(47) | D(47) | D(48) |
| | | Right | C(24) | C(26) | C(31) | C(27) | C(31) |
| | **Overall** | | **D(55)** | **D(45)** | **D(45)** | **D(45)** | **D(47)** |
| West Chester Pike & N Lawrence Rd (2) | EB | Left | D(40) | D(46) | D(44) | D(46) | D(44) |
| | | Thru | A(5) | A(9) | B(10) | A(9) | B(10) |
| | WB | Thru/Right | B(18) | C(34) | D(46) | D(36) | D(50) |
| | SB | Left | D(45) | C(34) | C(34) | C(34) | C(34) |
| | | Right | F(264) | F(133) | F(142) | F(136) | F(144) |
| | **Overall** | | **E(64)** | **D(47)** | **D(54)** | **D(49)** | **E(56)** |
| West Chester Pike & Old West Chester Pike (26) | EB | Thru/Right | B(12) | A(6) | A(7) | A(6) | A(7) |
| | WB | Left | D(47) | D(51) | D(53) | D(51) | D(53) |
| | | Thru/Right | A(3) | A(3) | A(3) | A(3) | A(3) |
| | NB | Left/Thru | D(47) | D(47) | D(48) | D(47) | D(48) |
| | | Right | D(44) | D(44) | D(44) | D(44) | D(44) |
| | SB | LTR | D(45) | D(45) | D(45) | D(45) | D(45) |
| | **Overall** | | **A(9)** | **A(7)** | **A(7)** | **A(7)** | **A(7)** |
| S Lawrence Road & Langford Run Rd (#) | EB | R | b(12) | b(12) | b(13) | b(12) | b(13) |
| | NB | L | b(12) | b(12) | c(16) | b(12) | c(16) |
| S Lawrence Road & Sussex Blvd (#) | EB | LTR | D(53) | D(52) | D(53) | D(53) | D(53) |
| | WB | LTR | C(31) | C(31) | C(31) | C(31) | C(31) |
| | NB | LTR | C(25) | C(26) | C(28) | C(26) | C(28) |
| | SB | LTR | A(4) | A(4) | A(4) | A(4) | A(4) |
| | **Overall** | | **C(21)** | **C(21)** | **C(22)** | **C(21)** | **C(22)** |

*Note: All analyses used revised timing and PHF by movement.*

*ORA 6/28/11*

# Table 2. PM Peak Hour Level of Service Comparison

| intersection (node) | approach | movement | Existing (by move) | 2015 No Build (move) | 2015 Build (move) | 2020 No Build (move) | 2020 Build (move) |
|---|---|---|---|---|---|---|---|
| West Chester Pike & New Ardmore (3) | EB | Left | E(67) | E(75) | E(75) | E(75) | E(75) |
| | | Thru/Right | A(9) | A(8) | A(9) | A(8) | A(9) |
| | WB | Left | E(77) | E(73) | E(79) | E(73) | E(79) |
| | | Thru/Right | C(22) | B(12) | B(12) | B(13) | B(13) |
| | NB | Left/Thru | E(68) | E(77) | E(77) | E(77) | E(77) |
| | | Right | D(50) | D(51) | D(51) | D(51) | D(51) |
| | SB | LTR | E(55) | E(58) | E(58) | E(58) | E(58) |
| | **Overall** | | **B(20)** | **B(15)** | **B(15)** | **B(15)** | **B(15)** |
| West Chester Pike & Langford (6) | EB | Thru | | | C(27) | | C(27) |
| | | Right | | | A(8) | | A(8) |
| | WB | Left | | | D(40) | | D(40) |
| | | Thru | | | A(4) | | A(4) |
| | NB | Left | | | D(51) | | D(51) |
| | | Right | | | C(32) | | C(32) |
| | **Overall** | | | | **C(21)** | | **C(21)** |
| West Chester Pike & I-476 SB Ramps (10) | EB | Thru | D(37) | C(22) | C(24) | C(22) | C(24) |
| | WB | Thru | B(19) | C(31) | D(36) | C(32) | D(38) |
| | SB | Left | D(44) | D(43) | D(45) | D(44) | D(47) |
| | | Thru | B(18) | B(17) | B(18) | B(17) | B(18) |
| | | Right | | | C(33) | | C(33) |
| | **Overall** | | **C(34)** | **C(32)** | **C(33)** | **C(33)** | **C(35)** |
| West Chester Pike & I-476 NB Ramps (15) | EB | Left | F(107) | D(54) | D(39) | D(55) | D(40) |
| | | Thru | B(16) | B(18) | B(14) | B(19) | B(14) |
| | WB | Thru | D(40) | D(36) | D(46) | D(37) | D(49) |
| | NB | Left | C(32) | C(32) | D(52) | C(32) | D(52) |
| | | LT(R) | C(32) | C(32) | E(59) | C(32) | E(60) |
| | | Right | F(106) | F(111) | E(59) | F(115) | E(59) |
| | **Overall** | | **D(39)** | **D(36)** | **C(31)** | **D(36)** | **C(32)** |
| West Chester Pike & S Lawrence Rd (18) | EB | Thru | F(80) | D(41) | D(42) | D(47) | D(45) |
| | | Right | B(12) | A(5) | A(5) | A(5) | A(5) |
| | WB | Left | D(52) | D(37) | D(46) | D(37) | D(49) |
| | | Thru | C(25) | B(19) | C(20) | B(20) | C(20) |
| | NB | Left | D(38) | D(41) | D(44) | D(41) | D(44) |
| | | Right | C(26) | C(29) | C(33) | C(29) | C(34) |
| | **Overall** | | **D(49)** | **C(30)** | **C(32)** | **C(33)** | **C(34)** |
| West Chester Pike & N Lawrence Rd (2) | EB | Left | E(60) | C(23) | D(39) | C(23) | D(39) |
| | | Thru | B(10) | A(6) | A(4) | A(6) | A(4) |
| | WB | Thru/Right | D(46) | D(46) | D(53) | D(47) | E(56) |
| | SB | Left | E(62) | E(62) | E(62) | E(63) | E(63) |
| | | Right | D(47) | E(60) | F(80) | E(62) | F(83) |
| | **Overall** | | **D(37)** | **C(31)** | **D(38)** | **C(31)** | **D(39)** |
| West Chester Pike & Old West Chester Pike (26) | EB | Thru/Right | B(19) | B(11) | C(25) | B(12) | C(27) |
| | WB | Left | E(63) | F(93) | F(93) | F(93) | F(93) |
| | | Thru/Right | A(5) | A(6) | A(6) | A(6) | A(6) |
| | NB | Left/Thru | F(111) | F(82) | F(97) | F(83) | F(97) |
| | | Right | D(47) | D(46) | D(47) | D(46) | D(47) |
| | SB | LTR | D(46) | D(44) | D(45) | D(44) | D(45) |
| | **Overall** | | **C(20)** | **B(16)** | **C(23)** | **B(16)** | **C(24)** |
| S Lawrence Road & Langford Run Rd (#) | EB | R | b(13) | b(13) | c(20) | b(13) | c(20) |
| | NB | L | b(11) | b(11) | b(14) | b(11) | b(14) |
| S Lawrence Road & Sussex Blvd (#) | EB | LTR | D(37) | D(37) | D(37) | D(37) | D(37) |
| | WB | LTR | C(25) | C(25) | C(25) | C(25) | C(25) |
| | NB | LTR | B(20) | B(20) | C(21) | B(20) | C(21) |
| | SB | LTR | B(13) | B(13) | B(16) | B(13) | B(16) |
| | **Overall** | | **B(18)** | **B(18)** | **B(20)** | **B(18)** | **C(20)** |

*Note: All analyses used revised timing and PHF by movement.*

*ORA 6/28/11*

# Table 3. Saturday Peak Hour Level of Service Comparison

| intersection (node) | approach | movement | Existing (by move) | 2015 No Build (move) | 2015 Build (move) | 2020 No Build (move) | 2020 Build (move) |
|---|---|---|---|---|---|---|---|
| West Chester Pike & New Ardmore (3) | EB | Left | E(63) | E(61) | E(61) | E(61) | E(61) |
| | | Thru/Right | B(11) | B(11) | B(12) | B(11) | B(12) |
| | WB | Left | E(66) | E(56) | D(53) | E(56) | D(53) |
| | | Thru/Right | B(11) | A(5) | A(8) | A(5) | A(8) |
| | NB | Left/Thru | D(40) | D(40) | D(40) | D(40) | D(40) |
| | | Right | D(39) | D(40) | D(40) | D(40) | D(40) |
| | SB | LTR | D(47) | D(51) | D(51) | D(51) | D(51) |
| | **Overall** | | **B(15)** | **B(12)** | **B(13)** | **B(12)** | **B(13)** |
| West Chester Pike & Langford (6) | EB | Thru | | | D(45) | | D(47) |
| | | Right | | | B(11) | | B(11) |
| | WB | Left | | | C(22) | | C(22) |
| | | Thru | | | A(3) | | A(3) |
| | NB | Left | | | D(43) | | D(43) |
| | | Right | | | B(15) | | B(15) |
| | **Overall** | | | | **C(24)** | | **C(24)** |
| West Chester Pike & I-476 SB Ramps (10) | EB | Thru | B(15) | A(9) | A(8) | A(9) | A(8) |
| | WB | Thru | A(6) | A(2) | A(8) | A(2) | A(8) |
| | SB | Left | D(37) | D(36) | C(32) | D(36) | C(32) |
| | | Thru | C(26) | C(26) | C(23) | C(25) | C(23) |
| | | Right | | | D(42) | | D(42) |
| | **Overall** | | **B(18)** | **B(14)** | **B(16)** | **B(14)** | **B(16)** |
| West Chester Pike & I-476 NB Ramps (15) | EB | Left | E(62) | D(45) | D(53) | D(45) | D(53) |
| | | Thru | A(2) | B(10) | A(6) | B(11) | A(6) |
| | WB | Thru | C(24) | B(15) | C(26) | B(15) | C(26) |
| | NB | Left | C(32) | C(31) | D(47) | C(31) | D(47) |
| | | LT(R) | C(32) | C(31) | D(52) | C(31) | D(52) |
| | | Right | E(58) | E(60) | D(52) | E(61) | D(52) |
| | **Overall** | | **B(19)** | **B(19)** | **C(22)** | **B(20)** | **C(22)** |
| West Chester Pike & S Lawrence Rd (18) | EB | Thru | C(35) | B(20) | C(33) | C(20) | D(35) |
| | | Right | A(4) | A(3) | A(4) | A(3) | A(4) |
| | WB | Left | D(48) | D(37) | D(52) | D(37) | D(53) |
| | | Thru | C(21) | B(18) | B(15) | B(18) | B(15) |
| | NB | Left | C(32) | C(33) | C(32) | C(33) | C(32) |
| | | Right | C(23) | C(25) | C(28) | C(26) | C(28) |
| | **Overall** | | **C(28)** | **C(21)** | **C(27)** | **C(21)** | **C(28)** |
| West Chester Pike & N Lawrence Rd (2) | EB | Left | D(53) | C(24) | C(25) | C(24) | C(25) |
| | | Thru | A(2) | A(6) | B(15) | A(6) | B(15) |
| | WB | Thru/Right | B(19) | B(17) | C(20) | B(17) | C(20) |
| | SB | Left | F(102) | F(104) | F(104) | F(106) | F(106) |
| | | Right | F(85) | F(88) | F(102) | F(90) | F(103) |
| | **Overall** | | **C(29)** | **C(26)** | **C(32)** | **C(27)** | **C(32)** |
| West Chester Pike & Old West Chester Pike (26) | EB | Thru/Right | A(8) | A(5) | A(8) | A(5) | A(8) |
| | WB | Left | D(46) | D(54) | D(54) | D(54) | D(54) |
| | | Thru/Right | A(3) | A(3) | A(4) | A(3) | A(4) |
| | NB | Left/Thru | D(48) | D(51) | D(51) | D(51) | D(51) |
| | | Right | D(42) | D(42) | D(42) | D(42) | D(42) |
| | SB | LTR | D(42) | D(43) | D(43) | D(43) | D(43) |
| | **Overall** | | **A(8)** | **A(7)** | **A(8)** | **A(7)** | **A(8)** |
| S Lawrence Road & Langford Run Rd (#) | EB | R | b(10) | b(10) | b(13) | b(10) | b(13) |
| | NB | L | a(9) | a(9) | a(10) | a(9) | a(10) |
| S Lawrence Road & Sussex Blvd (#) | EB | LTR | C(31) | C(31) | C(31) | C(31) | C(31) |
| | WB | LTR | C(32) | C(32) | C(32) | C(32) | C(32) |
| | NB | LTR | B(17) | B(17) | B(18) | B(17) | B(18) |
| | SB | LTR | A(3) | A(3) | A(3) | A(3) | A(3) |
| | **Overall** | | **B(11)** | **B(11)** | **B(12)** | **B(11)** | **B(12)** |

*Note: All analyses used revised timing and PHF by movement.*

*ORA 6/28/11*

# Table 4. AM Peak Hour Queue Length

| Intersection (Node) | Approach | Movement | storage length | Existing (move) | | 2015 No Build (move) | | 2015 Build (move) | | 2020 No Build (move) | | 2020 Build (move) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Synchro | | Synchro | | Synchro | | Synchro | | Synchro | |
| | | | | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length |
| West Chester Pike & New Ardmore (3) | EB | L | **180** | 15 | 24 | 15 | 24 | 15 | 24 | 15 | 24 | 15 | 24 |
| | | TTR | | 360 | 462 | 372 | 479 | 372 | 464 | 380 | 487 | 380 | 473 |
| | WB | L | **145** | 20 | 35 | 27 | 45 | 25 | 42 | 27 | 45 | 25 | 42 |
| | | TTR | | 257 | 537 | 47 | 104 | 185 | 255 | 47 | 118 | 188 | 257 |
| | NB | LT | | 30 | 53 | 30 | 53 | 31 | 56 | 30 | 53 | 31 | 56 |
| | | R | | 0 | 37 | 0 | 36 | 0 | 38 | 0 | 36 | 0 | 38 |
| | SB | LTR | | 103 | 150 | 103 | 148 | 104 | #169 | 103 | 148 | 104 | #169 |
| West Chester Pike & Langford (6) | EB | TTT | **450** | | | | | 354 | 416 | | | 360 | 420 |
| | | R | | | | | | 53 | m73 | | | 53 | m71 |
| | WB | L | | | | | | 106 | 147 | | | 106 | 147 |
| | | TT | | | | | | 46 | 64 | | | 47 | 65 |
| | NB | LL | | | | | | 48 | 77 | | | 48 | 77 |
| | | R | | | | | | 92 | 146 | | | 92 | 146 |
| West Chester Pike & I-476 SB Ramps (10) | EB | TTT | | 306 | 368 | 133 | 204 | 379 | 491 | 133 | 208 | 384 | 498 |
| | WB | TT | | 195 | m177 | 77 | m175 | 47 | m156 | 84 | m192 | 53 | m155 |
| | SB | LL | | 242 | 281 | 250 | 288 | 243 | 284 | 250 | 288 | 245 | 288 |
| | | T | **180** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | R | | | | | | 218 | 272 | | | 220 | 274 |
| West Chester Pike & I-476 NB Ramps (15) | EB | L | **510** | 192 | #419 | ~346 | #460 | 374 | #506 | ~351 | #466 | 378 | #516 |
| | | TTT | | 206 | 228 | 152 | 268 | 206 | 269 | 158 | 272 | 216 | 278 |
| | WB | TT | | 323 | m231 | 341 | m252 | ~453 | m347 | 345 | m254 | ~463 | m348 |
| | NB | L | **520** | 57 | 95 | 57 | 100 | 115 | 167 | 57 | 100 | 116 | 170 |
| | | LT(R) | **520** | 58 | 26 | 58 | 28 | 137 | 50 | 58 | 28 | 140 | 51 |
| | | R | | 174 | 213 | 183 | 232 | 128 | 168 | 186 | 236 | 127 | 167 |
| West Chester Pike & S Lawrence Rd (18) | EB | TTT | **600** | 354 | 408 | 124 | 198 | 228 | 256 | 125 | 205 | 220 | 249 |
| | | R | | 229 | 350 | 49 | m64 | 55 | 71 | 50 | m66 | 55 | 70 |
| | WB | LL | **460*** | 111 | m121 | 117 | m114 | 136 | m126 | 118 | m112 | 137 | m127 |
| | | TT | | ~1051 | m#912 | ~1004 | m#970 | ~1062 | m#536 | ~1006 | m#946 | ~1082 | m#536 |
| | NB | LL | | 191 | 239 | 208 | 260 | 172 | #226 | 211 | #266 | 175 | #237 |
| | | R | **200** | 204 | 296 | 223 | 316 | 229 | 330 | 226 | 322 | 233 | 336 |
| West Chester Pike & N Lawrence Rd (2) | EB | LL | **460*** | 187 | 243 | 200 | 247 | 201 | 255 | 202 | 250 | 203 | 258 |
| | | TT | | 87 | 184 | 168 | 190 | 176 | 253 | 169 | 195 | 177 | 259 |
| | WB | TTTR | | 350 | 465 | 442 | #630 | ~487 | #698 | 452 | #644 | ~512 | #712 |
| | SB | L | **325** | 37 | 73 | 33 | 65 | 33 | 65 | 33 | 65 | 33 | 65 |
| | | R | | ~831 | #1006 | ~741 | #918 | ~777 | #950 | ~752 | #931 | ~787 | #960 |
| West Chester Pike & Old West Chester Pike (26) | EB | TTR | | 298 | 417 | 220 | 290 | 246 | 348 | 221 | 296 | 247 | 355 |
| | WB | L | **170** | 44 | 81 | 45 | 85 | 45 | 85 | 45 | 85 | 45 | 85 |
| | | TTTR | | 109 | 160 | 112 | 156 | 125 | 158 | 115 | 159 | 127 | 161 |
| | NB | LT | | 15 | 11 | 15 | 11 | 17 | 12 | 15 | 11 | 17 | 12 |
| | | R | | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 |
| | SB | LTR | | 7 | 0 | 7 | 0 | 7 | 0 | 7 | 0 | 7 | 0 |
| S Lawrence Rd & Langford Run Rd (#) | EB | R | | - | 1 | - | 1 | - | 17 | - | 1 | - | 17 |
| | NB | L | **155** | - | 1 | - | 1 | - | 37 | - | 1 | - | 37 |
| S Lawrence Rd & Sussex Blvd (#) | EB | LTR | | 46 | 35 | 46 | 35 | 46 | 35 | 46 | 35 | 46 | 35 |
| | WB | LTR | | 14 | 42 | 14 | 42 | 14 | 42 | 14 | 42 | 14 | 42 |
| | NB | LTTR | | 212 | 275 | 218 | 284 | 236 | 305 | 222 | 288 | 239 | 310 |
| | SB | LTTR | | 42 | 78 | 43 | 79 | 45 | 84 | 43 | 80 | 46 | 85 |

**Average length of dual left turn lanes*

*~: This indicates that the approach is above capacity and the queue length could be much longer.*
*#: This indicates that the volume for the 95th percentile cycle exceeds capacity.*
*m: This indicates that the volume for the 95th percentile queue is metered by an upstream signal.*

*In many cases, the 95th percentile queue will not be experienced due to upstream metering.*
*If the upstream intersection is at / near capacity, the 50th percentile queue represents the max. queue experienced.*

*The queue length reported is the one for the lane with the highest queue in the lane group.*

*ORA 06/28/11*

# Table 5. PM Peak Hour Queue Length

| Intersection (Node) | Approach | Movement | storage length | Existing (move) | | 2015 No Build (move) | | 2015 Build (move) | | 2020 No Build (move) | | 2020 Build (move) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Synchro | | Synchro | | Synchro | | Synchro | | Synchro | |
| | | | | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length |
| West Chester Pike & New Ardmore (3) | EB | L | **180** | 95 | #188 | 98 | #188 | 98 | #188 | 98 | #188 | 98 | #188 |
| | | TTR | | 214 | 508 | 193 | 393 | 219 | 447 | 196 | 401 | 223 | 456 |
| | WB | L | **145** | 12 | m18 | 13 | m22 | 12 | m23 | 13 | m22 | 12 | m23 |
| | | TTR | | 783 | 843 | 201 | 260 | 364 | 449 | 211 | 270 | 367 | 459 |
| | NB | LT | | 57 | 88 | 58 | 99 | 58 | #99 | 58 | #99 | 58 | #99 |
| | | R | | 0 | 6 | 0 | 7 | 0 | 7 | 0 | 7 | 0 | 7 |
| | SB | LTR | | 46 | 76 | 47 | 80 | 47 | 80 | 47 | 80 | 47 | 80 |
| West Chester Pike & Langford (6) | EB | TTT | **450** | | | | | 380 | 469 | | | 386 | 475 |
| | | R | | | | | | 73 | 64 | | | 72 | 64 |
| | WB | L | | | | | | 327 | m365 | | | 327 | m361 |
| | | TT | | | | | | 62 | m332 | | | 64 | m336 |
| | NB | LL | | | | | | 114 | 155 | | | 114 | 155 |
| | | R | | | | | | 356 | 467 | | | 356 | 467 |
| West Chester Pike & I-476 SB Ramps (10) | EB | TTT | | 353 | 499 | 335 | 252 | 220 | #338 | 339 | 254 | 221 | #347 |
| | WB | TT | | 111 | #178 | 599 | #699 | ~673 | m713 | 606 | m#704 | ~686 | m#707 |
| | SB | LL | | 578 | #742 | 580 | #745 | 590 | #758 | 591 | #760 | 602 | #772 |
| | | T | **180** | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 |
| | | R | | | | | | 367 | 504 | | | 371 | 511 |
| West Chester Pike & I-476 NB Ramps (15) | EB | L | **510** | 314 | #427 | 318 | #396 | 437 | m#480 | 321 | #401 | 440 | m#479 |
| | | TTT | | 541 | 574 | 432 | 502 | 478 | m596 | 445 | m517 | 498 | m603 |
| | WB | TT | | 431 | 396 | 414 | #486 | ~461 | #558 | 420 | #495 | ~469 | #563 |
| | NB | L | **520** | 84 | 141 | 85 | 142 | 231 | 331 | 86 | 144 | 232 | 333 |
| | | LT(R) | **520** | 84 | 35 | 85 | 35 | 231 | 74 | 86 | 35 | 234 | 342 |
| | | R | | ~449 | #667 | ~462 | #681 | 220 | 323 | ~470 | #690 | 222 | 326 |
| West Chester Pike & S Lawrence Rd (18) | EB | TTT | **600** | ~896 | m#1020 | ~847 | m#893 | ~882 | #961 | ~863 | m#908 | ~899 | #978 |
| | | R | | 390 | m462 | 158 | m151 | 99 | 103 | 157 | m152 | 99 | 104 |
| | WB | LL | **460*** | 226 | m#248 | 194 | m216 | ~265 | m#261 | 193 | m215 | ~269 | m#260 |
| | | TT | | 570 | m753 | 665 | m742 | 728 | m730 | 680 | m751 | 739 | m726 |
| | NB | LL | | 115 | 130 | 120 | 147 | 85 | 112 | 121 | 148 | 87 | 114 |
| | | R | **200** | 236 | 301 | 228 | 329 | 248 | 361 | 231 | 334 | 252 | 366 |
| West Chester Pike & N Lawrence Rd (2) | EB | LL | **460*** | 456 | m414 | 183 | m160 | 360 | m352 | 169 | m161 | 371 | m356 |
| | | TT | | 156 | m151 | 87 | m78 | 66 | m53 | 95 | m77 | 74 | m54 |
| | WB | TTTR | | 483 | m#624 | 516 | 557 | 581 | #635 | 528 | 563 | 590 | #646 |
| | SB | L | **325** | 103 | 139 | 105 | 141 | 105 | 141 | 106 | 141 | 106 | 141 |
| | | R | | 592 | #818 | 612 | #901 | ~765 | #1014 | 618 | #919 | ~782 | #1032 |
| West Chester Pike & Old West Chester Pike (26) | EB | TTR | | 386 | #996 | 137 | #328 | ~166 | #1098 | 139 | #963 | ~171 | #1117 |
| | WB | L | **170** | 60 | 96 | 63 | #129 | 63 | #129 | 63 | #129 | 63 | #129 |
| | | TTTR | | 112 | 131 | 129 | 150 | 140 | 163 | 131 | 153 | 142 | 164 |
| | NB | LT | | 134 | 52 | 132 | 51 | 135 | 52 | 133 | 52 | 135 | 52 |
| | | R | | 27 | 58 | 35 | 66 | 40 | 73 | 36 | 67 | 40 | 73 |
| | SB | LTR | | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 4 |
| S Lawrence Rd & Langford Run Rd (#) | EB | R | | - | 1 | - | 1 | - | 65 | - | 1 | - | 66 |
| | NB | L | | - | 1 | - | 1 | - | 38 | - | 1 | - | 39 |
| S Lawrence Rd & Sussex Blvd (#) | EB | LTR | | 106 | 39 | 106 | 39 | 106 | 39 | 106 | 39 | 106 | 39 |
| | WB | LTR | | 22 | 23 | 22 | 23 | 22 | 23 | 22 | 23 | 22 | 23 |
| | NB | LTTR | | 120 | 168 | 113 | 160 | 135 | 188 | 114 | 162 | 137 | 191 |
| | SB | LTTR | | 163 | #244 | 163 | 243 | 187 | #345 | 165 | 246 | 190 | #355 |

**Average length of dual left turn lanes*

*~: This indicates that the approach is above capacity and the queue length could be much longer.*
*#: This indicates that the volume for the 95th percentile cycle exceeds capacity.*
*m: This indicates that the volume for the 95th percentile queue is metered by an upstream signal.*

*In many cases, the 95th percentile queue will not be experienced due to upstream metering.*
*If the upstream intersection is at / near capacity, the 50th percentile queue represents the max. queue experienced.*

*The queue length reported is the one for the lane with the highest queue in the lane group.*

*ORA 06/22/11*

# Table 6. Saturday Peak Hour Queue Length

| Intersection (Node) | Approach | Movement | storage length | Existing (move) | | 2015 No Build (move) | | 2015 Build (move) | | 2020 No Build (move) | | 2020 Build (move) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Synchro | | Synchro | | Synchro | | Synchro | | Synchro | |
| | | | | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length | 50th % Q length | 95th % Q length |
| West Chester Pike & New Ardmore (3) | EB | L | **180** | 7 | 17 | 7 | 16 | 7 | 16 | 7 | 16 | 7 | 16 |
| | | TTR | | 242 | 303 | 249 | 312 | 293 | 365 | 253 | 317 | 297 | 371 |
| | WB | L | **145** | 38 | 71 | 51 | 78 | 43 | 71 | 51 | 78 | 44 | 71 |
| | | TTR | | 281 | 448 | 87 | 102 | 154 | 307 | 88 | 103 | 154 | 311 |
| | NB | LT | | 9 | 8 | 9 | 8 | 9 | 8 | 9 | 8 | 9 | 8 |
| | | R | | 0 | 24 | 0 | 24 | 0 | 24 | 0 | 24 | 0 | 24 |
| | SB | LTR | | 62 | 81 | 62 | 83 | 62 | 83 | 62 | 83 | 62 | 83 |
| West Chester Pike & Langford (6) | EB | TTT | **450** | | | | | ~298 | #391 | | | ~304 | #398 |
| | | R | | | | | | 92 | 146 | | | 90 | 144 |
| | WB | L | | | | | | 397 | 441 | | | 397 | 431 |
| | | TT | | | | | | 83 | 66 | | | 83 | 66 |
| | NB | LL | | | | | | 95 | 139 | | | 95 | 139 |
| | | R | | | | | | 203 | 306 | | | 203 | 306 |
| West Chester Pike & I-476 SB Ramps (10) | EB | TTT | | 209 | 275 | 94 | 113 | 52 | m377 | 95 | 114 | 51 | m378 |
| | WB | TT | | 69 | 81 | 15 | 27 | 71 | 95 | 15 | 27 | 72 | 96 |
| | SB | LL | | 236 | 274 | 240 | 276 | 222 | 267 | 242 | 278 | 224 | 271 |
| | | T | **180** | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | R | | | | | | 239 | 261 | | | 241 | 264 |
| West Chester Pike & I-476 NB Ramps (15) | EB | L | **510** | 133 | 182 | 136 | 187 | 212 | 269 | 136 | 186 | 214 | 271 |
| | | TTT | | 22 | 26 | 222 | 206 | 108 | 164 | 228 | 210 | 112 | 169 |
| | WB | TT | | 171 | 223 | 208 | 264 | 320 | 371 | 208 | 265 | 325 | 374 |
| | NB | L | **520** | 49 | 90 | 50 | 91 | 143 | 214 | 51 | 92 | 144 | 216 |
| | | LT(R) | **520** | 50 | 25 | 50 | 25 | 143 | 53 | 51 | 25 | 145 | 54 |
| | | R | | 195 | #344 | 203 | #359 | 132 | #217 | 207 | #367 | 134 | #224 |
| West Chester Pike & S Lawrence Rd (18) | EB | TTT | **600** | 448 | #564 | 422 | #540 | ~509 | #617 | 427 | #552 | ~579 | #625 |
| | | R | | 20 | m29 | 14 | m17 | 19 | 22 | 14 | m17 | 19 | 23 |
| | WB | LL | **460*** | 145 | m170 | 144 | m138 | 135 | m#186 | 145 | m140 | 137 | m#200 |
| | | TT | | 396 | m562 | 500 | m548 | 665 | m208 | 505 | m553 | 675 | m191 |
| | NB | LL | | 73 | 104 | 81 | 114 | 51 | 78 | 82 | 115 | 52 | 79 |
| | | R | **200** | 215 | 284 | 234 | 317 | 214 | 312 | 237 | 321 | 216 | 315 |
| West Chester Pike & N Lawrence Rd (2) | EB | LL | **460*** | 217 | m235 | 146 | m132 | 242 | m254 | 149 | m129 | 247 | m254 |
| | | TT | | 37 | 66 | 427 | 561 | 534 | m543 | 432 | 566 | 541 | m542 |
| | WB | TTTR | | 279 | 374 | 267 | 360 | 340 | 454 | 272 | 367 | 345 | 461 |
| | SB | L | **325** | 65 | #165 | 65 | #166 | 65 | #166 | 66 | #169 | 66 | #169 |
| | | R | | ~478 | #622 | ~492 | #637 | ~553 | #702 | ~498 | #643 | ~559 | #709 |
| West Chester Pike & Old West Chester Pike (26) | EB | TTR | | 107 | m234 | 77 | m101 | 127 | 126 | 78 | m102 | 127 | m126 |
| | WB | L | **170** | 39 | 65 | 40 | 70 | 40 | 70 | 40 | 70 | 40 | 70 |
| | | TTTR | | 86 | 131 | 89 | 117 | 110 | 145 | 90 | 119 | 112 | 146 |
| | NB | LT | | 42 | 21 | 42 | 22 | 42 | 22 | 42 | 22 | 42 | 22 |
| | | R | | 0 | 28 | 0 | 29 | 0 | 29 | 0 | 29 | 0 | 29 |
| | SB | LTR | | 7 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 7 | 6 |
| S Lawrence Rd & Langford Run Rd (#) | EB | R | | - | 1 | - | 0 | - | 37 | - | 0 | - | 37 |
| | NB | L | | - | 0 | - | 0 | - | 24 | - | 0 | - | 24 |
| S Lawrence Rd & Sussex Blvd (#) | EB | LTR | | 5 | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 5 | 3 |
| | WB | LTR | | 12 | 14 | 12 | 14 | 12 | 14 | 12 | 14 | 12 | 14 |
| | NB | LTTR | | 82 | 120 | 85 | 123 | 108 | 153 | 86 | 124 | 110 | 155 |
| | SB | LTTR | | 32 | 60 | 33 | 61 | 41 | 74 | 33 | 62 | 41 | 74 |

**Average length of dual left turn lanes*

*~: This indicates that the approach is above capacity and the queue length could be much longer.*
*#: This indicates that the volume for the 95th percentile cycle exceeds capacity.*
*m: This indicates that the volume for the 95th percentile queue is metered by an upstream signal.*

*In many cases, the 95th percentile queue will not be experienced due to upstream metering.*
*If the upstream intersection is at / near capacity, the 50th percentile queue represents the max. queue experienced.*

*The queue length reported is the one for the lane with the highest queue in the lane group.*

*ORA 06/28/11*

## Introduction

The site location within the region is illustrated in Figure 1. The proposed development is of an approximate 26-acre site in Marple Township, Delaware County located in the southwest quadrant of the interchange of I-476 and West Chester Pike (PA Route 3). The site has been vacant for the past 30 years and is zoned as "O-1" according to the Township's zoning map. Fronted by West Chester Pike to the north and I-476 to the east, the site is otherwise surrounded by wooded areas plus a residential development of single-family detached houses to the west. Land use in the area adjacent to the site is mainly single-family detached homes.

A mixed use development of the site is proposed that could include up to 400,000 sq ft retail/office floor space plus about 150 residential units. Retail development would be located in the northern portion of the site near West Chester Pike, while the office and residential components would be located in the southern portion of the site. The anticipated opening year of the development is 2015.

The site currently has a right in, right out only access on West Chester Pike. The access was located as far west as possible within the site's West Chester Pike frontage, in order to maximize the distance from the I-476 interchange. This access is proposed to be converted to a full movement signalized intersection and will serve as the primary site access.

The site also has access to South Lawrence Road via Langford Run Road just south of the Lawrence Road overpass of I-476. Langford Run Road at South Lawrence Road provides both left turn and right turn entry movements. However, all exiting movements from the site must turn right to southbound South Lawrence Road. No change is proposed to this intersection.

The study area includes West Chester Pike from New Ardmore Avenue to Old West Chester Pike and the intersections of South Lawrence Road/Langford Run Road and South Lawrence Road/Sussex Boulevard (Figure 2). All intersections are located in Marple Township except the two eastern intersections on West Chester Pike (at North Lawrence Road and at Old West Chester Pike), which are in Haverford Township. The study performed capacity analysis and queue analysis for all intersections in the study area for existing, no-build and build conditions during the AM, PM, and Saturday peak hours for Opening Year 2015 and Design Horizon Year 2020.

## Data Collection

Manual vehicle turning movement counts during weekday morning, evening, and Saturday midday peak periods were conducted at the following intersections:

- West Chester Pike and New Ardmore Avenue
- West Chester Pike and Mather Avenue
- West Chester Pike and I-476 Southbound On/Off Ramp

- West Chester Pike and I-476 Northbound On/Off Ramp
- West Chester Pike and S. Lawrence Road
- West Chester Pike and N. Lawrence Road
- West Chester Pike and Old West Chester Pike
- S. Lawrence Road and Langford Road
- S. Lawrence Road and Sussex Road

The PM peak hour counts for West Chester Pike intersections except at Old West Chester Pike were conducted in March/April 2009. All other manual counts were conducted in 2010. School was in session during the June 2010 intersection counts on South Lawrence Road.

An Automatic Traffic Recorder count with vehicle classification was conducted on the I-476 southbound off ramp in January, 2010. ATR counts with speed classification were conducted on South Lawrence Road in both directions approaching Langford Run Road in June 2010.

The traffic count data is attached in Appendix C.

Crash history from Year 2005 to 2009 was requested and provided by PennDOT for the intersections and roadway segments within the study area. Overall, a total of 85 reportable crashes occurred at the six study intersections on West Chester Pike over the five-year period. The intersection of North Lawrence Road had the highest number of crashes (34), and the intersection of South Lawrence Road was second highest (19). On South Lawrence Road, six crashes occurred at Sussex Boulevard and there were no reportable crashes at the intersection of Langford Run Road. A crash analysis report is attached in Appendix D.

## Existing Study Area Conditions

As illustrated in Figure 2, the study area for purposes of this TIS includes West Chester Pike intersections from New Ardmore Avenue to Old West Chester Pike, and the South Lawrence Road intersections of Langford Run Road and Sussex Boulevard. All intersections are in Marple Township except the intersections of West Chester Pike/North Lawrence Road and West Chester Pike/Old West Chester Pike, which are located in Haverford Township.

**West Chester Pike (SR 0003)** is PA State Route 3 and is an east-west principal arterial. The transportation context is a Community Arterial and the land use context is a Suburban Corridor. The posted speed limit in the area is 40 mph for both directions. The Average Daily Traffic volume of West Chester Pike (Year 2009 data) is 35,000 vehicles west of the I-476 interchange and 45,000 east of the interchange. In the road segment from South Lawrence Road to North Lawrence Road, the ADT on West Chester Pike rises to 52,000 vehicles and then further east is reduced to 37,000 vehicles.

Traffic signals are located at intersections of Old West Chester Pike, North Lawrence Road, South Lawrence Road, I-476 northbound on/off ramps, I-476 southbound off ramp, and New Ardmore Avenue.

These traffic signals fall into two separate interconnected systems located in two different townships. The signals at the intersections of New Ardmore Avenue, I-476 Ramps, and South Lawrence Road belong to a system of seven signals located Marple Township extending from Malin Road to South Lawrence Road, with master controller at Sproul Road. The signals at the intersections of North Lawrence Road and Old West Chester Pike are located in Haverford Township, and belong to a system of 12 signals stretching from North Lawrence Road to Kohl's Driveway, with master controller at Eagle Road.

In the westbound direction, West Chester Pike provides three through lanes through the intersections of Old West Chester Pike and North Lawrence Road and two through lanes further west. At the intersection of Old West Chester Pike, there are three lanes plus a 170-foot exclusive left turn lane. Those three westbound lanes continue through the intersection of North Lawrence Road. Between North and South Lawrence Road, West Chester Pike crosses a 108-foot wide, 200 foot long diagonal bridge structure over Darby Creek. Approaching the signalized intersection of South Lawrence Road, the left-most through lane becomes a left turn only lane, and westbound West Chester Pike provides a dual left turn lane and two though lanes. Just west of the South Lawrence Road signal, the channelized right turn for the on-ramp to I-476 North begins. There is no deceleration lane in advance of the ramp.

West Chester Pike has three westbound lanes plus shoulder on the bridge over I-476 main line approaching the signalized intersection of the I-476 southbound off ramp. The right-most lane is signed for I-476 South only, and exits to the loop ramp before the traffic signal. Two westbound through lanes continue on West Chester Pike through the signals at the I-476 South off ramp and at New Ardmore Avenue.

In the eastbound direction, West Chester Pike has two through lanes at New Ardmore Avenue and approaching the intersection of I-476 southbound off ramp. 325 feet before the I-476 southbound ramp signal, the eastbound approach widens within the median area to provide a third through lane through the signal. Also, a channelized right turn is provided for the eastbound West Chester Pike traffic to enter the I-476 southbound on ramp. No right turn deceleration lane is provided.

Continuing east, West Chester Pike provides three eastbound through lanes plus shoulder across the bridge over I-476 main line, plus one separate channelized left turn lane for left turns into the I-476 northbound on ramp. East of the I-476 North ramp signal, West Chester Pike carries four eastbound lanes --- three through lanes plus a right turn lane for turns into South Lawrence Road. When approaching the intersection of North Lawrence Road, two lanes continue as through lanes past the intersection while the left-most through lane turns into an exclusive left turn lane. In addition, a channelized exclusive left turn lane is provided to form dual eastbound left turn lanes at the intersection of North Lawrence Road. The two eastbound through lanes continue through the intersection of Old West Chester Pike. Left turns are prohibited in the eastbound direction at that intersection.

**South Lawrence Road** (SR 1020) is a four-lane minor arterial that extends from a signalized intersection with West Chester Pike at the north end to a signalized intersection with Sproul Road (PA Route 320) to the south. The roadway is classified as an arterial on Marple Township's Circulation Plan. There are

several signalized intersections along the route – at the Pathmark store driveway, at Sussex Boulevard and two other intersections to the south between Sussex Boulevard and Sproul Road. Sussex Boulevard is located within a school zone with flashing school speed limit signs for the St. Pius X school. The posted speed limit along South Lawrence Road is 45 mph. The Average Daily Traffic Volume on South Lawrence Road is 15,000 vehicles.

The intersection of Langford Road with South Lawrence Road is unsignalized. Entrance to Langford Road is permitted via right-turn and left-turn from South Lawrence Road. A 160-foot long left-turn lane is provided on northbound South Lawrence Road for motorists waiting for a gap in southbound traffic before turning left into Langford Road. Exit from Langford Road is restricted to right-turn-only by median channelization. The left turn exit is prohibited because of the grade along South Lawrence Road and associated sight distance limitations (from Langford Road looking right to the south on South Lawrence Road).

Public Transportation

Currently, three SEPTA bus routes operate along West Chester Pike through the study area. Two of the routes, Route 104 (69th Street Terminal to West Chester University) and Route 120 (69th Street Terminal to Cheyney University) travel straight through the study area on West Chester Pike. The Route 123 (69th Street Terminal to King of Prussia) travels between the east on West Chester Pike and the north on I-476. The total number of SEPTA buses on West Chester Pike during the peak hours totals 6 to 7 buses in each direction. There are no public transportation routes on South Lawrence Road.

Pedestrian Facilities

Sidewalk exists on the north side of West Chester Pike from New Ardmore Avenue to Mather Avenue, but otherwise there is no sidewalk on West Chester Pike in the study area. Shoulder of 8 - 10' in width exists on both sides of West Chester Pike from New Ardmore Avenue to the I-476 northbound off ramp. Further east, shoulder is narrower if present at all. There is no shoulder on the north side of West Chester Pike between Old West Chester Pike and North Lawrence Road. The northwest corner at North Lawrence Road has guiderail at the curb and is signed 'no pedestrian crossing' across North Lawrence Road and across West Chester Pike.

Signalized intersections on West Chester Pike provide at least one pedestrian crosswalk across West Chester Pike except at South Lawrence Road; crossing of West Chester Pike at South Lawrence Road is prohibited. The crossings of West Chester Pike have pushbuttons and pedestrian signal indications. Only the intersections of West Chester Pike at New Ardmore Avenue and Old West Chester Pike provide crossings of all four legs of the intersection. For pedestrians walking along West Chester Pike, street crossings on the north side are prohibited at the I-476 southbound off ramp and at North Lawrence Road.

At the signalized intersection of Sussex Boulevard, all four legs have crosswalks; pedestrians walk on the green indication. On South Lawrence Road, sidewalk exists south of Sussex Boulevard. Between Sussex

Boulevard and Langford Run Road, there is shoulder but not sidewalk on the western (site) side. Sidewalk exists on the eastern side but on the residential frontage road rather than on Lawrence Road. Sidewalk extends over the bridge structure over I-476, but then ends. Between I-476 and West Chester Pike, South Lawrence Road has no sidewalk but has paved shoulder.

Bicycle Facilities

There are no striped bicycle lanes in the study area, however there are shoulders throughout most of the corridor. In the westbound direction approaching Old West Chester Pike to South Lawrence Road, there is no shoulder and bicyclists use the right lane.

PennDOT is investigating the potential for adding bike lanes to West Chester Pike. No specific plan was available at the time of this TIS.

Existing Traffic Conditions

As mentioned previously, manual turning movement counts were conducted at the signalized intersections on West Chester Pike as well as two intersections on South Lawrence Road in the study area. The counts were balanced between intersections to equalize the volume departing an intersection and the volume entering the adjacent intersection. The existing AM, PM, and Saturday peak hour traffic volumes at the study area intersections are illustrated in Figures 3, 4, and 5.

Volume capacity analysis for each of the peak hours was conducted in Synchro using the HCM methodology. During the AM peak hour, N. Lawrence Road intersection on West Chester Pike operates at Level of Service 'E' with average vehicular delay of more than 60 seconds. During the PM and Saturday peak hours, all the intersections are currently operating acceptably with level of service 'D' or better. Existing service levels and delays at the intersections in the study area are illustrated in Figures 6, 7, and 8 and Tables 1 - 3. Queue analysis in Synchro was performed to compare average and 95$^{th}$ percentile queues against the available storage length. The queue results are shown in Tables 4 – 6. Tables 1 – 6 are located in the Executive Summary.

## Other Planned Development

Other than the Marple Associates development, there are three planned developments in the vicinity of the study area.

1. A new "Outpatient Center" operated by Crozer Keystone is proposed to be constructed on South Lawrence Road at the site currently occupied by the Pathmark Supermarket. The supermarket closed in October 2010, after the traffic data for this study was collected. The proposed new "Outpatient Center" will provide a total of about 38,000 SF of floor space in a two-story building. Access to the site will be using the existing signalized intersection of Pathmark Drive. It is estimated that this development is going to generate 60 to 70 new vehicular trips during the peak hours. The proposed opening year is 2012.

2. The Havertown YMCA is proposed to be constructed on Eagle Road at North Lawrence Road. The proposed opening year is 2012. Based on the information provided by McMahon Associates, the traffic engineer for this development, the proposed YMCA will generate 220 vehicular trips (144 in and 76 out) during the morning peak hour and 341 trips (187 in and 154 out) during the evening peak hour. 15 percent of these trips are distributed to West Chester Pike via North Lawrence Road.

3. The former Gamma Swim Club property, located within the residential area north of West Chester Pike and between Brookthorpe Avenue and the I-476 southbound off ramp right of way, has been proposed for development with a 52,000 sq. ft. synagogue. The proposed development is going through the Marple Township review process. Access to the synagogue from the west on West Chester Pike would be via the signalized intersection of New Ardmore Avenue; access from the east would be via Mather Avenue.

## Other Planned Transportation Improvements

According to the information provided from both PennDOT and Marple Township, currently there is no planned roadway improvement within the study area. However we are aware of the following study that may result in an improvement project by others:

The Feasibility Study of Transit Signal Priority on Route 3 West Chester Pike (2011) performed for Delaware County Transportation Management Association (DCTMA) studied Route 3 from Upper Darby Township through Edgemont Township. The study recommends improvements to bus stops and signal priority for approaching buses. A pilot transit signal priority project for Route 3 in Haverford and Marple Townships was recommended by the study, but a project has not yet been funded.

## Year 2015 Traffic Conditions without the Proposed Development

In order to evaluate the impact on the roadway network of the newly generated traffic from the proposed Marple Associate development, the traffic conditions in the opening year 2015 are first analyzed without the development as a baseline condition.

The annual traffic growth rate in Delaware County is 0.21 percent in the most recent PennDOT Traffic Data Report. To project the no-build traffic in Year 2015, the existing peak hour traffic volumes were increased by about 1.3 percent, a compounded result of 0.21 percent annual growth rate over six years. In addition, the projected new trips generated by the proposed “Outpatient Center” were added while the new trips by the other two planned developments (YMCA and synagogue) were assumed to be already captured within the background growth. This is because the proposed new “Outpatient Center” is located on South Lawrence Road within the study area and its driveway (Pathmark Drive) is located north of Langford Run Road, one of two access points for the proposed Marple Associate development. The other two planned developments are located further outside the study area and their generated

trips through the studied intersections are minor. Since the "Outpatient Center" will take over the Pathmark site and the supermarket was closed after the traffic counts for this TIS were completed, the trips generated by Pathmark should be discounted from the future traffic volumes. However, to be conservative, the discount was only applied to the PM peak hour based on the traffic volume numbers presented in the intersection signal permit plan. Also, only half of those numbers were considered trips generated by the supermarket and discounted. The other half of supermarket trips were considered as pass-by trips that would remain on the roads.

With this process, the Year 2015 peak hour traffic volumes without the proposed Marple Associates development are established as illustrated in Figure 9, 10, and 11.

Capacity analysis as well as queue analysis was conducted in Synchro at the intersections with the projected Year 2015 peak hour traffic without the proposed Marple Associates development. The same cycle lengths as existing were used during three peak periods (100 seconds for AM and Saturday, 120 seconds for PM). Signal timings and offsets were optimized and HCM output was used. The Level of Service results for AM, PM and Saturday peak hours are illustrated in Figures 12, 13, and 14 and Tables 1 - 3 while the queue results are summarized in Tables 4 – 6.

Though the volumes are higher in 2015 than existing, it can be seen that with the optimized signal timings most of the intersections' performance improve. All of the intersections will operate at LOS 'D' or better during all three peak hours. The queue analysis reveals that the northbound right turn on South Lawrence Road at West Chester Pike will have a queue longer than the available storage during all three peak periods. The eastbound West Chester Pike through movement at South Lawrence Road exceeds storage in the PM peak hour. These are existing conditions. Other than this, the available storages are sufficient to accommodate the queuing at each of the intersections during peak periods.

## Year 2020 Traffic Conditions without the Proposed Development

The traffic volumes in the design horizon year 2020 without the proposed Marple Associates development were derived in the same way as the opening year 2015 traffic without the proposed development. The existing traffic volumes were increased by 2.33 percent, the trips generated by the proposed "Outpatient Center" were added and the adjustment was made in the PM peak for the loss of the supermarket. The projected Year 2020 traffic volumes without the proposed development are illustrated in Figures 15, 16, and 17.

Capacity analysis as well as queue analysis was conducted in Synchro at the intersections with the projected Year 2020 peak hour traffic without the proposed Marple Associate development. The same cycle lengths as existing were used during three peak periods (100 seconds for AM and Saturday, 120 seconds for PM). Signal timings and offsets were optimized and HCM output was used. The LOS results are illustrated in Figures 18, 19, and 20 and Tables 1 - 3 while the queue results are summarized in Tables 4 - 6. It can be seen that the results are very similar to no-build conditions in opening year 2015.

All of the intersections will operate at LOS 'D' or better during all three peak hours. The available storages are generally sufficient to accommodate the all the queuing traffic at each intersection during all peak periods except for the movements cited under 2015 No Build conditions.

## Development Description

The proposed 26-acre development is located in the southwest quadrant of the interchange of I-476 and West Chester Pike (PA Route 3). A mixed use development of the site is proposed that could include up to 400,000 sq ft retail/office floor space plus about 150 residential units.

The site currently has a right in, right out only driveway on West Chester Pike. The driveway was located as far west as possible within the site's West Chester Pike frontage, in order to maximize the distance from the I-476 interchange. This driveway is proposed to be converted to a signalized full-movement access.

The site also has access to South Lawrence Road via Langford Run Road just south of the Lawrence Road overpass of I-476. Langford Run Road at South Lawrence Road provides both left turn and right turn entry movements. However, all exiting movements from the site must turn right to southbound South Lawrence Road. This unsignalized intersection will remain the same after the development of the proposed project. Allowing left turn exits would require a traffic signal. A feasibility study of signalizing the intersection was prepared (Appendix J). PennDOT has determined that the intersection should not be signalized due to the downgrade on South Lawrence Road approaching from the south.

### Trip Generation

In order to estimate the new trips to be generated by the proposed Marple Associates development, the procedure used and assignment is summarized as follows:

- Trips for the individual uses were generated individually in accordance with ITE Trip Generation 8th Edition.
- Pass by trips were calculated. These trips were deducted from total trips to determine the New Trips added to the roadway network.
- Trips that could be expected to be generated by the other uses along Langford Run Road were estimated using the procedure for mixed use development internal trips in the Trip Generation Handbook, Second Edition.
- The 'internal' retail trips were deducted from the pass by trips.

Overall, the proposed development is projected to generate a total of 609 new vehicle trips on the roadway network in the morning peak hour (355 entering trips and 254 exiting trips), 1253 new vehicle trips in the evening peak hour (597 entering trips and 656 exiting trips), and 1423 new vehicle trips in the Saturday peak hour (743 entering trips and 681 exiting trips). Please refer to the worksheets in the Technical Appendix F for the detailed trip generation calculation.

Trip Distribution

The direction of approach and departure of new trips to the Marple Associates development was estimated based on two factors. For retail uses, the population distribution within five miles of the site was utilized. For residential and office/commercial, the existing traffic patterns on the road network during the peak hours were utilized. The resulting estimate is shown below and illustrated in Appendix G:

| Direction of Approach/Departure | Retail | Office/Residential |
|---|---|---|
| East on West Chester Pike | 32% | 21% |
| East on North Lawrence Road | 6% | 11% |
| West on West Chester Pike | 16% | 22% |
| North on I-476 | 15% | 26% |
| South on I-476 | 15% | 10% |
| South on South Lawrence Road | 16% | 10% |

For traffic approaching the development from the east on West Chester Pike or from the south on I-476, the site traffic was routed either to the West Chester Pike entrance or the Lawrence Road entrance based on the proposed location of the particular use within the site along Langford Run Road. All site traffic from the west on West Chester Pike and from the north on I-476 were routed to the West Chester Pike entrance, and all traffic from the south on Lawrence Road was routed to the Lawrence Road entrance.

Pass by trips were routed from the roadway network into and out of Langford Run Road (acting as diverted link trips rather than new trips on the roadway network). For the pass by trips entering via a left turn from northbound South Lawrence Road onto the Langford Run Road access, they cannot continue north by making a left turn from Langford Run Road onto South Lawrence Road since that left turn is prohibited. These pass by trips were routed to the access on West Chester Pike.

This results in a distribution of peak hour site traffic as illustrated in Figures 21, 22, and 23.

Diversion of Public Traffic

In addition, the effect of the “new” Langford Run Road on non-development traffic was considered in developing the future traffic with the proposed development. The extended Langford Run Road connects West Chester Pike and South Lawrence Road. It is expected that some drivers currently commuting on these two roads would use the “new” Langford Run Road as an alternative route to travel between the west on West Chester Pike and the south on South Lawrence Road. The maximum number of trips that could potentially divert to Langford Run Road as a bypass route is based solely on origin and destination. It was estimated that 67% of the motorists whose trip origin-destination could be served by

using Langford Run Road will actually divert to Langford Run Road. Regular commuters (and anyone navigating by GPS) will use the diversion route; infrequent travelers will tend to stay on the main roads. The diversion methodology is detailed in a memo dated February 9, 2010 which is included in the Technical Appendix H.

Proposed Improvements

The following changes are being proposed in order to improve access to the site and the traffic operation in the study area:

- Create a full-movement signalized intersection at the intersection of Langford Run Road and West Chester Pike, so that Langford Run Road can serve as the main access to the Marple Associates development site. Proposed modifications include:
    - a 'break' in the median along West Chester Pike at the site access drive so as to permit left-turn entry and exit in addition to right-turns,
    - construction of a westbound left-turn lane on West Chester Pike at the proposed median 'break',
    - construction of a third eastbound through lane and a right turn lane on West Chester Pike approaching the intersection, and
    - signalization of the modified intersection, with pedestrian crossing of West Chester Pike on the west side of the intersection.
- Extend Langford Run Road within the site southeastwardly to connect to the existing intersection with South Lawrence Road at a point about 0.35 miles south of PA Route 3.
- Utilize the existing intersection of Langford Run Road with South Lawrence Road, including the existing separate northbound left-turn lane but with no signalization and with left-turns prohibited from Langford Run Road to northbound South Lawrence Road – all of which are existing conditions. This location will serve as a secondary access point to the site.
- Eliminate the existing southbound yield right-turn off ramp from I-476 (Ramp S-WC) and direct all southbound off ramp traffic to the signalized intersection with West Chester Pike; the signalized ramp will be widened to add a separate right turn lane and necessary storage length.
- At the three-lane approach of I-476 Northbound off ramp on West Chester Pike, change the ramp's center lane from the existing shared left-and-through to a shared left, through and right turn lane and modify the existing overhead lane control signing. The pedestrian operation at the signal will need to be modified for a double-right turn movement from the ramp.

- On the I-476 Northbound on ramp, where the lanes from eastbound and westbound West Chester Pike meet, restripe the ramp to extend the separate lanes and move the merge area further north along the ramp. This will reduce the conflict perceived by drivers and increase the rate of flow through this area, which should act to decrease backups on the ramp.
- Provide a westbound right turn deceleration lane on West Chester Pike for Mather Avenue, beginning west of the pedestrian crosswalk at the new Langford Run Road signal.
- Extend the sidewalks on West Chester Pike from New Ardmore Avenue east to Langford Run Road.

The concept plan which illustrates these proposed improvements is included in the Executive Summary and in Appendix P.

In addition to these roadway improvements, it is recommended that the timings and offset of the signals along West Chester Pike included in the study area be adjusted and optimized. An interconnection by fiber-optic cable will be established between the two separate interconnected systems on West Chester Pike in Marple Township and Haverford Township, and the signals will operate off a single master. Township representatives indicated at a February 15, 2011 meeting at PennDOT that the two townships could reach an agreement on how to control a combined system.

Furthermore, if deemed beneficial by PennDOT and if supported by both Marple and Haverford Townships, Traffic Adaptive Control will be installed at all the signals from Old West Chester Pike to New Ardmore Avenue.

## Year 2015 Traffic Conditions with the Proposed Development

To develop the opening year 2015 traffic with Marple Associates development, first the opening year 2015 traffic without the proposed development obtained earlier was adjusted to account for the traffic diversion due to the "new" extended Langford Run Road. Then these adjusted year 2015 background traffic volumes were further adjusted to reflect pass-by trips and the new trips associated with the proposed development were added. By going through this process, the opening year 2015 traffic volumes with the proposed development were obtained and are illustrated in Figure 24, 25, and 26.

Capacity analysis and queue analysis were conducted in Synchro with these volumes and with the proposed improvements. The same signal cycle lengths as existing were used for the three peak periods (100 seconds for AM and Saturday, 120 seconds for PM). Signal timings and offsets were optimized, but optimization was not based solely on overall intersection level of service. In accordance with a preliminary review (Appendix Q, letter of November 29, 2010) the side street green splits were adjusted closer to their existing values so that movement delays and queuing were comparable to existing. The

LOS results are illustrated in Figures 27, 28, and 29 and Tables 1- 3; the queue results are summarized in Tables 4 - 6.

With the additional traffic of the proposed Marple Associates development, the delay at each intersection generally increases. However, the results are comparable to those in Year 2015 without the development. All the intersection overall levels of service are 'D' or better and the differences in overall delay with or without the proposed development are all within 10 seconds. The queue results are similar to no-build conditions as well. Other than the two movements mentioned under no-build conditions, the available storages are sufficient to accommodate the queuing for all movements at each of the intersections during peak periods.

## Year 2020 Traffic Conditions with the Proposed Development

The design horizon year 2020 traffic volumes with the proposed development were developed in a similar process as developing the opening year 2015 traffic. The Year 2020 volumes are illustrated in Figures 30, 31, and 32.

Capacity analysis and queue analysis were conducted with these volumes and with the proposed improvements in Synchro with optimized signal timings and offsets. As with the 2015 analysis, the optimization considered side street green splits. The same cycle lengths as existing were used for the three peak periods (100 seconds for AM and Saturday, 120 seconds for PM). The level of service results are illustrated in Figure 33, 34, and 35 and the queue results are summarized in Table 4-6.

The results are similar to those in Year 2015. Level of Service at each intersection is 'D' or better during all three periods, except for the intersection of N. Lawrence Road which is LOS 'E' in the AM peak. Intersection delays in Year 2020 with development increase by less than 10 seconds compared with Year 2020 delays without the proposed development. Queue results are comparable to the queues without the proposed development. Other than the two movements mentioned under no-build conditions, the available storages are sufficient to accommodate the queuing for all movements at each of the intersections during peak periods.

## Recommendations and Conclusion

The roadway improvements described on pages 20-21 of this report and illustrated on the Concept Plan are recommended in order to provide access to the site and to accommodate projected site traffic. It is also recommended that the two separate signal systems in Marple Township and Haverford Township be connected by establishing a fiber optic cable connection across the Darby Creek bridge between the controllers at North Lawrence Road and South Lawrence Road, and operating the signals on a single master.

With the improvements described above, overall intersection delay with development remains within ten seconds of the no-build delay at all study intersections in both the Opening Year 2015 and Design Horizon Year 2020. Overall intersection levels of service with development remain the same as no-build levels of service at all intersections with the following exceptions: the intersection of North Lawrence Road (LOS 'D' to LOS 'E') in the 2020 AM peak hour; intersections of North Lawrence Road (LOS 'C' to LOS 'D') and Old West Chester Pike (LOS 'B' to LOS 'C') during the 2015 and 2020 PM peak hour; and the intersection of I-476 Northbound Off-Ramp (LOS 'B' to LOS 'C') during the 2015 and 2020 Saturday peak hour. Overall intersection levels of service with development are all 'D' or better in all peak hours except for the intersection of North Lawrence Road in the 2020 AM peak. All queues in the Future Horizon Year 2020 are within the available storage length, except two individual movements that exceed storage under existing and no-build conditions.

If deemed beneficial by PennDOT and if supported by both Marple and Haverford Townships, Traffic Adaptive Control will be installed at all the signals from Old West Chester Pike to New Ardmore Avenue as part of the offsite improvements. Although no analysis was conducted to quantify the effects of Traffic Adaptive Control, there is little doubt that the traffic operation at the signalized intersections within the study area would benefit from this new technology. With the addition of Traffic Adaptive Control, the future intersection levels of service and the queue lengths would be better than what is shown in this report.

Conclusion

The developer is seeking a full movement signalized access to the Marple Associates site at West Chester Pike and Langford Run Road in order to enhance access to the 26-acre site, making successful development feasible. However, full movement access will also provide a number of benefits to the road network operation when compared with the existing right in, right out access:

- By providing direct access, it prevents undesirable movements by drivers attempting to reach the development (such as a U turn from westbound West Chester Pike at the New Ardmore Avenue signal) or departing the development (such as a U turn from eastbound West Chester Pike at the I-476 NB on-ramp in order to proceed west on West Chester Pike).
- By providing direct access, it helps prevent overloading and capacity/queuing problems that would occur at other intersections resulting from drivers traveling to the development via indirect access.
- It provides a bypass (via Langford Run Road) of a congested area of West Chester Pike for non-development motorists traveling between the west and the south.

The proposed transportation improvements will accommodate future traffic sufficiently and safely without deteriorating the traffic operation at the adjacent intersections or roadway network in the project area.

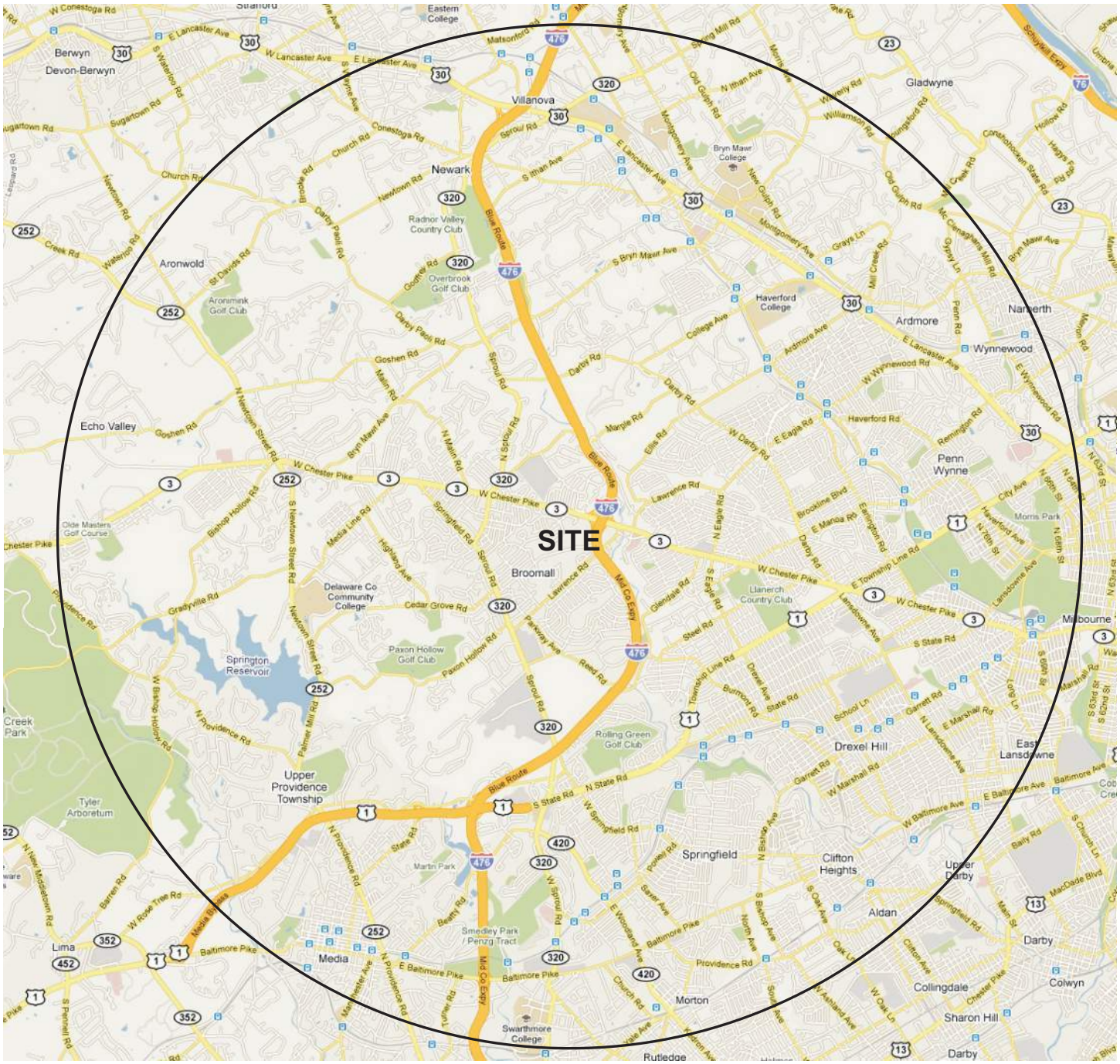
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 1

# Site Location Map

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




1 Mile

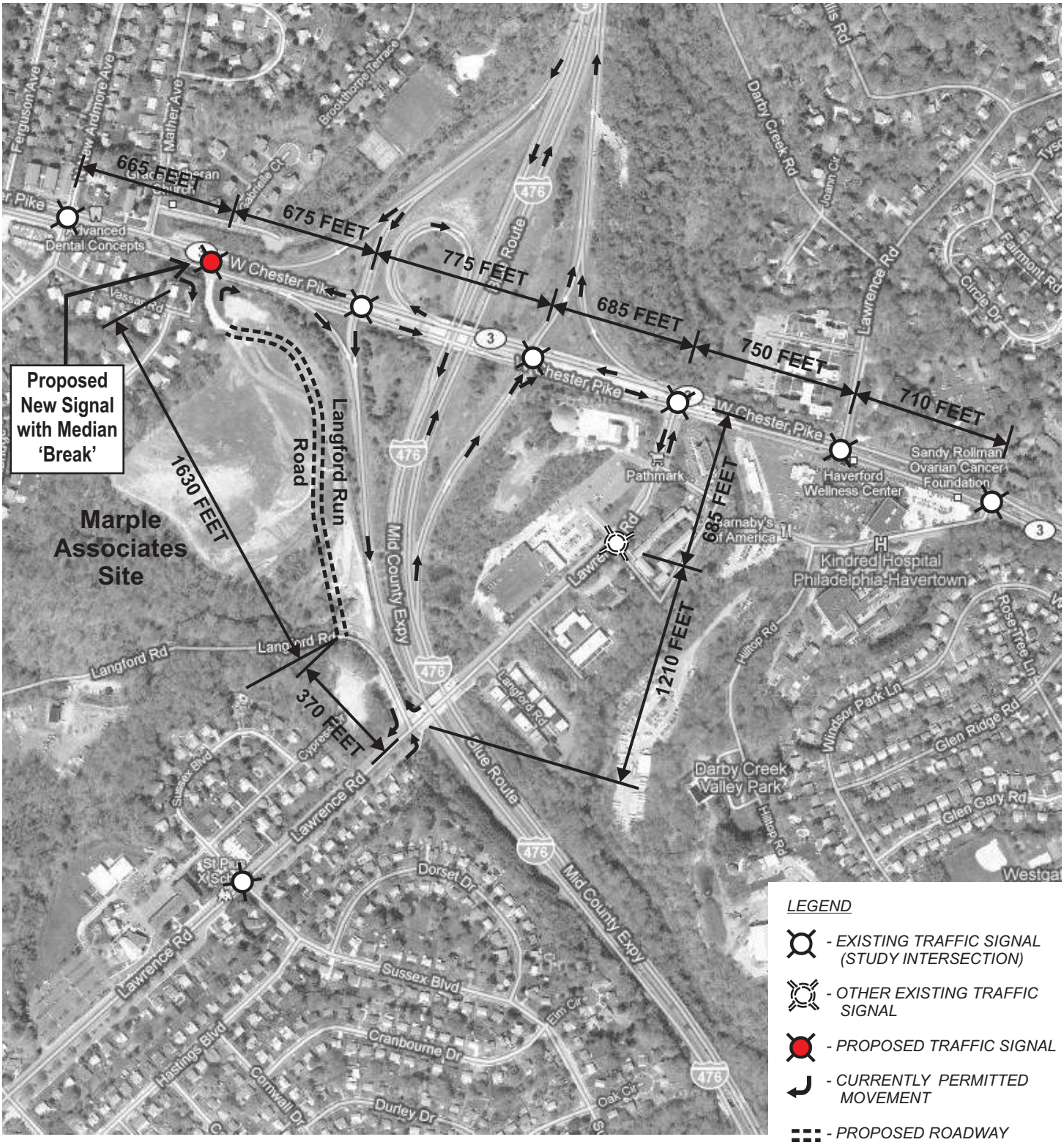
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 2

# Study Area

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




LEGEND

- EXISTING TRAFFIC SIGNAL (STUDY INTERSECTION)
- OTHER EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- CURRENTLY PERMITTED MOVEMENT
- PROPOSED ROADWAY

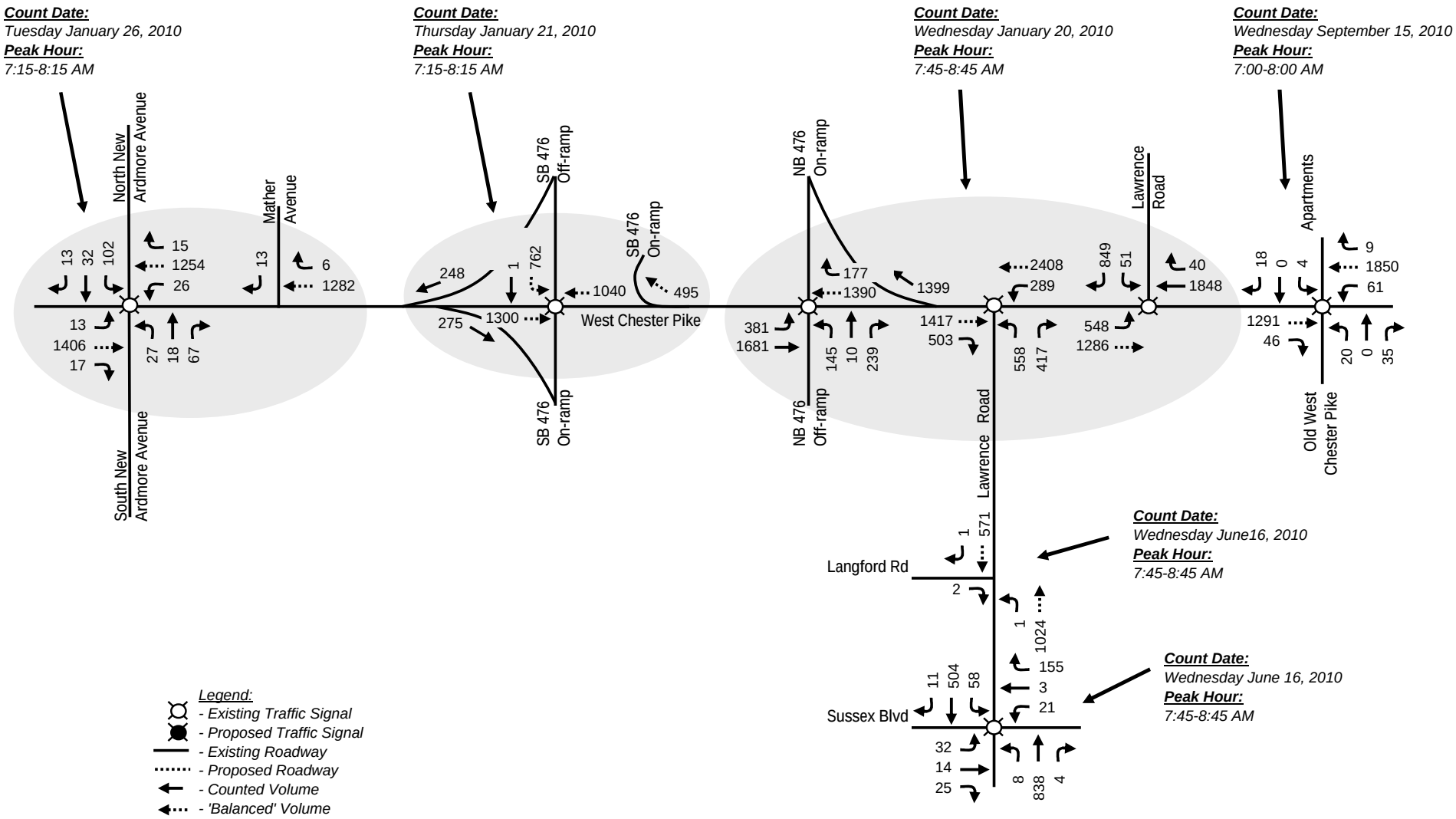
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 3

# Existing AM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



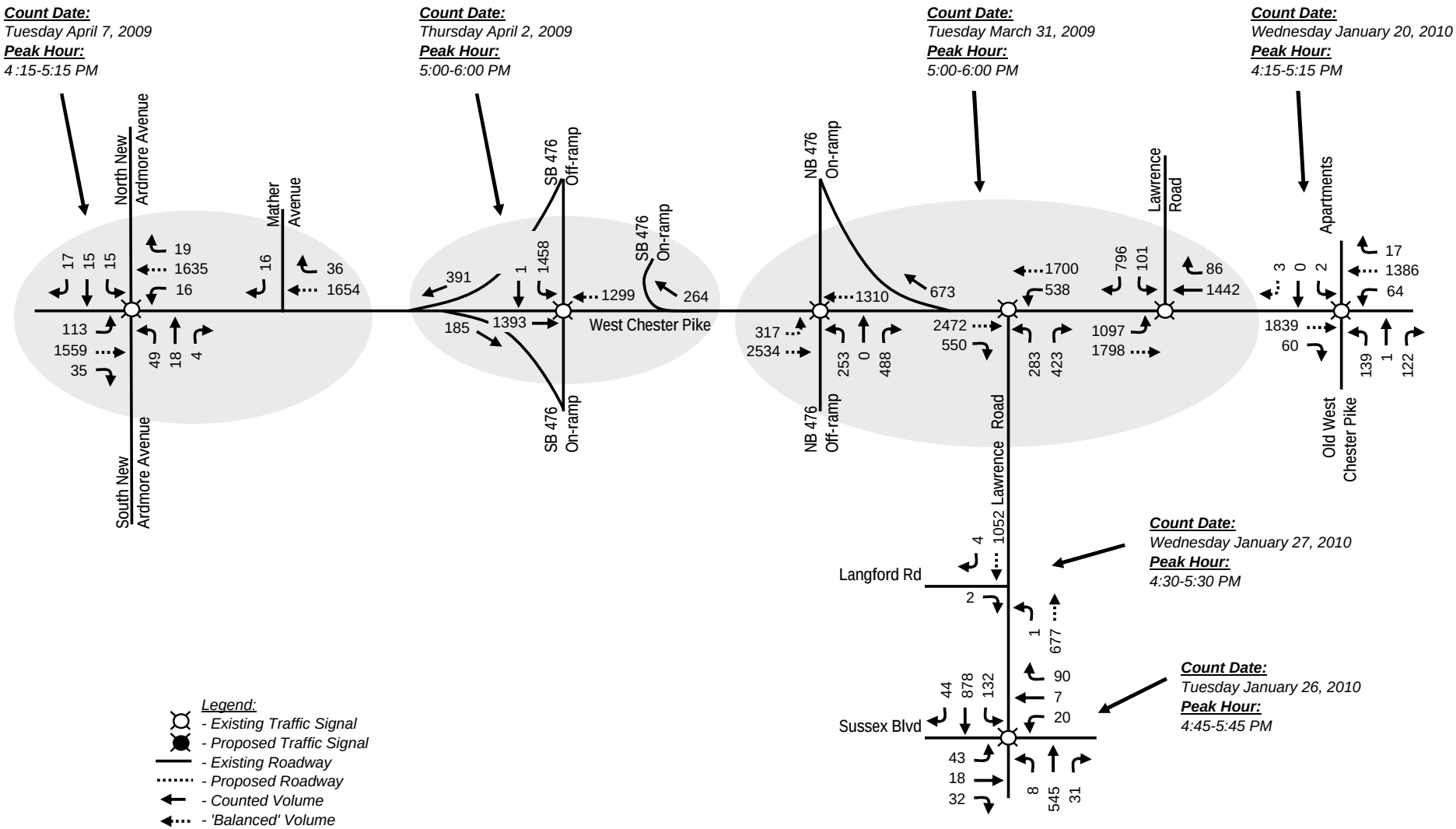
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 4

# Existing PM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



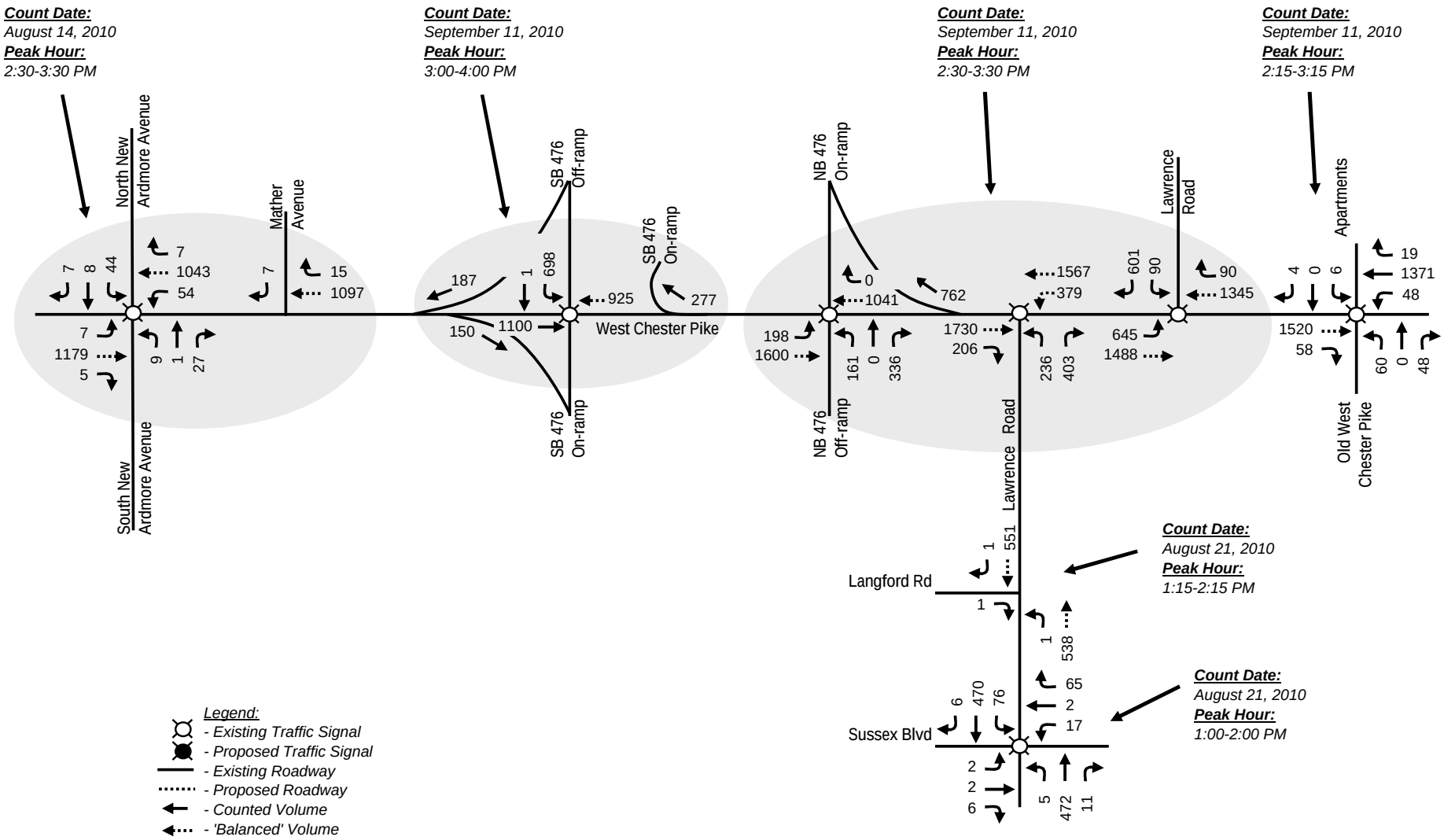
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 5

# Existing Saturday Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



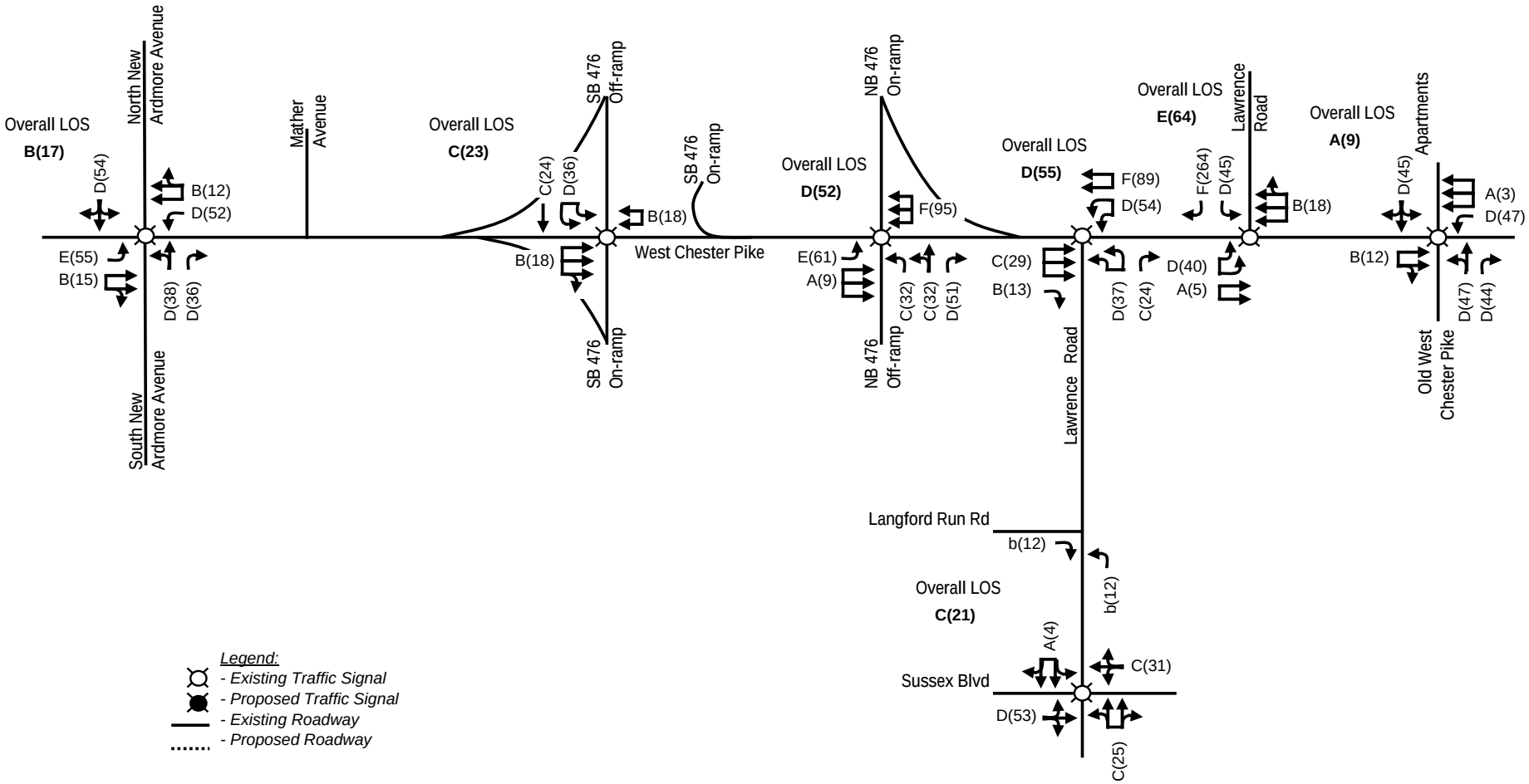
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 6

# Existing AM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



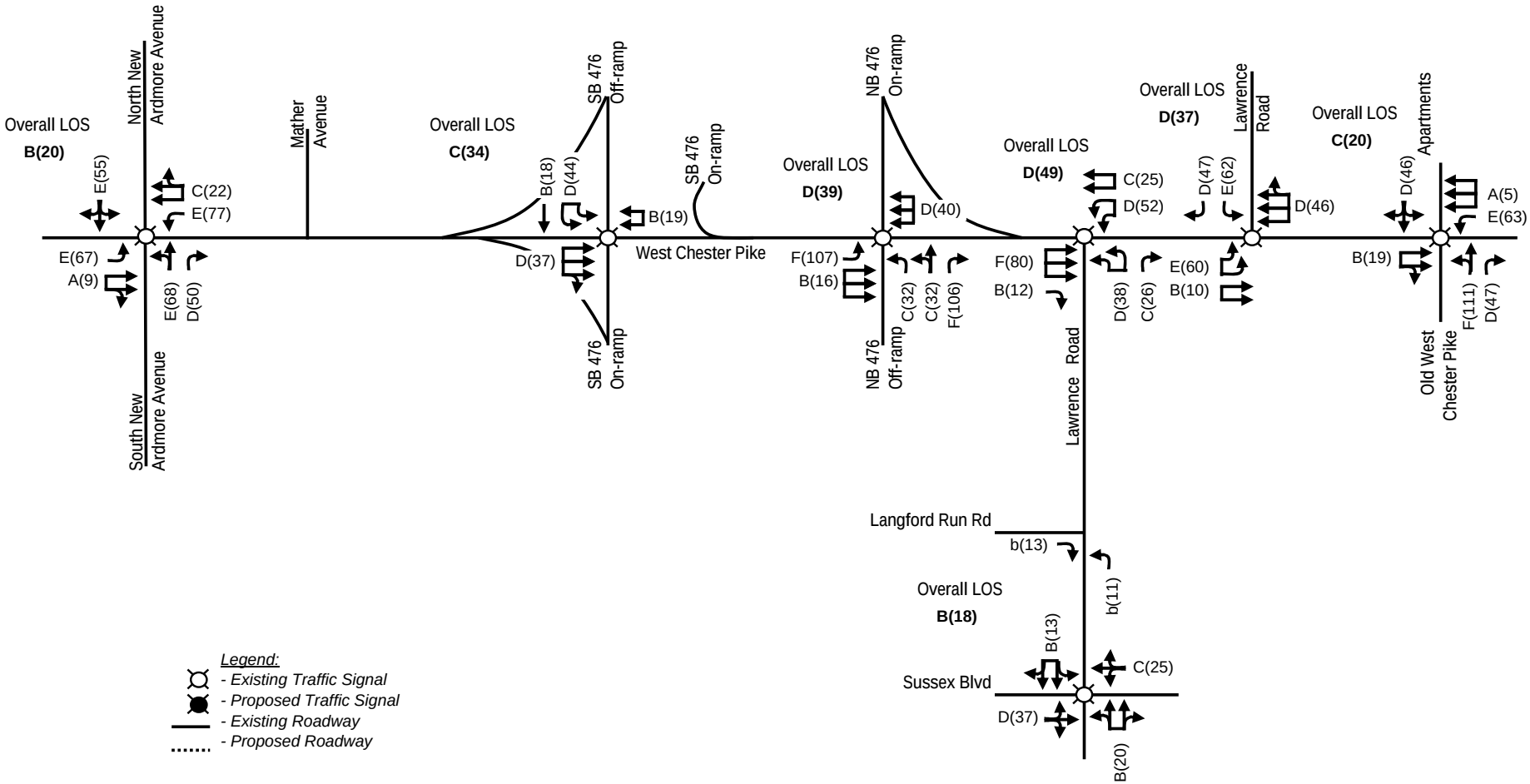
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 7

# Existing PM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



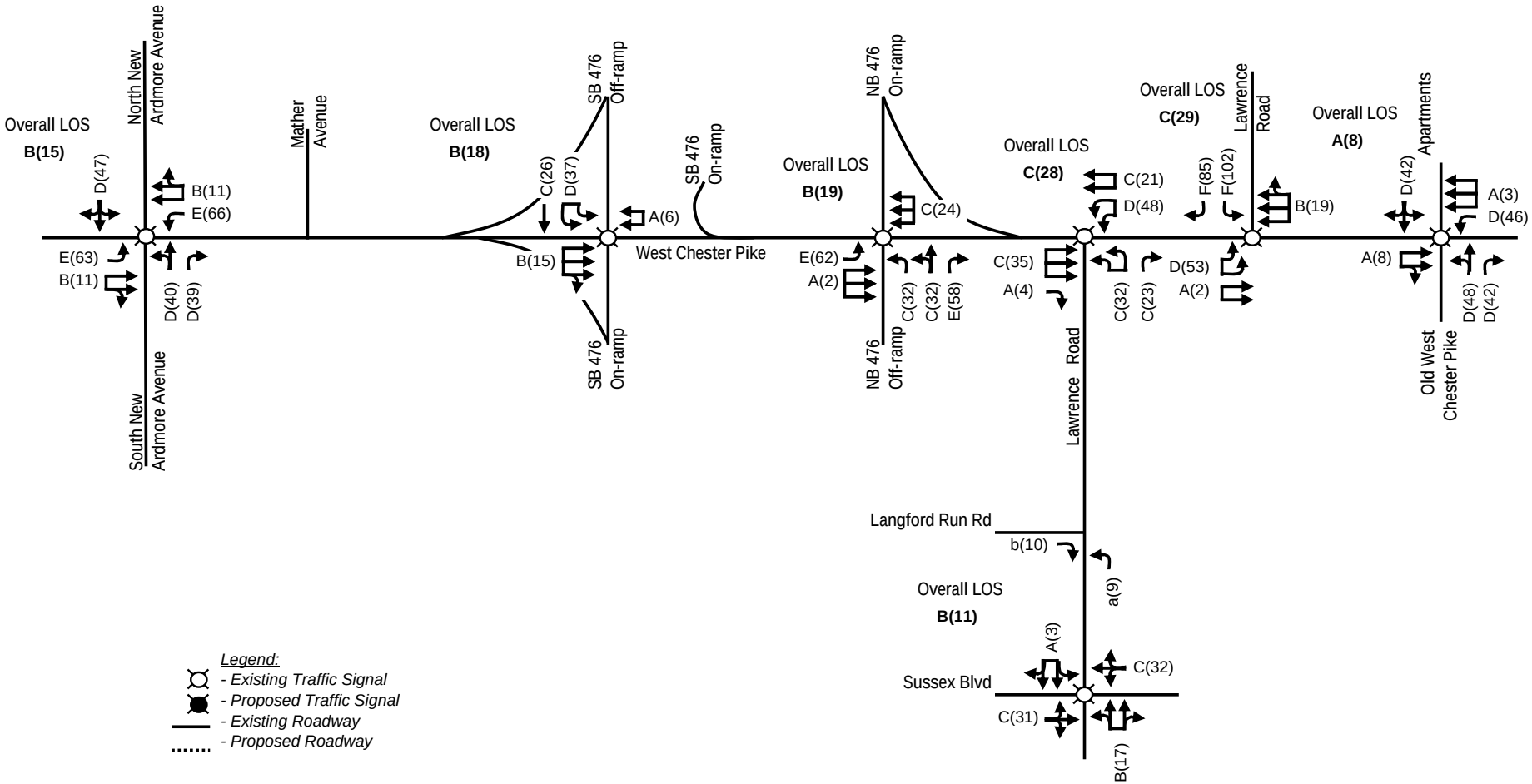
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 8

# Existing Saturday Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



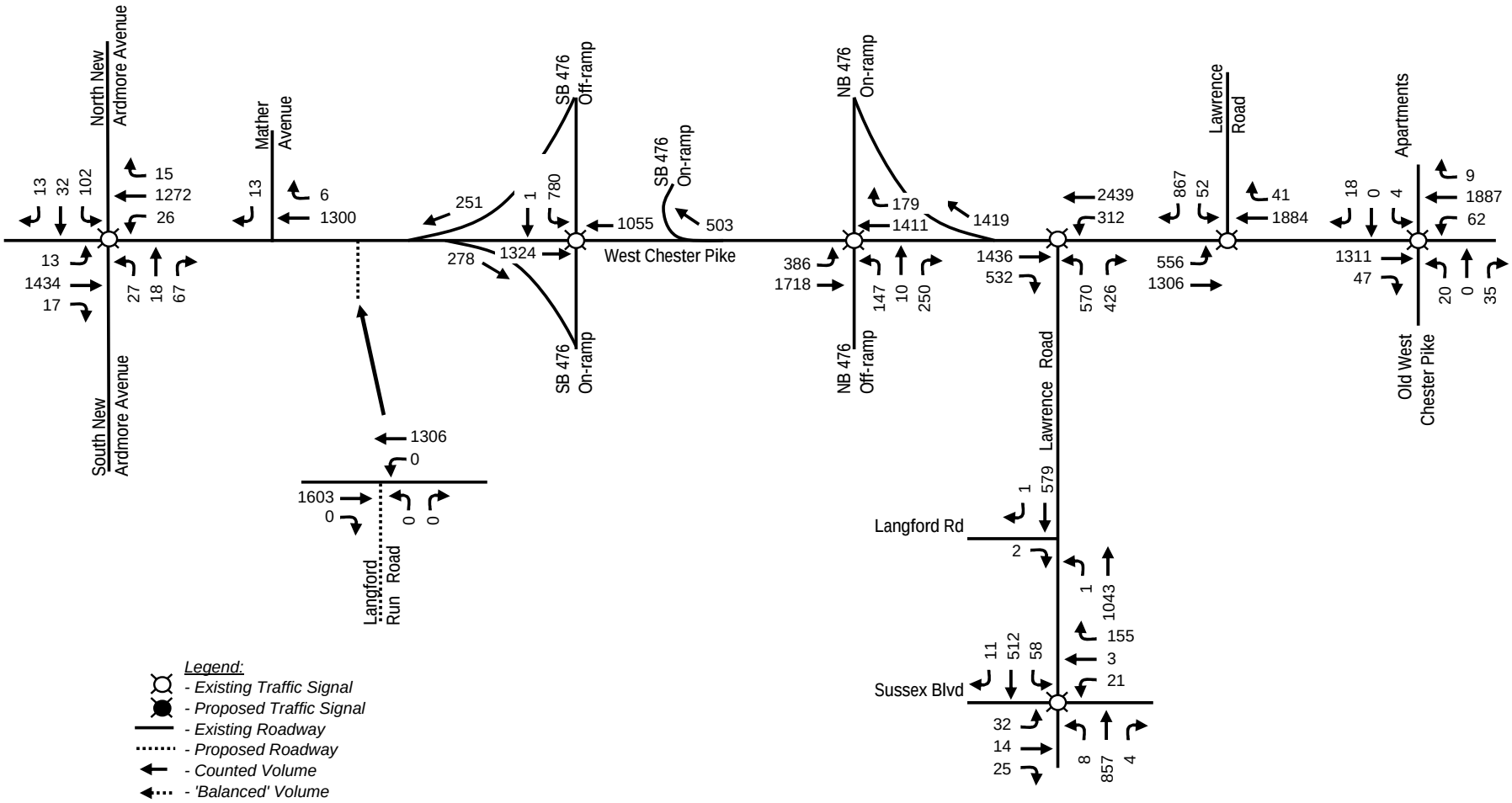
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 9

# 2015 No Build AM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



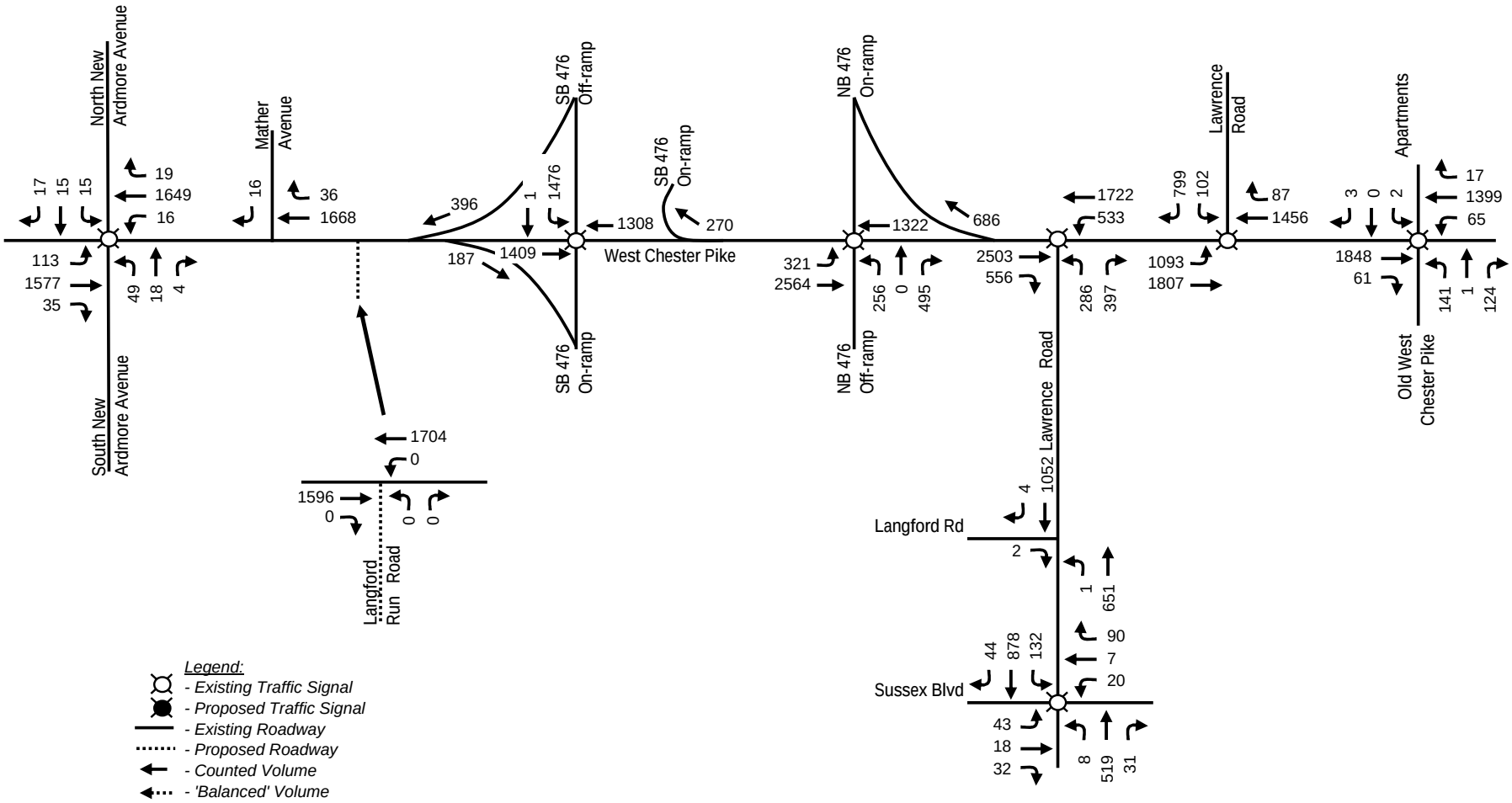
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 10

# 2015 No Build PM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



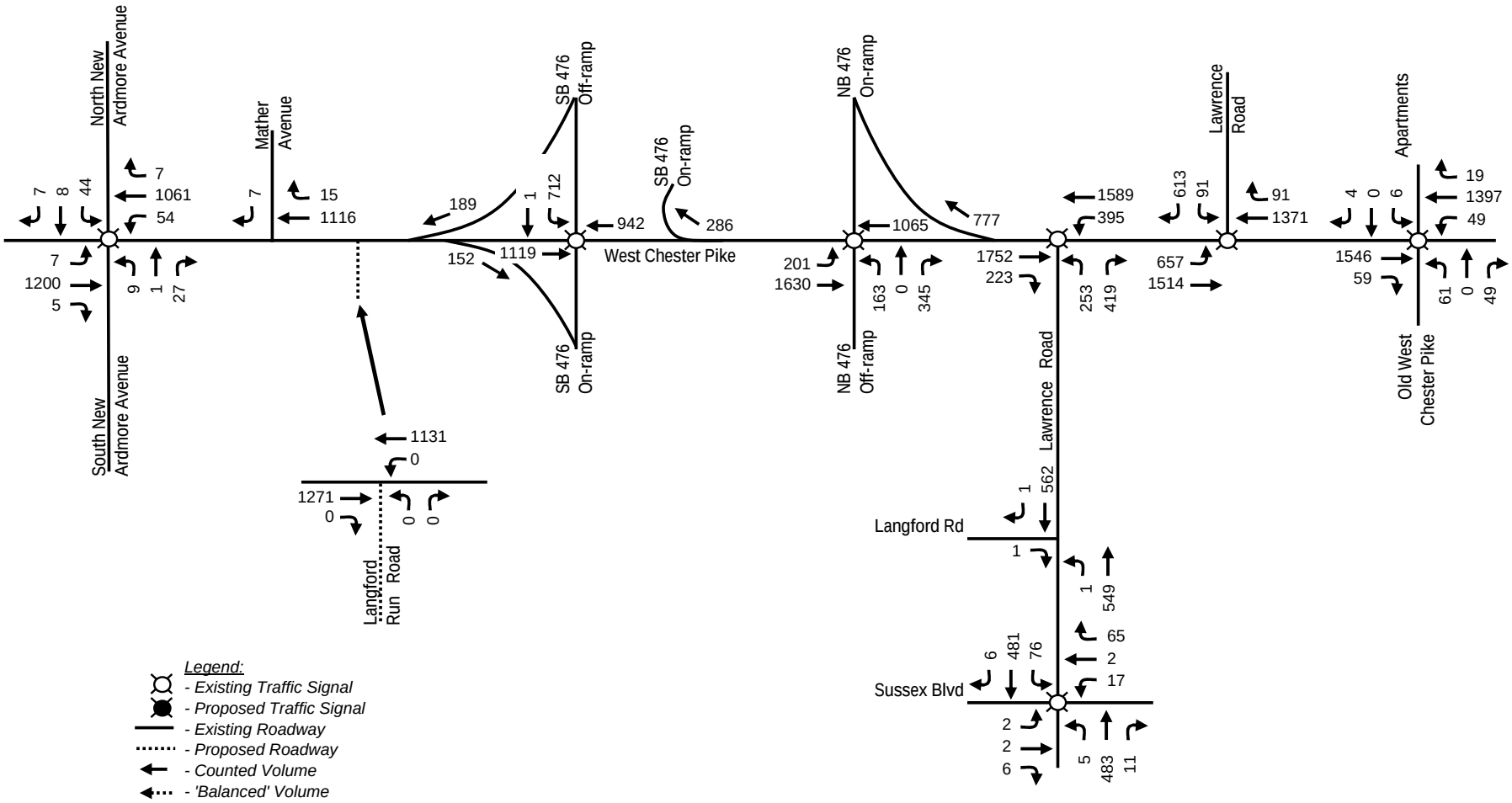
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 11

# 2015 No Build Saturday Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




*Legend:*
- *Existing Traffic Signal*
- *Proposed Traffic Signal*
- *Existing Roadway*
- *Proposed Roadway*
- *Counted Volume*
- *'Balanced' Volume*

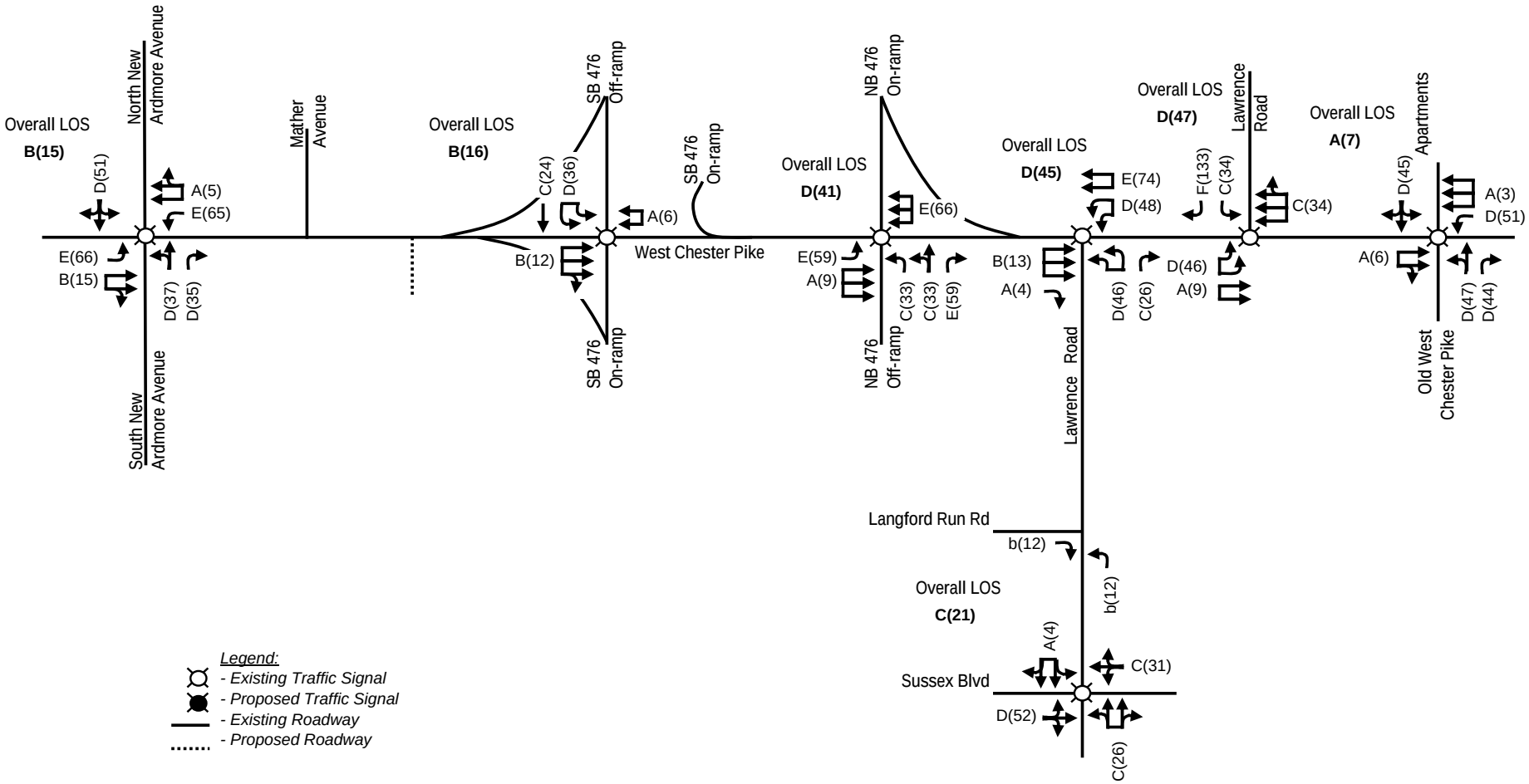
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 12

# 2015 No Build AM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



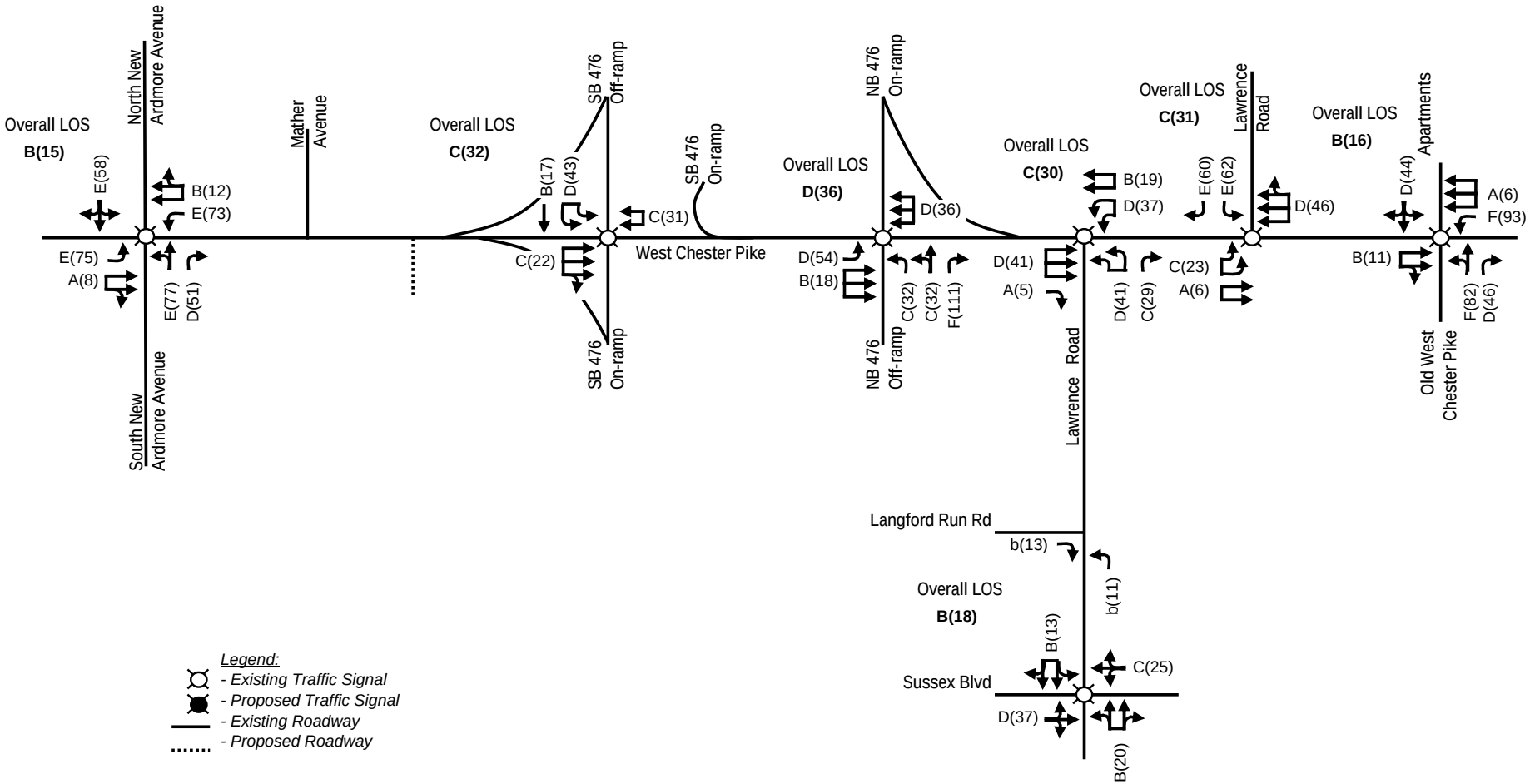
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 13

# 2015 No Build PM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



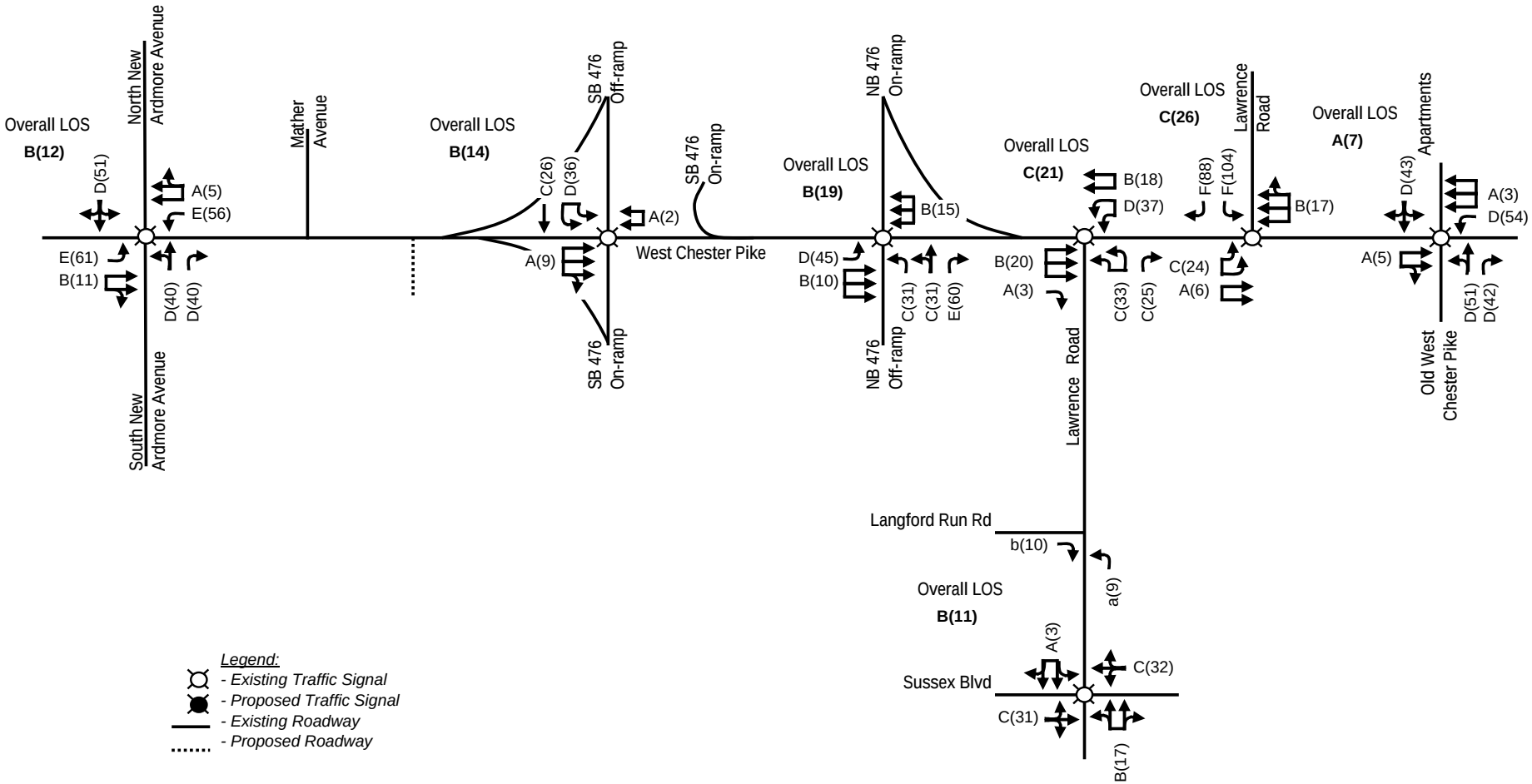
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 14

# 2015 No Build Saturday Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



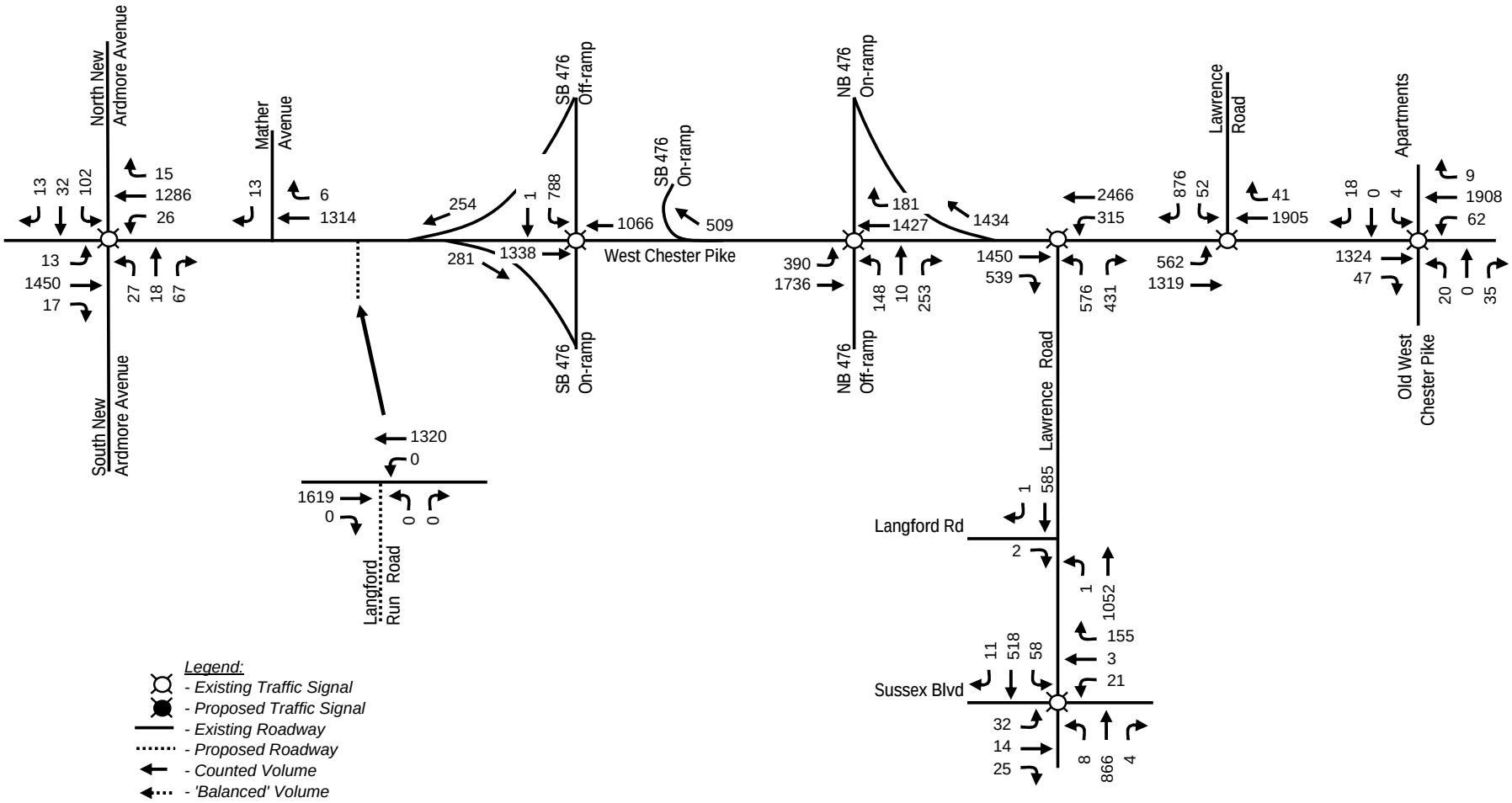
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 15

# 2020 No Build AM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



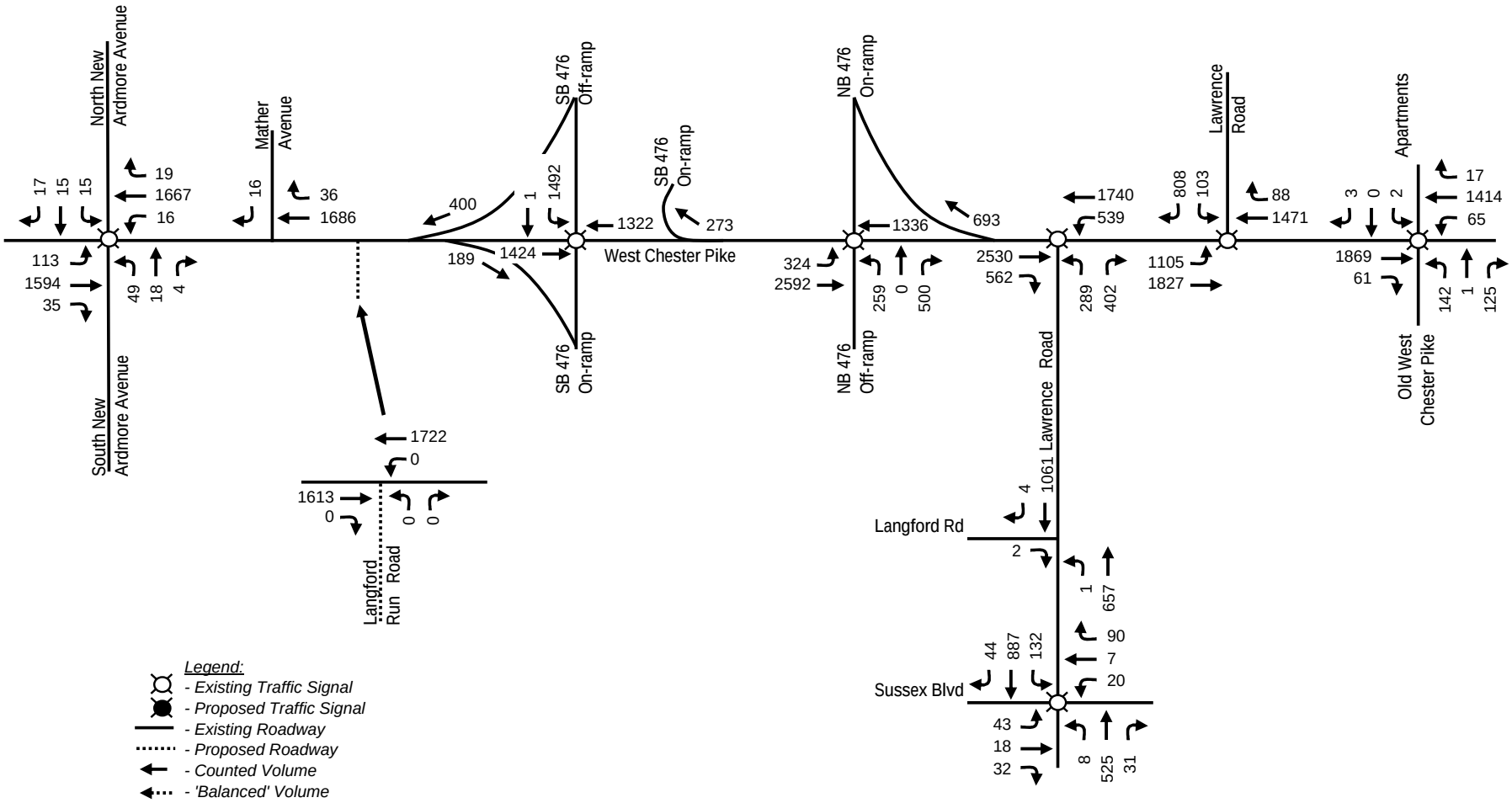
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 16

# 2020 No Build PM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



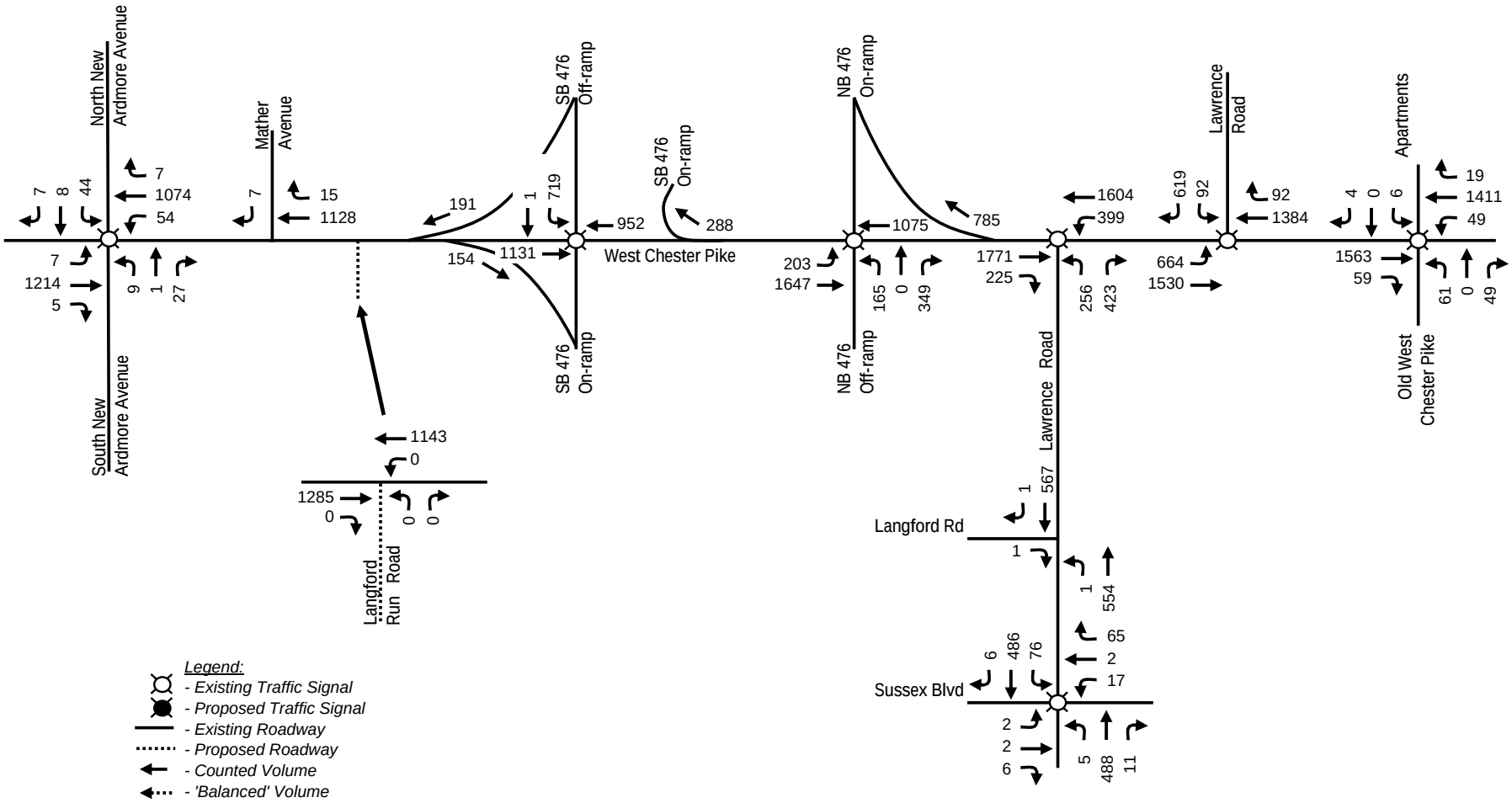
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 17

# 2020 No Build Sat Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



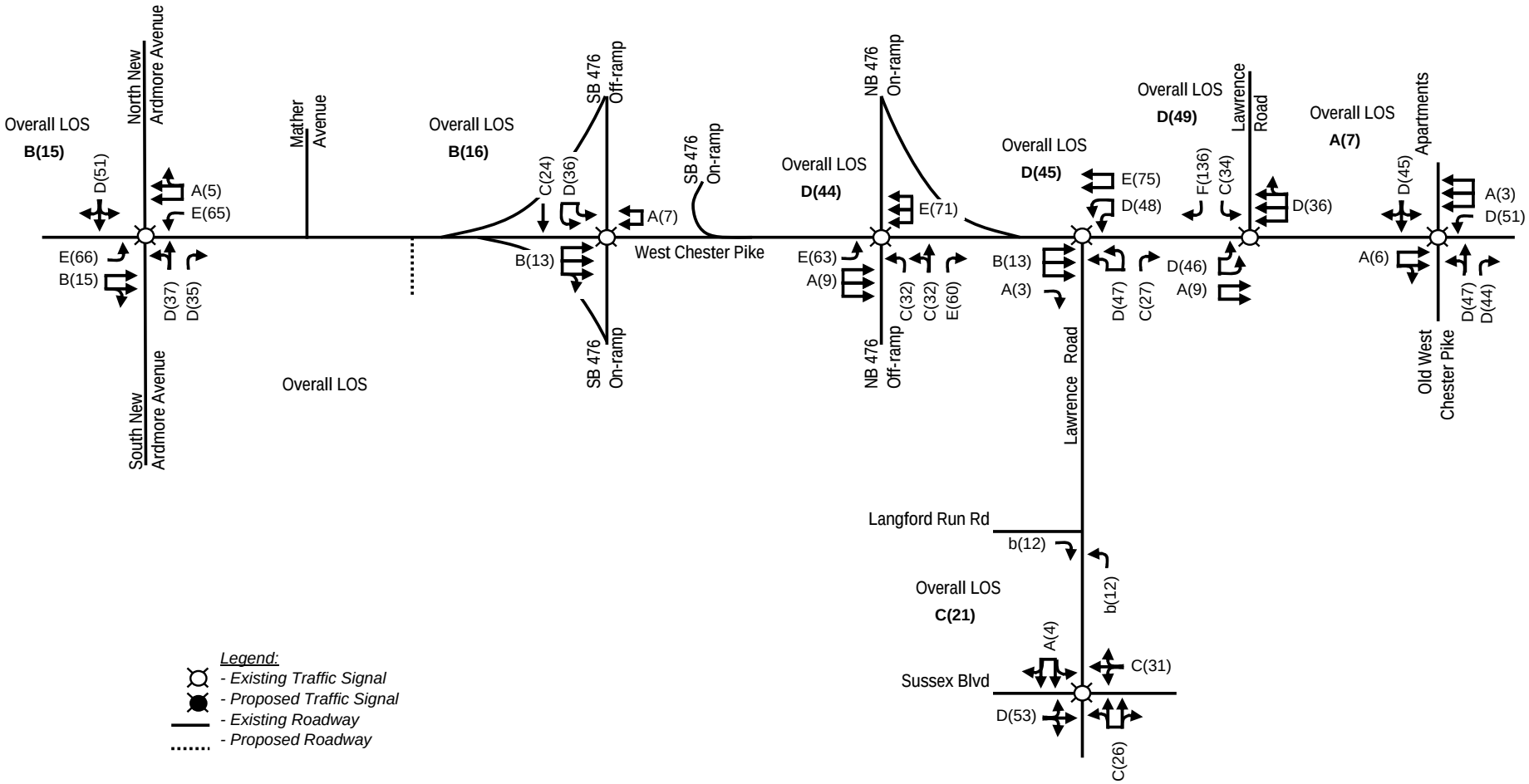
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 18

# 2020 No Build AM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



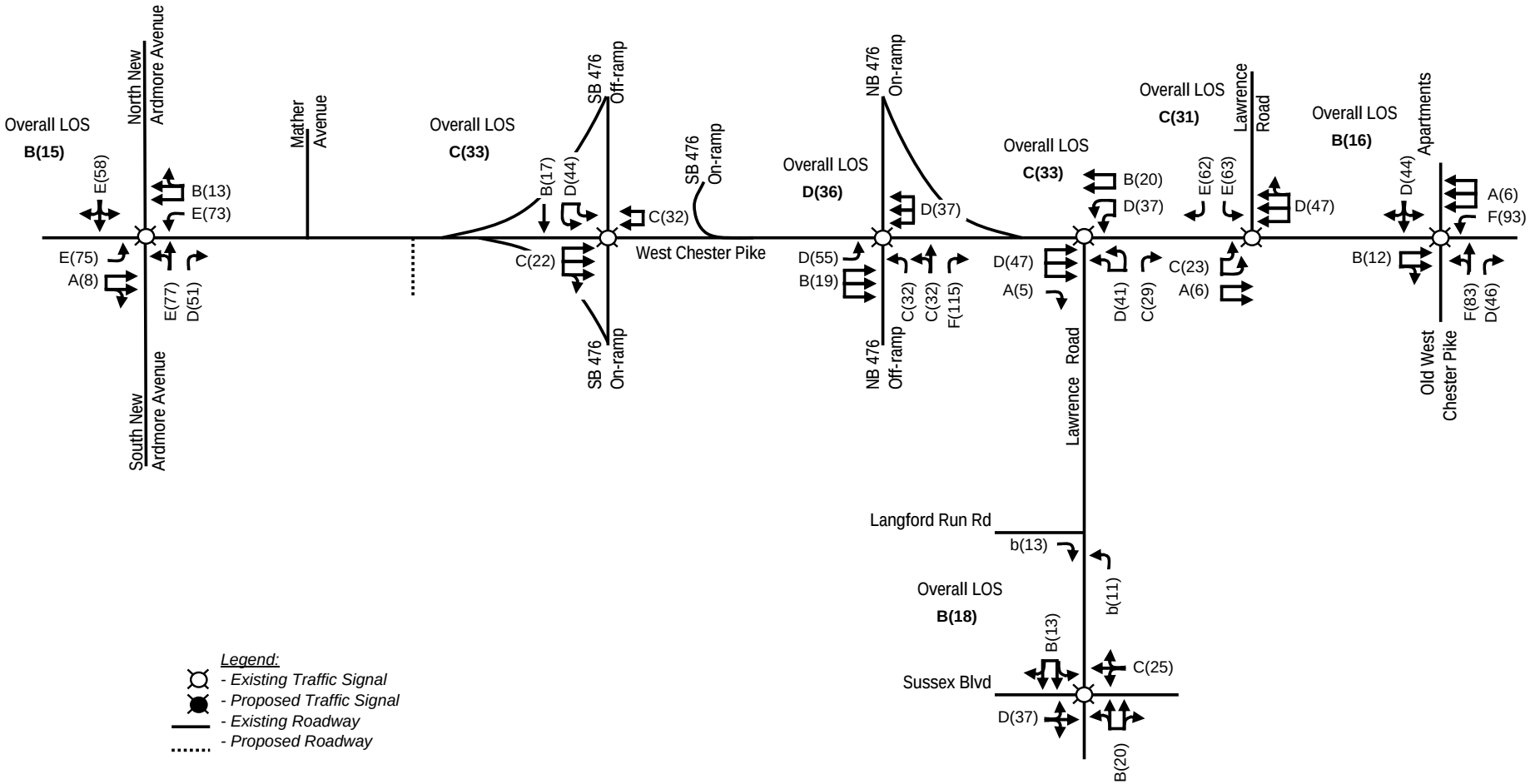
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 19

# 2020 No Build PM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



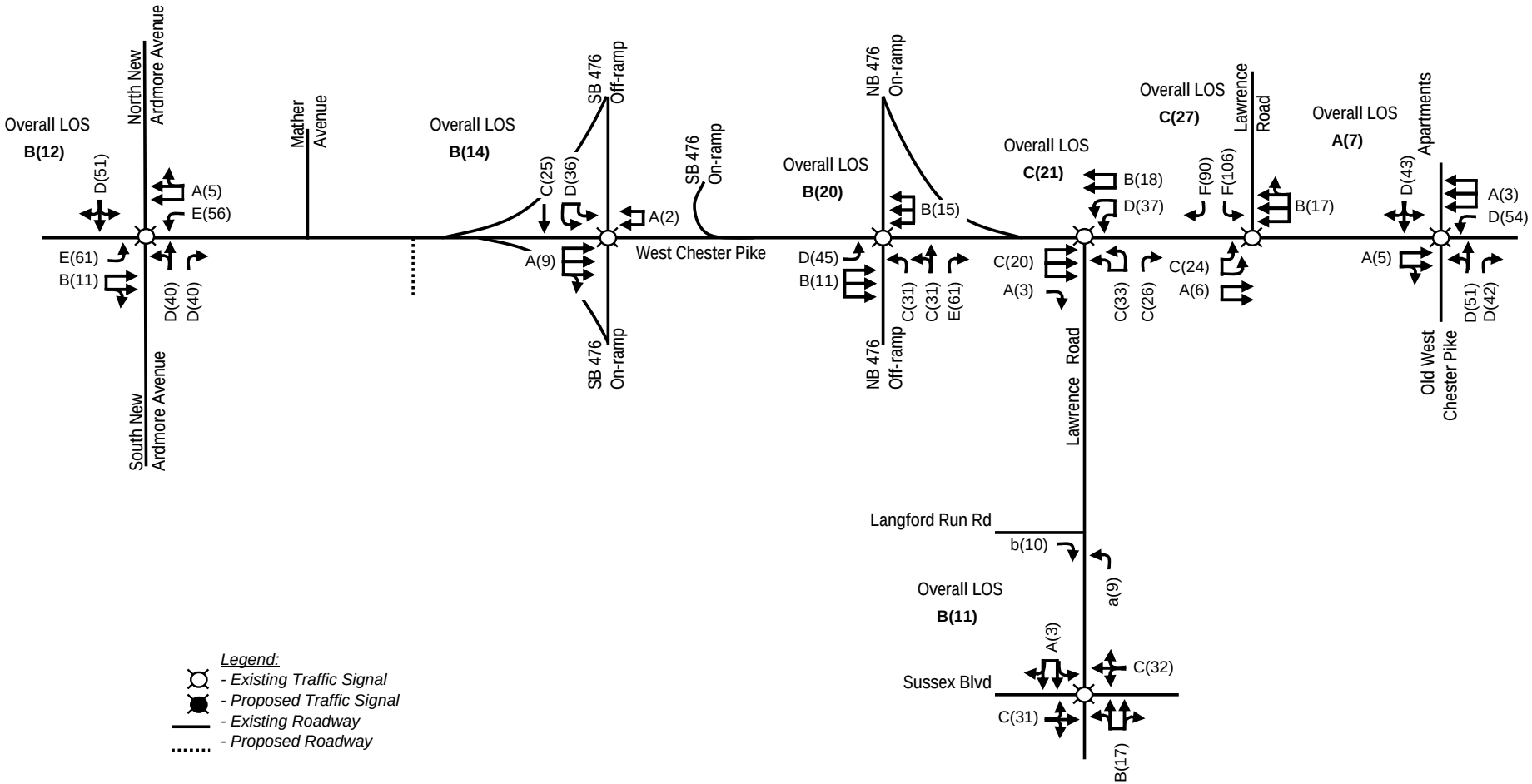
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 20

# 2020 No Build Saturday Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

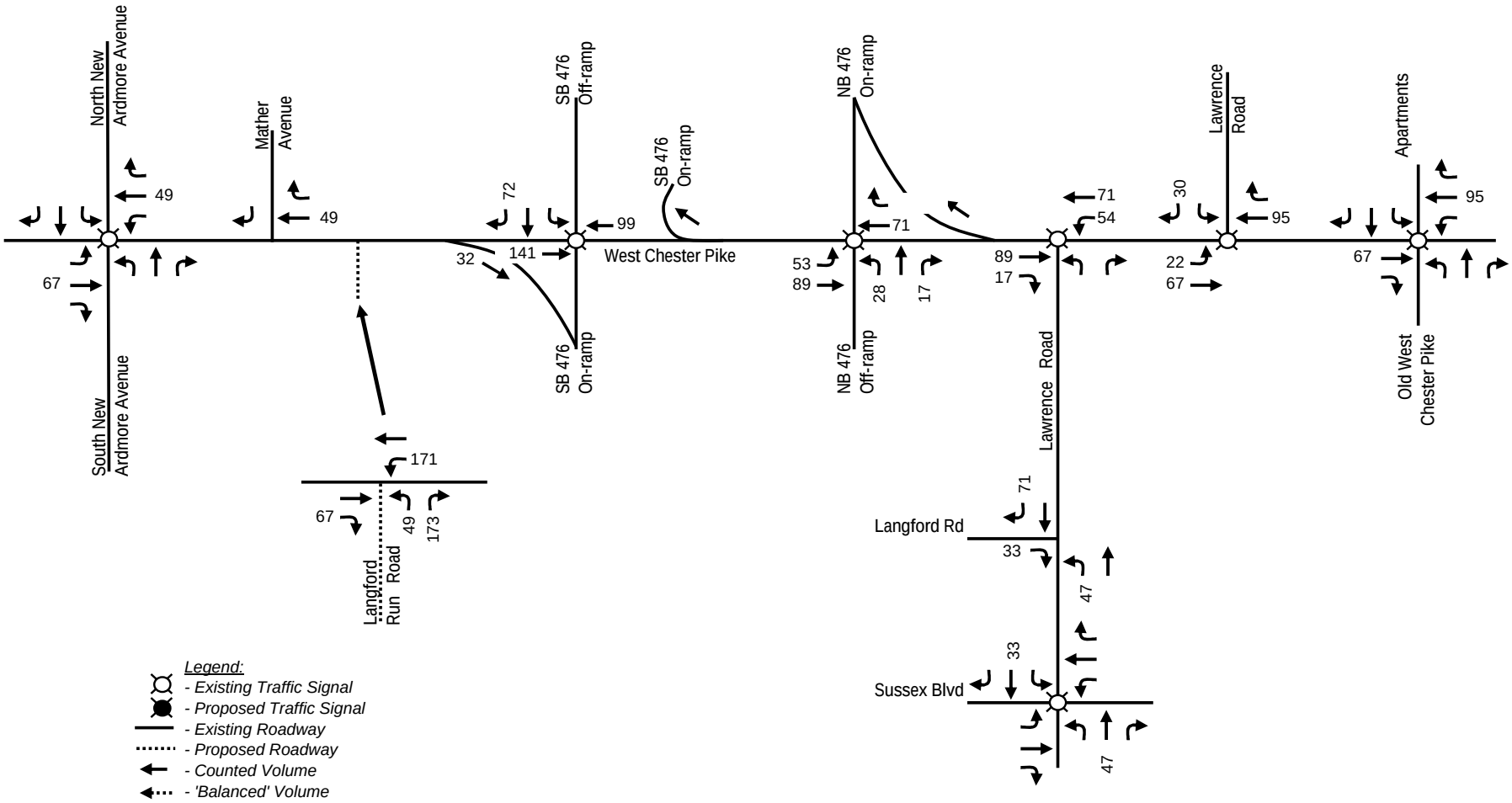
FIGURE 21

# AM Peak Hour Site Generated Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

***Note: All site traffic is new trips.***

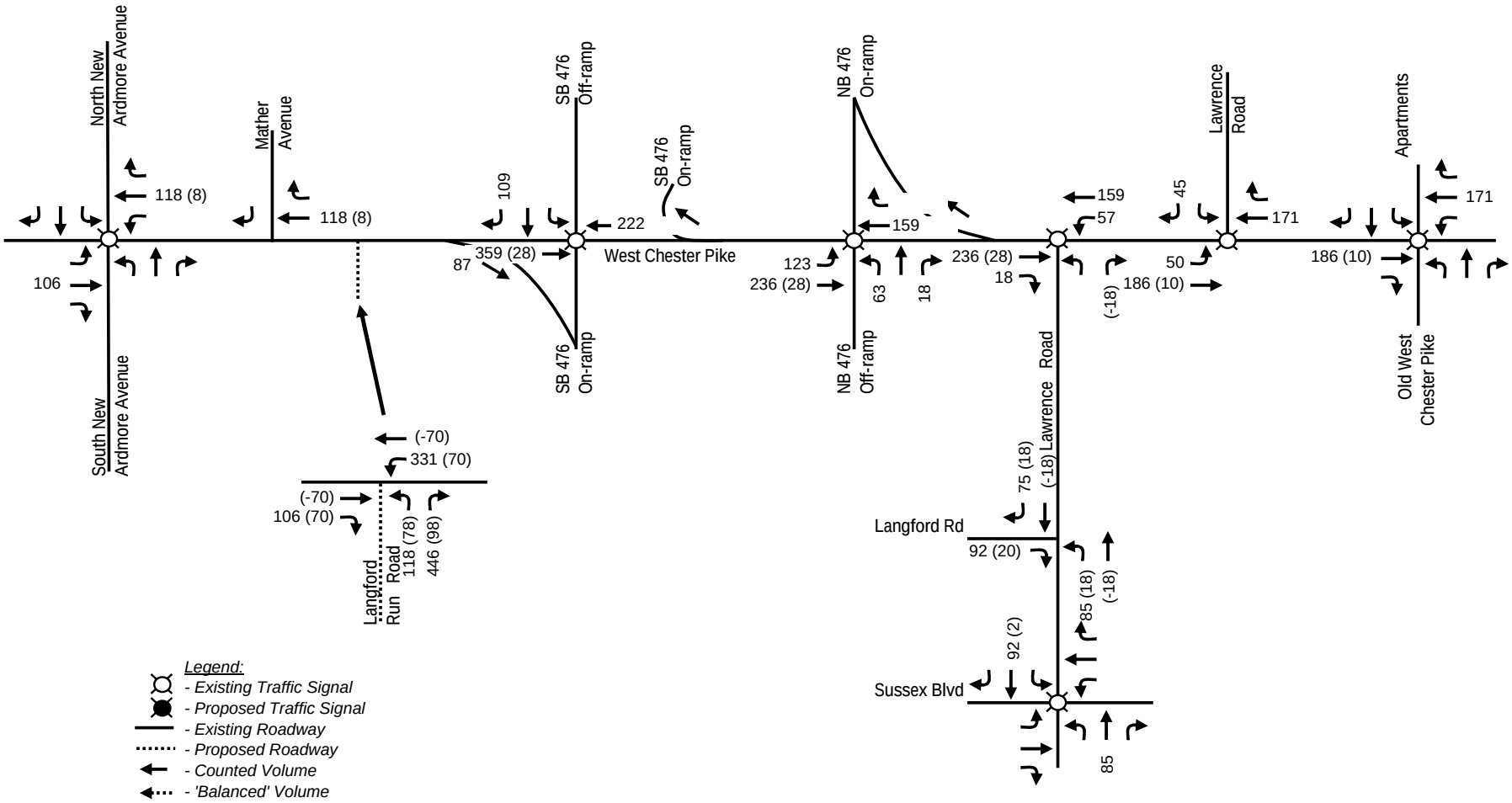


# PM Peak Hour Site Generated Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

***Note: New trips (passby adjustment)***

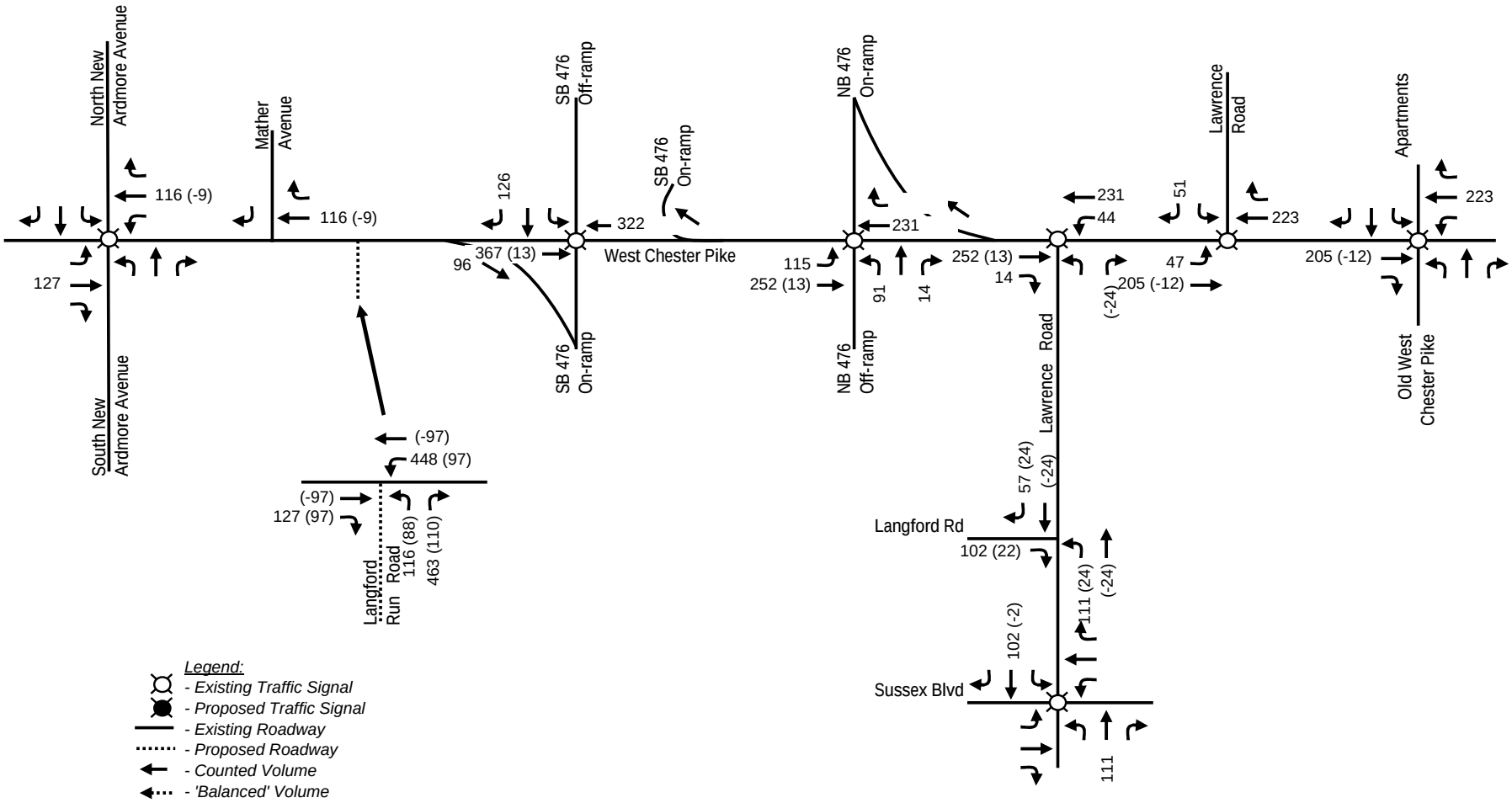


# Saturday Peak Hour Site Generated Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

***Note: New trips (passby adjustment)***



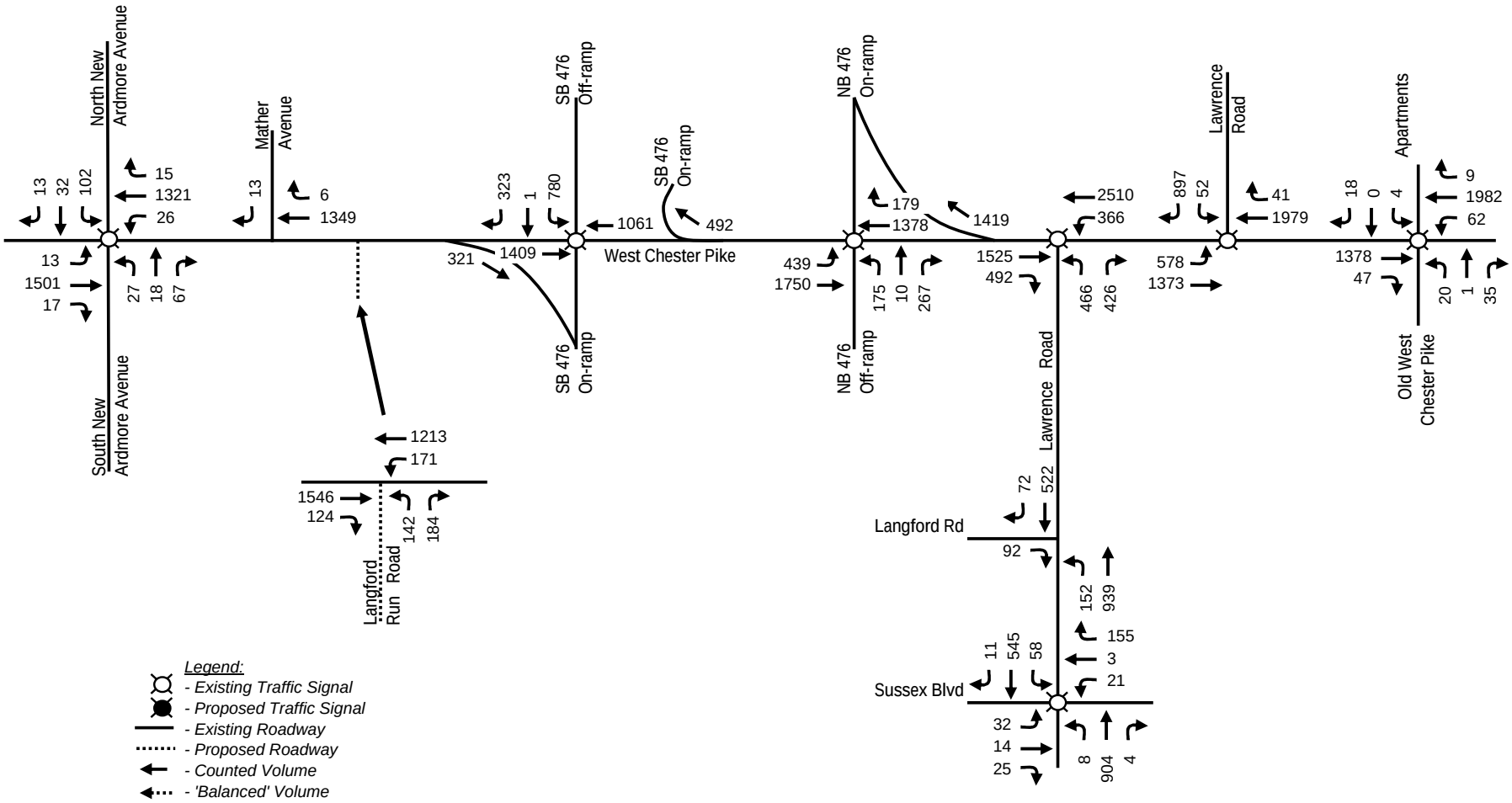
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 24

# 2015 Build AM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



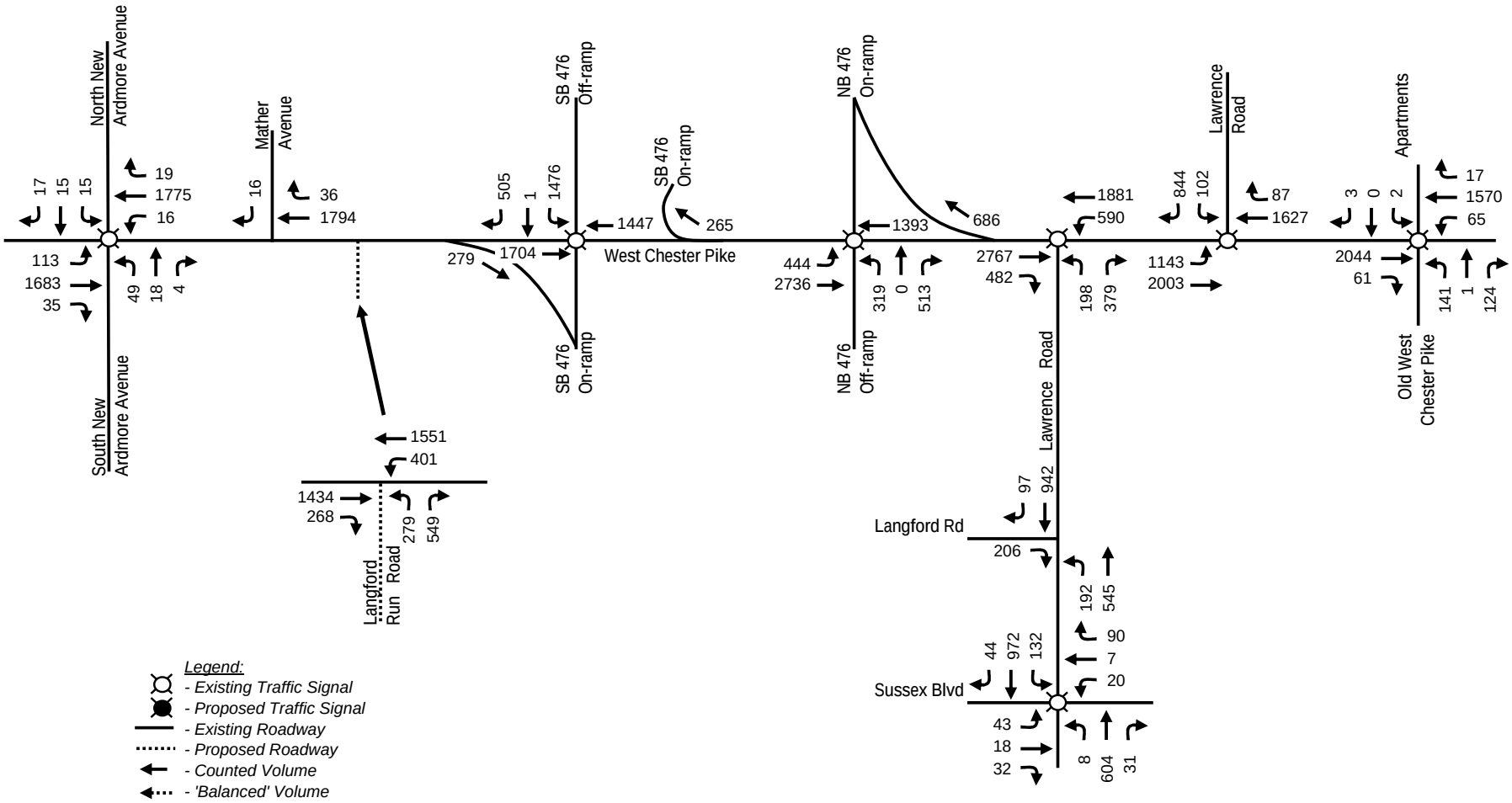
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 25

# 2015 Build PM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



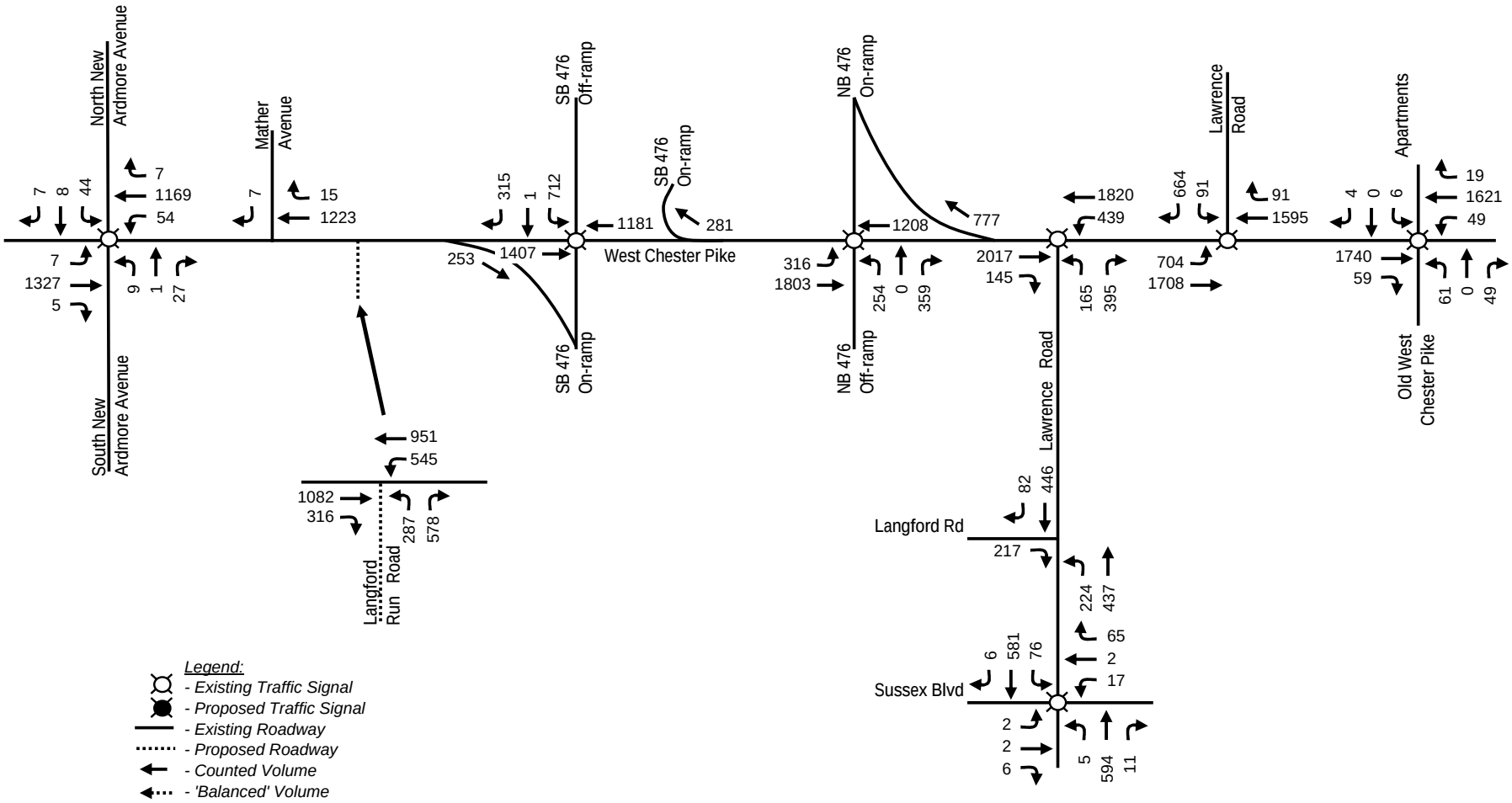
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 26

# 2015 Build Saturday Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




*Legend:*
- *Existing Traffic Signal*
- *Proposed Traffic Signal*
- *Existing Roadway*
- *Proposed Roadway*
- *Counted Volume*
- *'Balanced' Volume*

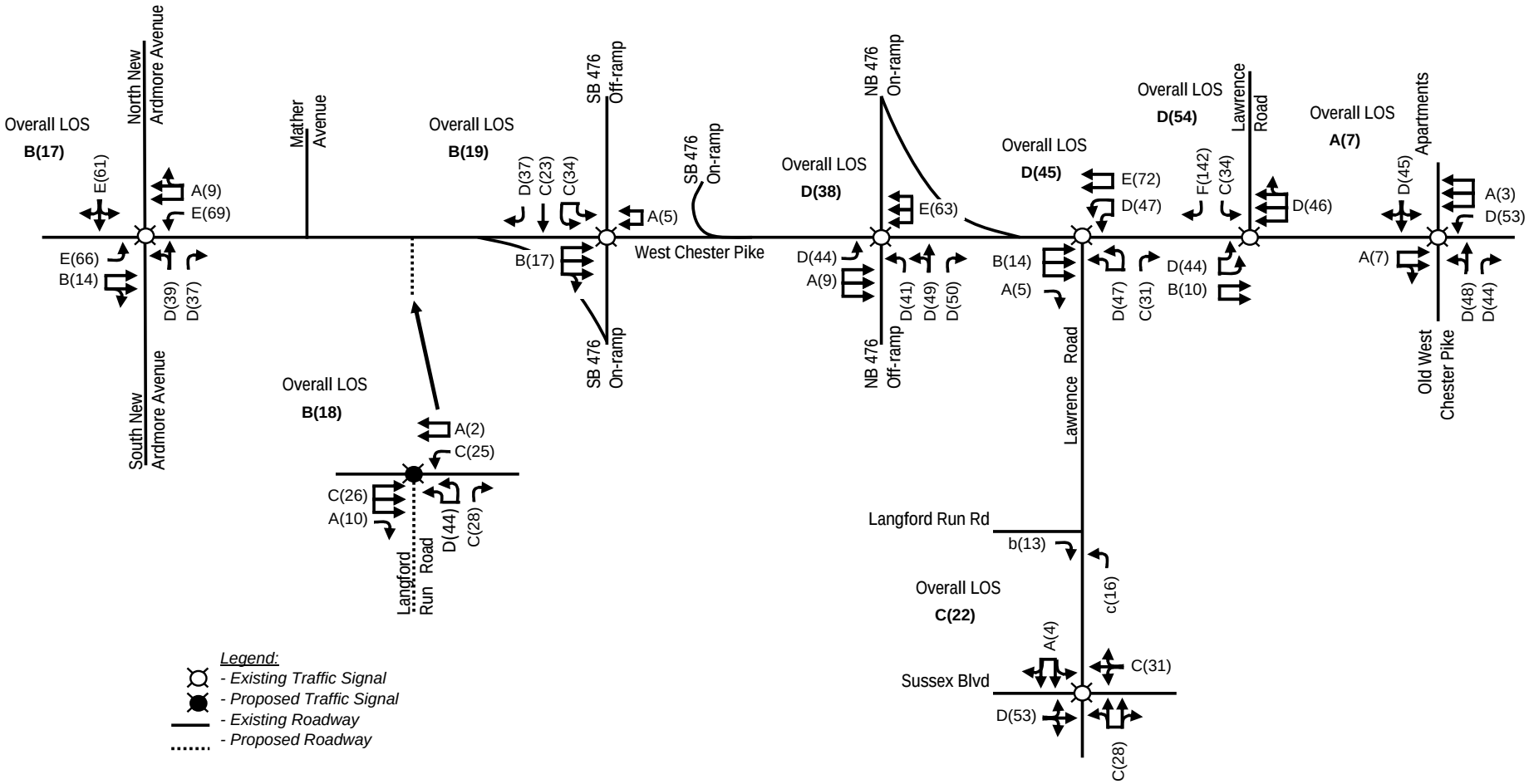
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 27

# 2015 Build AM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



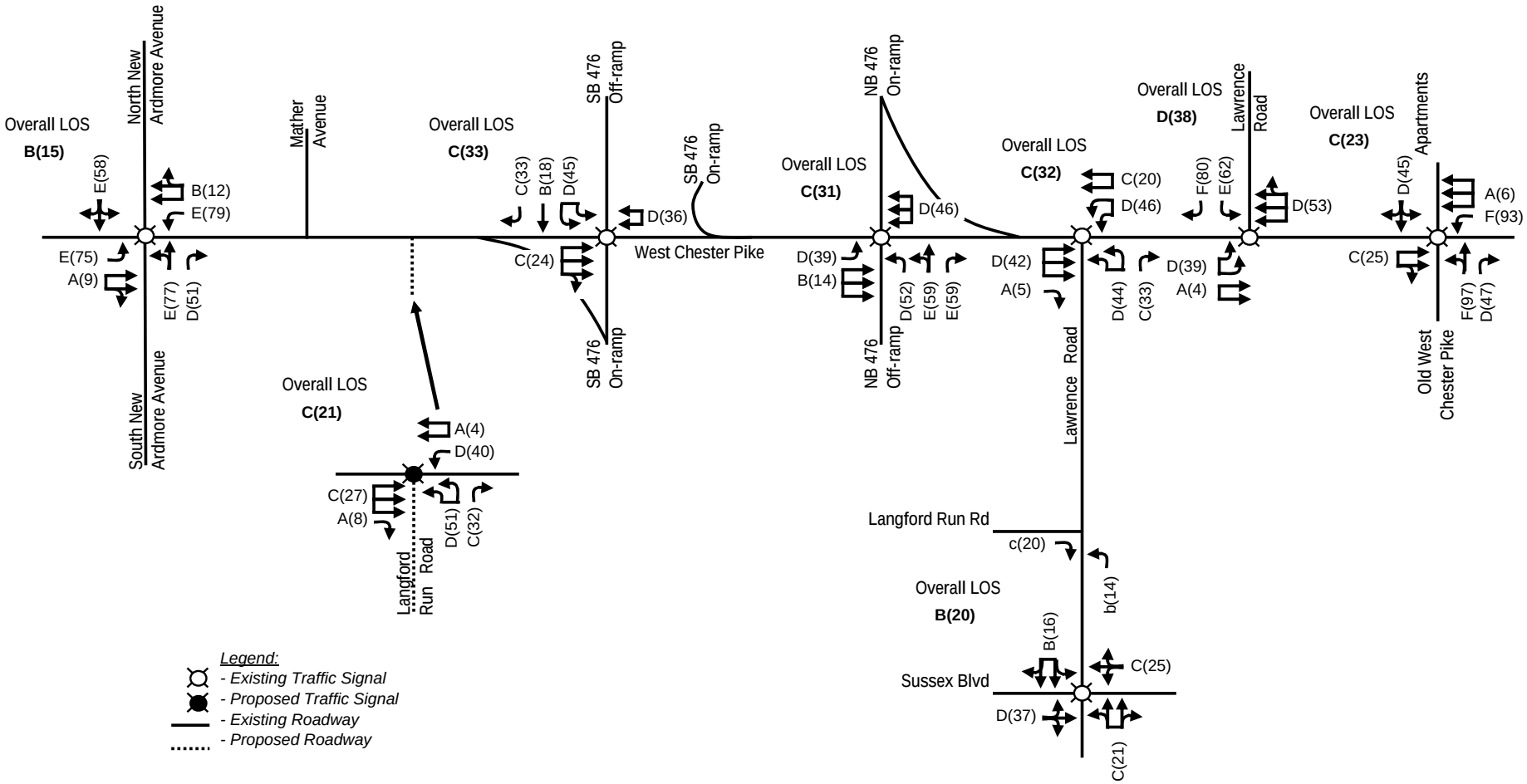
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 28

# 2015 Build PM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



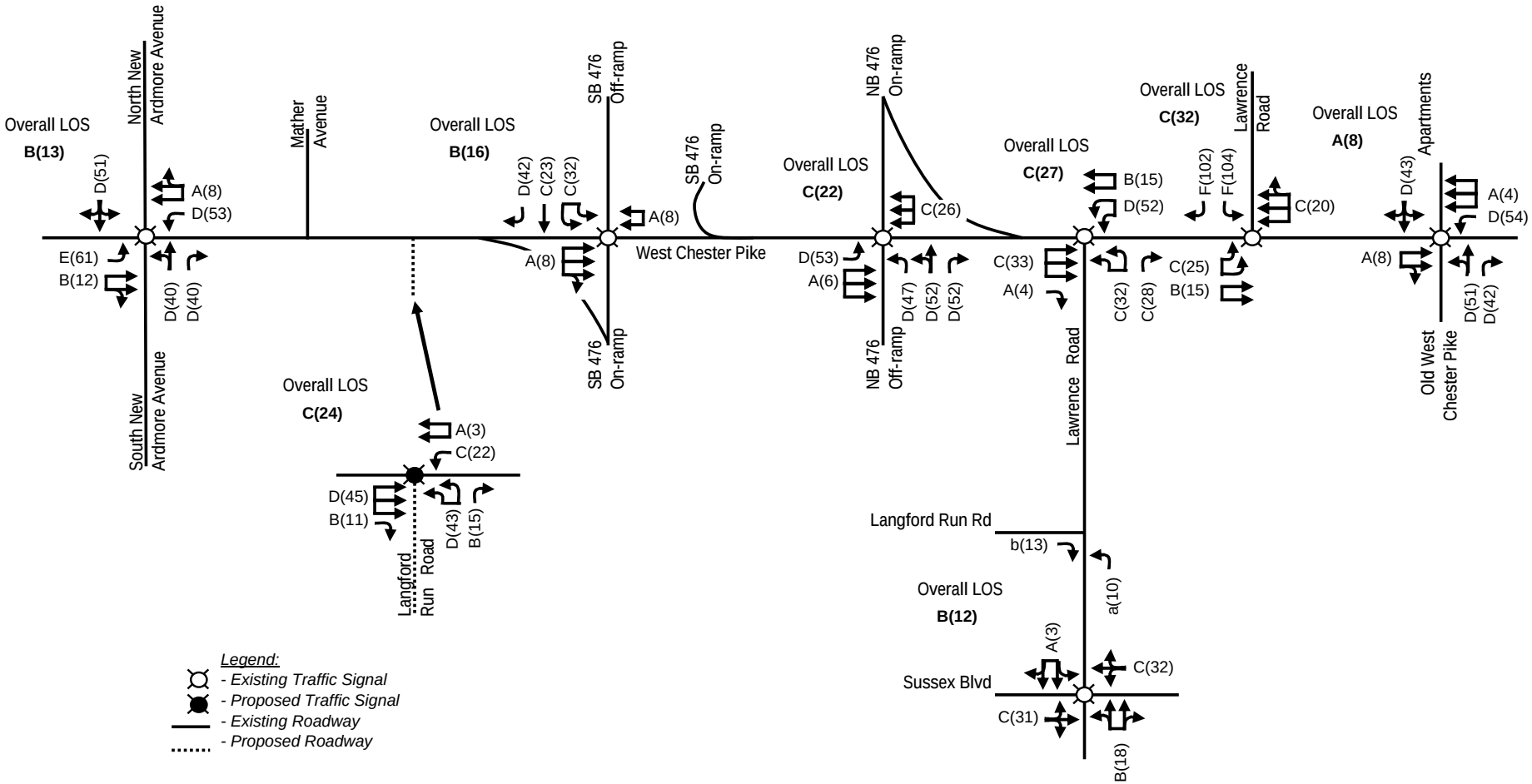
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 29

# 2015 Build Saturday Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



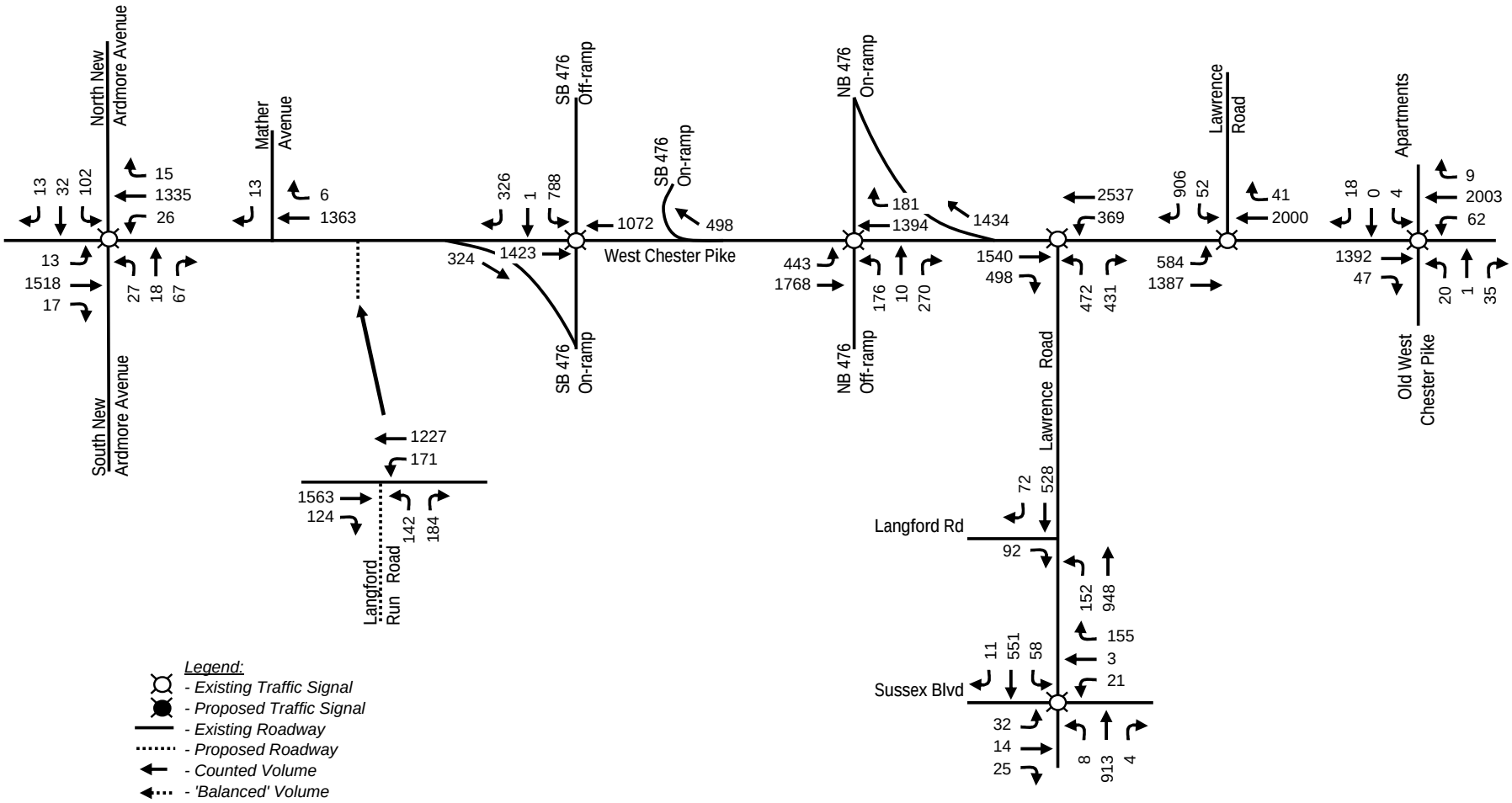
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 30

# 2020 Build AM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




*Legend:*
- *Existing Traffic Signal*
- *Proposed Traffic Signal*
- *Existing Roadway*
- *Proposed Roadway*
- *Counted Volume*
- *'Balanced' Volume*

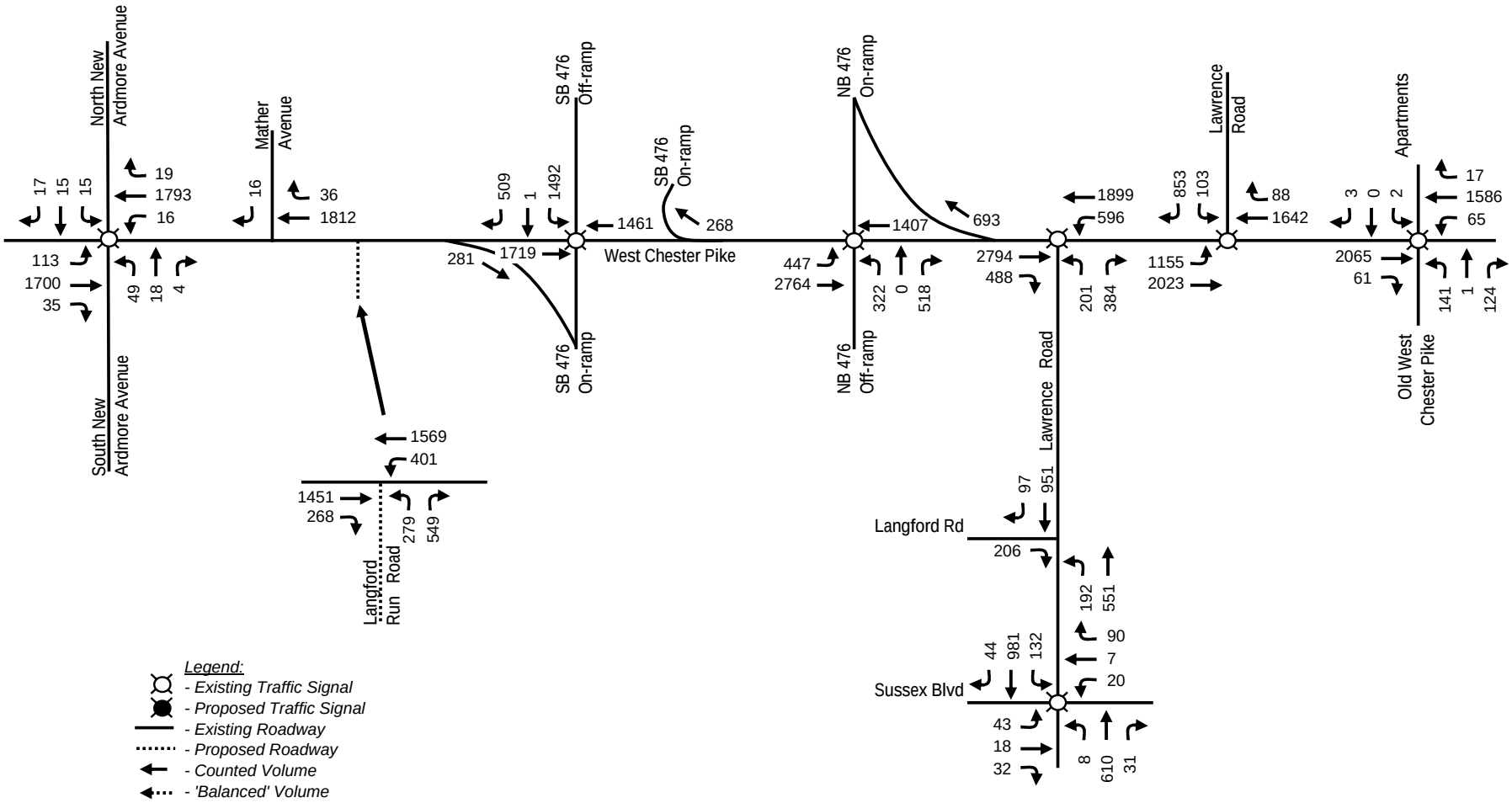
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 31

# 2020 Build PM Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



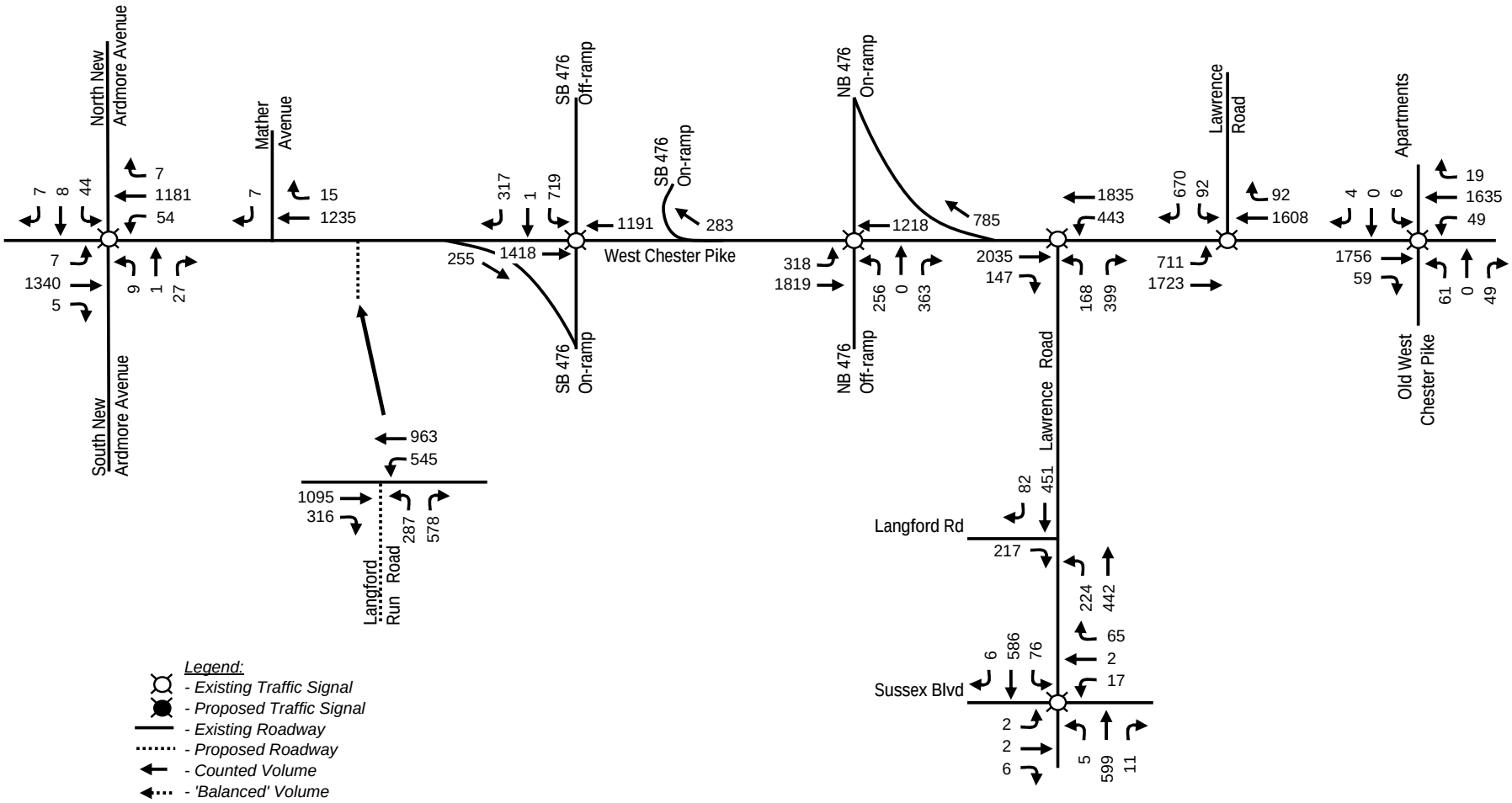
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 32

# 2020 Build Saturday Peak Hour Traffic Volumes

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA




*Legend:*
- *Existing Traffic Signal*
- *Proposed Traffic Signal*
- *Existing Roadway*
- *Proposed Roadway*
- *Counted Volume*
- *'Balanced' Volume*

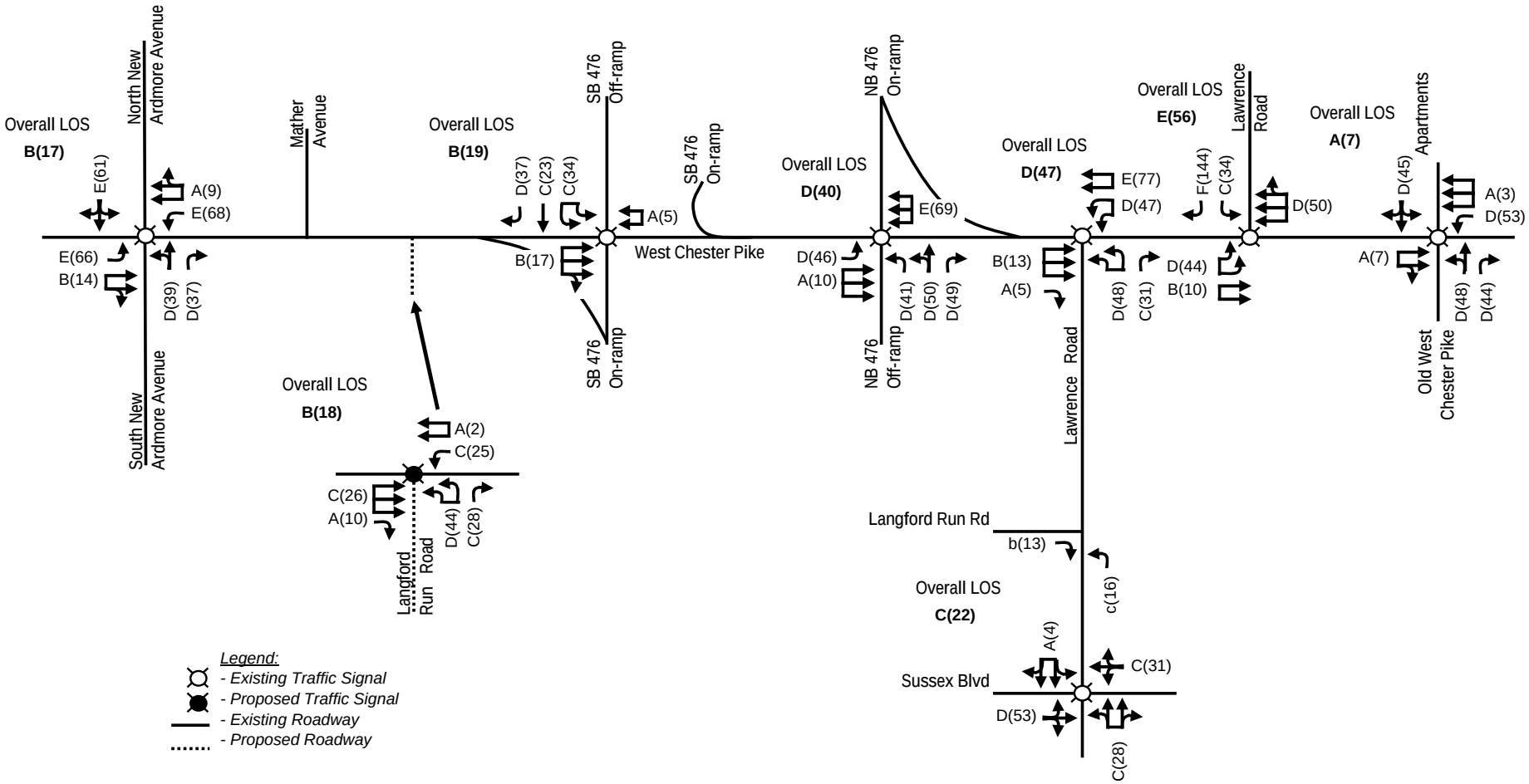
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 33

# 2020 Build AM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



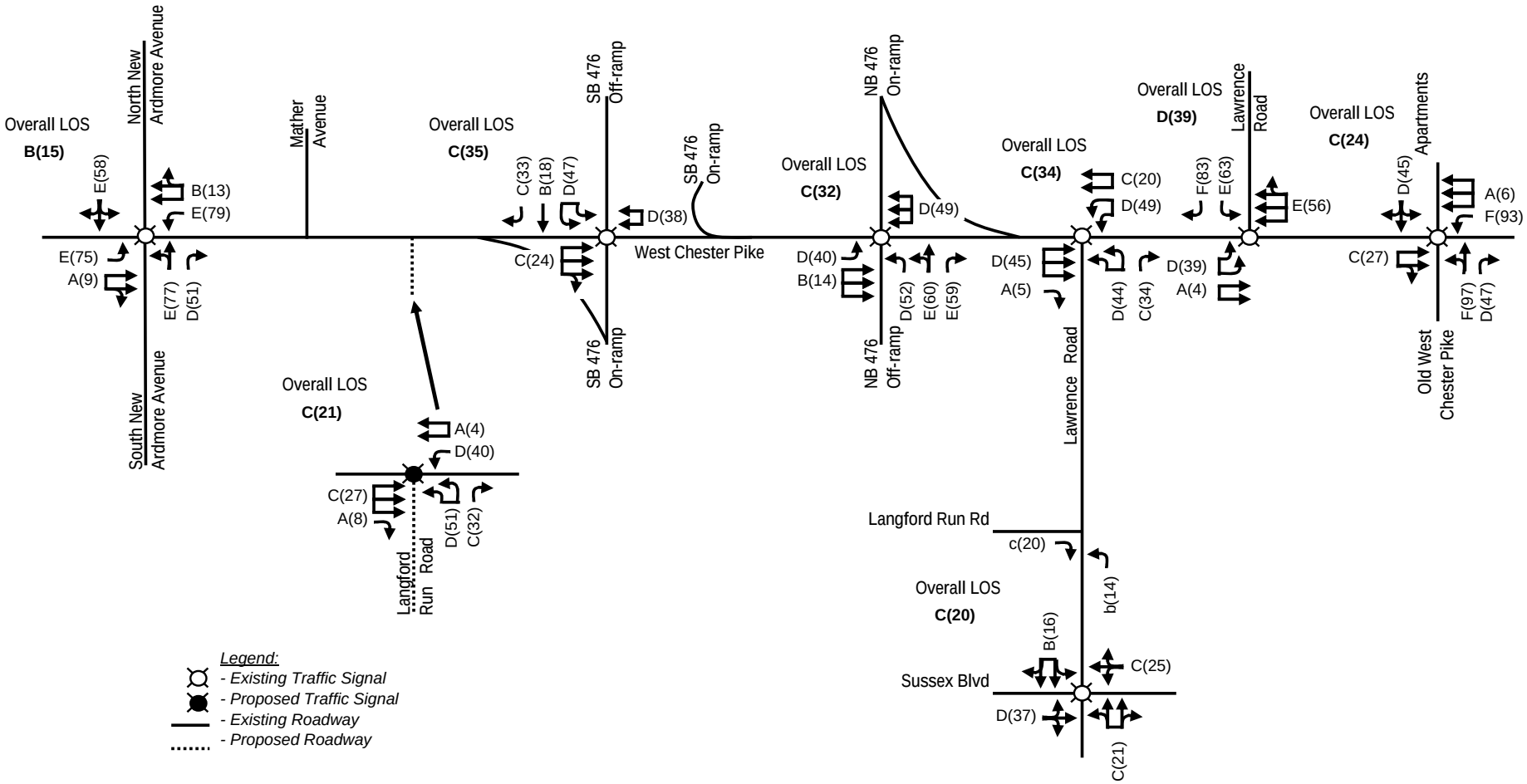
Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

FIGURE 34

# 2020 Build PM Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

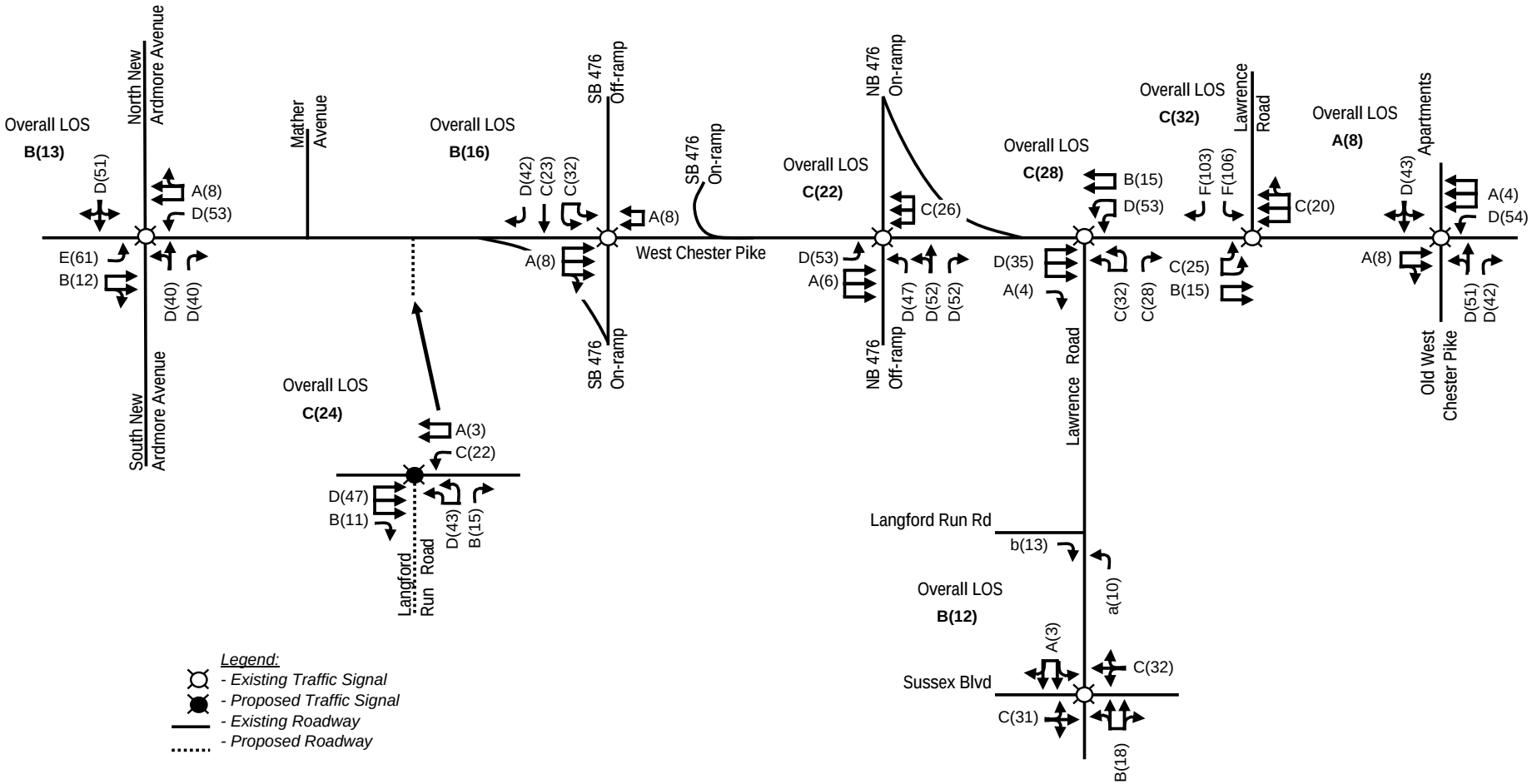
MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



# 2020 Build Saturday Peak Hour Levels of Service

## Traffic Impact Study - Marple Associates

MARPLE TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA



HCA Horner & Canter Associates A PROFESSIONAL CORPORATION
TRANSPORTATION AND TRAFFIC ENGINEERING

DAVID H. HORNER, P.E., PTOE, President
HASSON A. KEENE, Associate

December 11, 2013

Mr. Joseph A. Mina, P.E.
Cairone and Kaupp, Inc.
1118 E. Columbia Ave.
Philadelphia, PA 19125

**Re: Trip Generation Assessment**
**Crozer Ambulatory Care Center at Broomall**
Marple Township, Delaware County, Pennsylvania
HCA File No. 13-024

Dear Mr. Mina:

Horner & Canter Associates has completed a trip generation assessment of the proposed Crozer Ambulatory Care Center at Broomall located at 30 Lawrence Road in Marple Township, Delaware County, Pennsylvania. It is our understanding that the existing 56,699 square feet building on the site, which was formerly a grocery store, is proposed to be expanded by 1,900 square feet and converted to a medical office building. The purpose of this trip generation assessment is to compare the trip generation of the proposed medical office with that of the previous grocery store use to determine whether the proposed medical office has a positive or negative effect on traffic conditions in proximity to the site.

The determination of the amount of traffic that a development will generate can best be made by comparison with similar sites. The Institute of Transportation Engineers (ITE) has compiled hundreds of trip generation studies and published the results in Trip Generation, 9th Edition[1]. This publication is the national standard used for estimating traffic generation for a variety of land uses, including those uses being evaluated herein.

For the previous supermarket use, ITE's Land Use Code 850 – Supermarket was selected as the most appropriate. For the proposed medical office building, ITE's Land Use Code 720 – Medical-Dental Office Building was selected as the most appropriate. The ITE data was then applied to the respective square footages yielding the daily and peak hourly traffic volumes presented in Table 1.

[1] *Trip Generation, 9th Edition*; Institute of Transportation Engineers, Washington, D.C.: 2012

*Pennsylvania Office:* 4950 York Road – Suite 2C • P.O. Box 301 • Holicong, PA 18928-0301 • (267) 544-0805 • Fax (267) 544-0806
*New Jersey Office:* 105 Atsion Road – Suite F • Medford, NJ 08055 • (609) 654-4104 • Fax (609) 654-9649
www.horner-canter.com

MRPL 0126 REC'D 12/13/13

**Table 1**
**Trip Generation Comparison**

| | Daily | Weekday AM Peak | Weekday PM Peak | Saturday Peak |
|---|---|---|---|---|
| Grocery Store (56,699 s.f.) | 5190 | 193 | 512 | 653 |
| Medical Office (58,599 s.f.) | 2180 | 140 | 180 | 213 |
| | | | | |
| **Trip Reduction** | **-3010** | **-53** | **-332** | **-440** |

As shown in Table 1, the proposed medical office building, despite being slightly larger in size, will generate substantially less traffic than the previous grocery store use, both on a daily basis and during the critical peak periods on a weekday and Saturday. Based on this comparison, it is our conclusion that the conversion of the site from a grocery store use to a medical office use will have a positive effect with regard to traffic impact on the on the surrounding roadway network.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

David H. Horner, P.E., PTOE

DHH/mac

# APPENDIX G

***INTERACTION DATA***

# Interaction Calculations

Average Weekday (ITE)

## Land Use A — Residential

| ITE LU Code | 230 |
|---|---|
| Size | 318 dwelling units |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 880 | 303 | 577 |
| Exit | 880 | 334 | 546 |
| Total | 1760 | 637 | 1123 |
| % | 100% | 36% | 64% |

| Exit | | Enter | |
|---|---|---|---|
| 0% | 0 | 3% | 26 |
| 0 | | 13 | |
| 0% | 0 | 2% | 13 |
| Enter | | Exit | |

| Exit | | Enter | |
|---|---|---|---|
| 38% | 334 | 33% | 290 |
| 334 | | 290 | |
| 9% | 1073 | 11% | 1311 |
| Enter | | Exit | |

## Land Use B — Office

| ITE LU Code | 710 |
|---|---|
| Size | 100 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 656 | 98 | 558 |
| Exit | 656 | 157 | 499 |
| Total | 1312 | 255 | 1057 |
| % | 100% | 19% | 81% |

| Enter | | | | Exit |
|---|---|---|---|---|
| 15% | 98 | 98 | 3% | 358 |
| 22% | 144 | 144 | 4% | 477 |
| Exit | | | | Enter |

## Land Use C — Retail

| ITE LU Code | 820 |
|---|---|
| Size | 690 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 11917 | 478 | 11439 |
| Exit | 11917 | 388 | 11529 |
| Total | 23834 | 866 | 22968 |
| % | 100% | 4% | 96% |

| Net External Trips for Multi-Use Development | | | | | |
|---|---|---|---|---|---|
| | LU A | LU B | LU C | Total | |
| Enter | 577 | 558 | 11439 | 12574 | |
| Exit | 546 | 499 | 11529 | 12574 | Internal |
| Total | 1123 | 1057 | 22968 | 25148 | Interaction |
| Single-Use | 1760 | 1312 | 23834 | 26906 | 7% |

# Interaction Calculations

AM Peak Hour (FDOT)

## Land Use A — Residential

| ITE LU Code | 230 |
|---|---|
| Size | 318 dwelling units |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 22 | 19 | 3 |
| Exit | 108 | 19 | 89 |
| Total | 130 | 38 | 92 |
| % | 100% | 29% | 71% |

## Land Use B — Office

| ITE LU Code | 710 |
|---|---|
| Size | 100 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 168 | 14 | 154 |
| Exit | 23 | 13 | 10 |
| Total | 191 | 27 | 164 |
| % | 100% | 14% | 86% |

## Land Use C — Retail

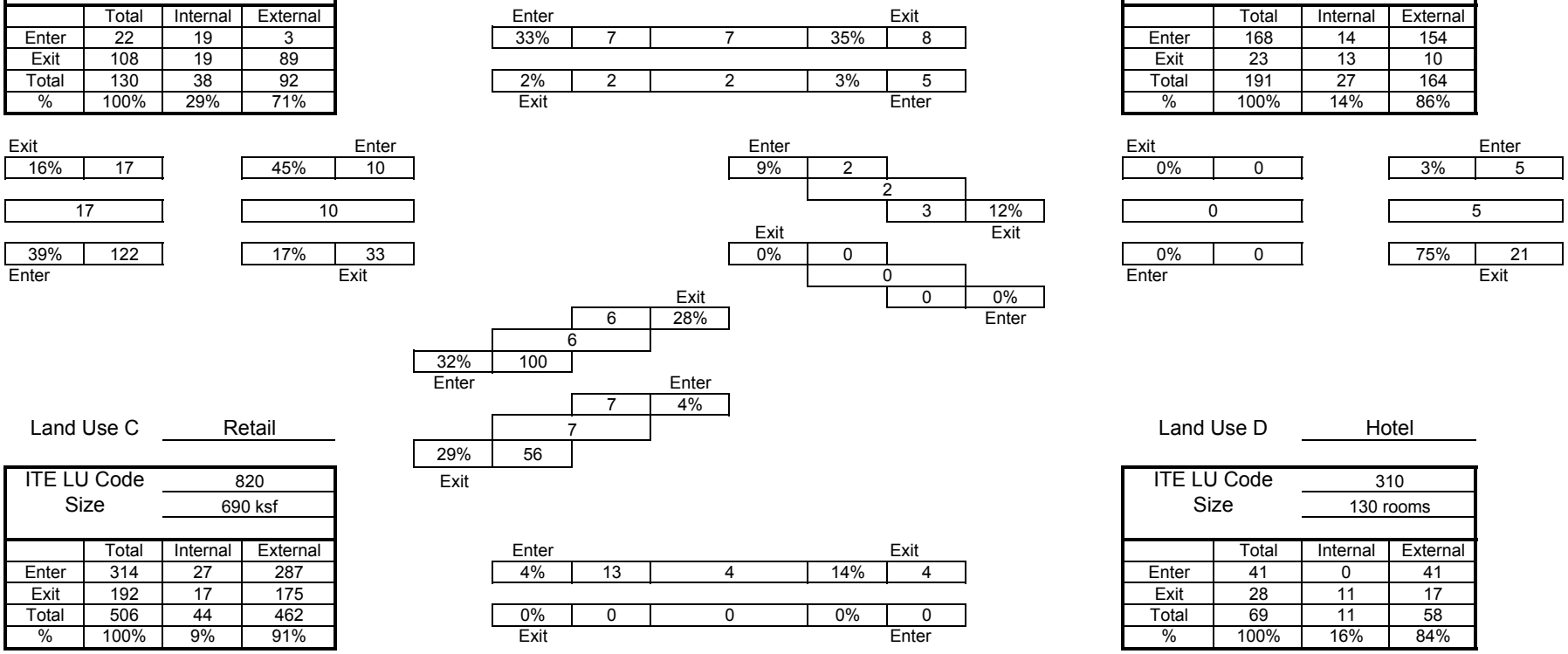
| ITE LU Code | 820 |
|---|---|
| Size | 690 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 314 | 27 | 287 |
| Exit | 192 | 17 | 175 |
| Total | 506 | 44 | 462 |
| % | 100% | 9% | 91% |

## Land Use D — Hotel

| ITE LU Code | 310 |
|---|---|
| Size | 130 rooms |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 41 | 0 | 41 |
| Exit | 28 | 11 | 17 |
| Total | 69 | 11 | 58 |
| % | 100% | 16% | 84% |




| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| | LU A | LU B | LU C | LU D | Total | |
| Enter | 3 | 154 | 287 | 41 | 485 | |
| Exit | 89 | 10 | 175 | 17 | 291 | Internal |
| Total | 92 | 164 | 462 | 58 | 776 | Interaction |
| Single-Use | 130 | 191 | 506 | 69 | 896 | 13% |

# Interaction Calculations

PM Peak Hour (ITE + FDOT)

## Land Use A — Residential

| ITE LU Code | 230 |
|---|---|
| Size | 318 dwelling units |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 104 | 35 | 69 |
| Exit | 51 | 29 | 22 |
| Total | 155 | 64 | 91 |
| % | 100% | 41% | 59% |

## Land Use B — Office

| ITE LU Code | 710 |
|---|---|
| Size | 100 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 29 | 9 | 20 |
| Exit | 161 | 23 | 138 |
| Total | 190 | 32 | 158 |
| % | 100% | 17% | 83% |

## Land Use C — Retail

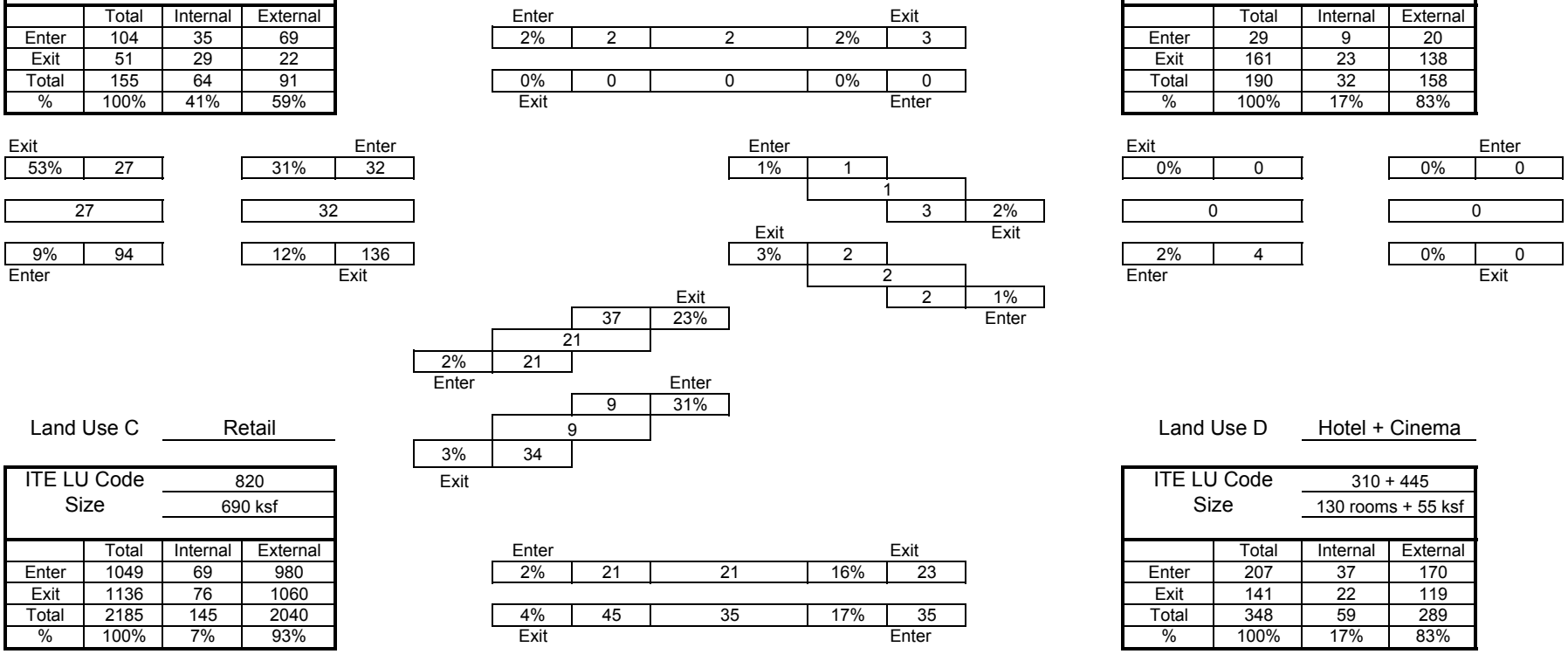
| ITE LU Code | 820 |
|---|---|
| Size | 690 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 1049 | 69 | 980 |
| Exit | 1136 | 76 | 1060 |
| Total | 2185 | 145 | 2040 |
| % | 100% | 7% | 93% |

## Land Use D — Hotel + Cinema

| ITE LU Code | 310 + 445 |
|---|---|
| Size | 130 rooms + 55 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 207 | 37 | 170 |
| Exit | 141 | 22 | 119 |
| Total | 348 | 59 | 289 |
| % | 100% | 17% | 83% |




| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| | LU A | LU B | LU C | LU D | Total | |
| Enter | 69 | 20 | 980 | 170 | 1239 | |
| Exit | 22 | 138 | 1060 | 119 | 1339 | Internal |
| Total | 91 | 158 | 2040 | 289 | 2578 | Interaction |
| Single-Use | 155 | 190 | 2185 | 348 | 2878 | 10% |

# Interaction Calculations

SAT Midday (ITE)

Land Use A: Residential

| ITE LU Code | 230 |
|---|---|
| Size | 318 dwelling units |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 73 | 27 | 46 |
| Exit | 62 | 21 | 41 |
| Total | 135 | 48 | 87 |
| % | 100% | 36% | 64% |

| Exit | | Enter | |
|---|---|---|---|
| 0% | 0 | 0% | 0 |
| 0 | | 0 | |
| 0% | 0 | 0% | 0 |
| Enter | | Exit | |

| Exit | | Enter | |
|---|---|---|---|
| 34% | 21 | 37% | 27 |
| 21 | | 27 | |
| 5% | 80 | 7% | 103 |
| Enter | | Exit | |

Land Use B: Office

| ITE LU Code | 710 |
|---|---|
| Size | 100 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 23 | 9 | 14 |
| Exit | 20 | 4 | 16 |
| Total | 43 | 13 | 30 |
| % | 100% | 30% | 70% |

| Enter | | | | Exit |
|---|---|---|---|---|
| 38% | 9 | 9 | 3% | 44 |
| 20% | 4 | 4 | 4% | 64 |
| Exit | | | | Enter |

Land Use C: Retail

| ITE LU Code | 820 |
|---|---|
| Size | 690 ksf |

| | Total | Internal | External |
|---|---|---|---|
| Enter | 1595 | 25 | 1570 |
| Exit | 1473 | 36 | 1437 |
| Total | 3068 | 61 | 3007 |
| % | 100% | 2% | 98% |

Net External Trips for Multi-Use Development

| | LU A | LU B | LU C | Total | |
|---|---|---|---|---|---|
| Enter | 46 | 14 | 1570 | 1630 | |
| Exit | 41 | 16 | 1437 | 1494 | Internal |
| Total | 87 | 30 | 3007 | 3124 | Interaction |
| Single-Use | 135 | 43 | 3068 | 3246 | 4% |

CUTR

CENTER for URBAN TRANSPORTATION RESEARCH

# Trip Internalization in Multi-Use Developments

**April 2014**

**BDK84-977-10**

**Final Report**

**PREPARED FOR:**
Florida Department of Transportation

FDOT

Center for Urban Transportation Research
University of South Florida
4202 E. Fowler Ave., CUT100, Tampa, FL 33620-5375

# Trip Internalization in Multi-Use Developments

**BDK84-977-10**

**Final Report**

Prepared for:

**Florida Department of Transportation**
Ms. Gina Bonyani, Project Manager
Mr. Gary Sokolow, Co-Project Manager

Prepared by:

**USF Center for Urban Transportation Research**
Dr. Pei-Sung Lin, P.E., PTOE, FITE, Program Director
Dr. Aldo Fabregas, Research Associate
Dr. Abdul Pinjari, Assistant Professor
Ms. Karen Seggerman, AICP, Senior Research Associate
Dr. Changyoung Lee, AICP, PTP, Senior Research Associate
Mr. Vivek Koneru, Graduate Assistant

**Texas A&M Transportation Institute**
Mr. Brian Bochner, Senior Research Engineer
Dr. Benjamin Sperry, Assistant Research Scientist

**April 2014**

# Executive Summary

Internal trip capture refers to a reduction of trips from and to a development resulting from the proximity of complementary land uses within the development. Trips occur within the development rather than encumbering traffic flow on public roadways outside of the development. Nationwide, there have been efforts to enhance both the data availability and estimation methodologies to estimate internal trip capture rates. The Florida Department of Transportation (FDOT) contracted with the Center for Urban Transportation Research (CUTR) at the University of South Florida to conduct research aimed at obtaining additional quantitative estimates of internal trip capture need to improve current planning practices.

This research examines the internal capture rates of mixed-use developments in Florida in order to ultimately improve the accuracy of trip internalization estimation in the development review process. To achieve this goal, the objectives of the research focused on (1) obtaining additional detailed internal trip capture data for multi-use developments in Florida, (2) analyzing the characteristics of the internal trip capture process, and (3) contributing to the available data on internal trip capture.

Mixed-use developments vary in size, density, and land use composition. As part of this research, developments across Florida were reviewed, and those most representative of mixed-used development (MXD) were selected as candidates for further research. Typical candidate developments commonly contained a mix of interconnected land uses such as offices, restaurants, residential, and retail. Four MXD sites in Central Florida were selected for analysis, including Creekwood in Bradenton, South of Downtown Orlando (SODO) in Orlando, Lakeside Village in Lakeland, and Uptown Altamonte in Altamonte Springs. These sites included traditional suburban developments having single-family detached homes as the main residential component with commercial retail and services located adjacent to the major arterial serving the development and also compact MXDs having neo-traditional residential uses with ground-floor retail.

To prepare internal trip capture estimates, a detailed data collection process was required. The on-site data collection efforts for this study consisted of cordon vehicle counts, door counts, and brief interviews of people exiting various establishments within the development. Data were collected for both AM and PM peak hours. The main output of the data collection process was a set of internal trip capture data between different land uses within the MXDs. These data converted to internal trip capture rates between land uses are inputs for internal trip capture calculations that typically take place when producing trip generation estimates in traffic impact analyses for new developments.

The internal trip capture data from the subject sites were collected and analyzed using a recently-enhanced internal trip capture methodology documented in National Cooperative Highway Research Program (NCHRP) Report 684, "Enhancing Internal Trip Capture Estimation for Mixed-Use Developments." The recommended estimation method from NCHRP Report 684 built on the Institute of Transportation Engineers (ITE) internal trip capture procedures contained in the second edition of its *Trip Generation Handbook*. The NCHRP method expanded the ITE internal trip capture procedure to cover both AM and PM

peak periods, six primary land uses found at MXDs, and proximity of interacting land uses. In the NCHRP enhanced methodology, the maximum unconstrained internal trip capture rates were chosen to represent the interaction between pairs of land uses in mixed-use developments.

Results obtained through this FDOT research (referred to as FDOT 2014) verified that the enhanced NCHRP methodology produced more accurate estimates than the traditional internal trip capture procedure found in the ITE *Trip Generation Handbook*. Data collected for this FDOT research can potentially contribute to 33 percent of the maximum unconstrained internal trip capture rates for the PM peak period recommended by NCHRP Report 684 to enhance the methodology for internal trip capture estimation. The proposed revised unconstrained internal trip capture rates based on the combined FDOT 2014, NCHRP 684, and FDOT 1993 data are shown in Tables ES-1 through ES-4. These values show how much internal capture was achieved by the best balances between interacting land uses during the PM and AM peak periods. These values demonstrated the most unconstrained individual conditions observed at the selected 10 MXDs.

**Table ES-1: Proposed Unconstrained Internal Trip Capture Rates for Outbound Trips for PM Peak Period**

| Origin Land Use From | Destination Land Use To | | | | | |
|---|---|---|---|---|---|---|
| | **Office** | **Retail** | **Restaurant** | **Residential** | **Cinema** | **Hotel** |
| Office | N/A | 20% | 4% | 24% | 0% | 3% |
| Retail | 2% | N/A | 29% | 26% | 4% | 5% |
| Restaurant | 3% | 41% | N/A | 18% | 8% | 7% |
| Residential | 4% | 43% | 24% | N/A | 3% | 4% |
| Cinema | 2% | 21% | 31% | 8% | N/A | 4% |
| Hotel | 0% | 16% | 68% | 2% | 14% | N/A |

**Table ES-2: Proposed Unconstrained Internal Trip Capture Rates for Inbound Trips for PM Peak Period**

| Destination Land Use To | Origin Land Use From | | | | | |
|---|---|---|---|---|---|---|
| | **Office** | **Retail** | **Restaurant** | **Residential** | **Cinema** | **Hotel** |
| Office | N/A | 31% | 30% | 57% | 6% | 0% |
| Retail | 8% | N/A | 50% | 10% | 4% | 2% |
| Restaurant | 3% | 29% | N/A | 33% | 3% | 5% |
| Residential | 6% | 46% | 16% | N/A | 4% | 1% |
| Cinema | 1% | 26% | 36% | 2% | N/A | 2% |
| Hotel | 1% | 17% | 71% | 12% | 15% | N/A |

**Table ES-3: Proposed Unconstrained Internal Trip Capture Rates for Outbound Trips for AM Peak Period**

| Origin Land Use From | Destination Land Use To | | | | | |
|---|---|---|---|---|---|---|
| | Office | Retail | Restaurant | Residential | Cinema | Hotel |
| Office | N/A | 28% | 63% | 35% | N/A | 0% |
| Retail | 29% | N/A | 14% | 17% | N/A | 0% |
| Restaurant | 31% | 14% | N/A | 6% | N/A | 8% |
| Residential | 2% | 16% | 20% | N/A | N/A | 0% |
| Cinema | N/A | N/A | N/A | N/A | N/A | N/A |
| Hotel | 75% | 14% | 9% | 12% | N/A | N/A |

**Table ES-4: Proposed Unconstrained Internal Trip Capture Rates for Inbound Trips for AM Peak Period**

| Destination Land Use To | Origin Land Use From | | | | | |
|---|---|---|---|---|---|---|
| | Office | Retail | Restaurant | Residential | Cinema | Hotel |
| Office | N/A | 4% | 14% | 3% | N/A | 3% |
| Retail | 32% | N/A | 8% | 39% | N/A | 4% |
| Restaurant | 23% | 50% | N/A | 20% | N/A | 7% |
| Residential | 33% | 45% | 16% | N/A | N/A | 9% |
| Cinema | N/A | N/A | N/A | N/A | N/A | N/A |
| Hotel | 0% | 0% | 21% | 0% | N/A | N/A |

A series of prediction tests was developed and conducted in this research to assess the contribution of the internal trip capture rates supplied by this research to the accuracy of trip generation estimates. It was found that the combined data approach (NCHRP+FDOT 2014), which used an updated maximum unconstrained internal trip capture rates based on the expanded database of NCHRP and FDOT 2014, improved the prediction capability in five out of eight test cases, with one test case tied. The results of the tests are presented in Figure ES-1.

In Figure ES-1, the dotted line represents the observed bidirectional cordon counts (e.g., driveway counts) or 100 percent. The prediction errors are expressed as percentages of the observed cordon counts. Values greater than 100 percent represent overestimation of trip generation, and values below 100 percent represent under estimation. As shown in Figure ES-1, the traditional ITE single lane use rates and ITE internal trip capture (ITC) rates tend to significantly overestimate the bidirectional cordon counts of a MXD.

The estimation error was high for the estimators for SODO. This can be the result of several factors, such as unbalanced land use sizes/trip generation rates or overstated single land use rates. It was found that the major reason for a large estimation error was the actual

# APPENDIX H

***GRAVITY MODEL DATA***

# GREATER PHILADELPHIA, PA

SCALE IN MILES

1 ½ 0 1 2 3 4 5 6 7 8 9 10

EXIT NO. ..... EXIT .....

ENLARGEMENT .....

© 2006 Alexandria Drafting Company, 6440 General Green Way, Alexandria, V. 22312-2447. All rights reserved. This publication may not be reproduced, in whole or in part, in any form or by any means, without written permission of the copyright owner.

**Detailed maps in this Street Map Book are indicated by a white background and dark blue lines**

## Gravity Model Analysis For Trip Distribution Percentages

| Municipality | County | 2000-2010 Census Data Population | Centroid Dist. (CD) (miles) | Weighted Population | Relative % |
|---|---|---|---|---|---|
| Marple Township | Delaware | 23428 | 1.0 | 23428 | 34.23% |
| City of Philadelphia | Philadelphia | 1553165 | 13.0 | 9190 | 13.43% |
| Haverford Township | Delaware | 48491 | 2.6 | 7173 | 10.48% |
| Upper Darby Township | Delaware | 82795 | 3.5 | 6759 | 9.88% |
| Springfield Township | Delaware | 23677 | 2.0 | 5919 | 8.65% |
| Ridley Township | Delaware | 30008 | 4.5 | 1482 | 2.17% |
| Lower Merion Township | Montgomery | 57825 | 6.3 | 1457 | 2.13% |
| Upper Providence Towsnhip | Delaware | 10142 | 2.8 | 1294 | 1.89% |
| Radnor Township | Delaware | 31531 | 5.0 | 1261 | 1.84% |
| Newtown Township | Delaware | 12216 | 4.0 | 764 | 1.12% |
| Nether Providence Township | Delaware | 13456 | 4.7 | 609 | 0.89% |
| Landsdowne Borough | Delaware | 10579 | 4.2 | 600 | 0.88% |
| Clifton Heights Borough | Delaware | 6779 | 3.4 | 586 | 0.86% |
| Middletown Township | Delaware | 16064 | 5.7 | 494 | 0.72% |
| Media Borough | Delaware | 5533 | 3.4 | 479 | 0.70% |
| City of Chester | Delaware | 29972 | 8.4 | 425 | 0.62% |
| Swarthmore Borough | Delaware | 6194 | 3.9 | 407 | 0.60% |
| Darby Township | Delaware | 9264 | 4.8 | 402 | 0.59% |
| Yeadon Borough | Delaware | 11762 | 5.5 | 389 | 0.57% |
| Collingdale Borough | Delaware | 8786 | 4.8 | 381 | 0.56% |
| Tredyffrin Township | Chester | 29332 | 9.2 | 347 | 0.51% |
| Upper Merion Township | Montgomery | 28395 | 9.1 | 343 | 0.50% |
| Glenholden Borough | Delaware | 7476 | 5.0 | 299 | 0.44% |
| Aston Township | Delaware | 16203 | 7.6 | 281 | 0.41% |
| Darby Borough | Delaware | 10687 | 6.2 | 278 | 0.41% |
| Aldan Borough | Delaware | 4152 | 3.9 | 273 | 0.40% |
| Morton Borough | Delaware | 2715 | 3.4 | 235 | 0.34% |
| Ridley Park Borough | Delaware | 7002 | 5.5 | 231 | 0.34% |
| Easttown Township | Chester | 10477 | 7.0 | 214 | 0.31% |
| Brookhaven Borough | Delaware | 8006 | 6.3 | 202 | 0.29% |
| Prospect Park Borough | Delaware | 6594 | 5.8 | 196 | 0.29% |
| Upper Chichester Township | Delaware | 16842 | 9.7 | 179 | 0.26% |
| Norwood Borough | Delaware | 5985 | 6.0 | 166 | 0.24% |
| Folcroft Borough | Delaware | 6978 | 6.5 | 165 | 0.24% |
| Willistown Township | Chester | 10497 | 8.0 | 164 | 0.24% |
| Narberth Borough | Montgomery | 4282 | 5.5 | 142 | 0.21% |
| Sharon Hill Borough | Delaware | 5468 | 6.3 | 138 | 0.20% |
| East Landsdowne Borough | Delaware | 2668 | 4.7 | 121 | 0.18% |
| Conshohocken Borough | Montgomery | 7883 | 8.3 | 114 | 0.17% |
| Edgmont Township | Delaware | 3918 | 6.1 | 105 | 0.15% |
| Tinicum Township | Delaware | 4353 | 7.0 | 89 | 0.13% |
| Colwyn Borough | Delaware | 2546 | 5.6 | 81 | 0.12% |
| Thornton Township | Delaware | 7093 | 9.8 | 74 | 0.11% |
| Greenwich Township | Gloucester | 4899 | 9.2 | 58 | 0.08% |
| Upland Borough | Delaware | 2977 | 7.2 | 57 | 0.08% |
| Parkside Borough | Delaware | 2267 | 6.5 | 54 | 0.08% |
| Eddystone Borough | Delaware | 2442 | 6.8 | 53 | 0.08% |
| Rutledge Borough | Delaware | 860 | 4.2 | 49 | 0.07% |
| Bridgeport Borough | Montgomery | 4554 | 10.0 | 46 | 0.07% |
| Chester Heights Borough | Delaware | 2481 | 7.9 | 40 | 0.06% |
| Rose Valley Borough | Delaware | 944 | 4.9 | 39 | 0.06% |
| Lower Chichester Township | Delaware | 3591 | 9.8 | 37 | 0.05% |
| Marcus Hook Borough | Delaware | 2397 | 10.0 | 24 | 0.04% |
| West Conshohocken Borough | Montgomery | 1320 | 7.8 | 22 | 0.03% |
| Trainer Borough | Delaware | 1901 | 9.6 | 21 | 0.03% |
| **Totals** | | **2231852** | | **68434** | **100.0%** |

## Gravity Model Analysis For Trip Distribution Percentages

Percentage Using Routes (To/From)

| Municipality | | East State | East Reed | East Lawrence | East Redhill | East Parkway | East Eagle | West State | West Old Marple | West Williamsburg | West Crum Creek | North Sproul | North Marpit | North Parkway | South Sproul | South Springfield | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marple Township | Delaware | | | 15% | 5% | 5% | | 5% | 10% | 5% | 5% | 40% | 5% | 5% | | | **100%** |
| City of Philadelphia | Philadelphia | 20% | | | | | 35% | 45% | | | | | | | | | **100%** |
| Haverford Township | Delaware | | | 35% | | | | | | | | 65% | | | | | **100%** |
| Upper Darby Township | Delaware | 60% | | | | | 40% | | | | | | | | | | **100%** |
| Springfield Township | Delaware | 40% | | | | | | | | | | | | | 15% | 45% | **100%** |
| Ridley Township | Delaware | | | | | | | | | | | | | | 65% | 35% | **100%** |
| Lower Merion Township | Montgomery | | | 65% | | | | | | | | 35% | | | | | **100%** |
| Upper Providence Towsnhip | Delaware | | | | | | | 50% | 45% | | | | | | 5% | | **100%** |
| Radnor Township | Delaware | 5% | | 50% | | | | 45% | | | | | | | | | **100%** |
| Newtown Township | Delaware | 10% | | 40% | | | | | | | | 50% | | | | | **100%** |
| Nether Providence Township | Delaware | | | | | | | 40% | | | | | | | 60% | | **100%** |
| Landsdowne Borough | Delaware | 30% | | | | | | | | | | | | | 30% | 40% | **100%** |
| Clifton Heights Borough | Delaware | | | | | | | | | | | | | | 50% | 50% | **100%** |
| Middletown Township | Delaware | | | | | | | 45% | 40% | | | | | | | 15% | **100%** |
| Media Borough | Delaware | | | | | | | | 40% | | | | | | 60% | | **100%** |
| City of Chester | Delaware | | | | | | | 35% | 35% | | | | | | 30% | | **100%** |
| Swarthmore Borough | Delaware | | | | | | | 55% | | | | | | | 45% | | **100%** |
| Darby Township | Delaware | | | | | | | | | | | | | | 30% | 70% | **100%** |
| Yeadon Borough | Delaware | 45% | | | | | | | | | | | | | | 55% | **100%** |
| Collingdale Borough | Delaware | | | | | | | | | | | | | | 55% | 45% | **100%** |
| Tredyffrin Township | Chester | | | 65% | | | | | | | | 35% | | | | | **100%** |
| Upper Merion Township | Montgomery | | | 100% | | | | | | | | | | | | | **100%** |
| Glenholden Borough | Delaware | | | | | | | | | | | | | | 65% | 35% | **100%** |
| Aston Township | Delaware | | | | | | | 35% | 30% | | | | | | 35% | | **100%** |
| Darby Borough | Delaware | 30% | | | | | | | | | | | | | 30% | 40% | **100%** |
| Aldan Borough | Delaware | | | | | | | | | | | | | | 30% | 70% | **100%** |
| Morton Borough | Delaware | | | | | | | | | | | | | | 35% | 65% | **100%** |
| Ridley Park Borough | Delaware | | | | | | | 50% | | | | | | | 50% | | **100%** |
| Easttown Township | Chester | | | | | | | | | | | 100% | | | | | **100%** |
| Brookhaven Borough | Delaware | | | | | | | 67% | | | | | | | 33% | | **100%** |
| Prospect Park Borough | Delaware | | | | | | | | | | | | | | 40% | 60% | **100%** |
| Upper Chichester Township | Delaware | | | | | | | 100% | | | | | | | | | **100%** |
| Norwood Borough | Delaware | | | | | | | 30% | | | | | | | 40% | 30% | **100%** |
| Folcroft Borough | Delaware | | | | | | | 32% | | | | | | | 34% | 34% | **100%** |
| Willistown Township | Chester | | | | | | | 32% | | | | 68% | | | | | **100%** |
| Narberth Borough | Montgomery | | | 67% | | | | | | | | 33% | | | | | **100%** |
| Sharon Hill Borough | Delaware | | | | | | | | | | | | | | 45% | 55% | **100%** |
| East Landsdowne Borough | Delaware | 35% | | 30% | | | | | | | | | | | | 35% | **100%** |
| Conshohocken Borough | Montgomery | | | 100% | | | | | | | | | | | | | **100%** |
| Edgmont Township | Delaware | | | | | | | 70% | | | | 30% | | | | | **100%** |
| Tinicum Township | Delaware | | | | | | | 55% | | | | | | | 45% | | **100%** |
| Colwyn Borough | Delaware | 25% | | | | | | | | | | | | | 35% | 40% | **100%** |
| Thornton Township | Delaware | 60% | | | | | | | | | | 40% | | | | | **100%** |
| Greenwich Township | Gloucester | | | | | | | 100% | | | | | | | | | **100%** |
| Upland Borough | Delaware | | | | | | | 66% | | | | | | | 34% | | **100%** |
| Parkside Borough | Delaware | | | | | | | 66% | | | | | | | 34% | | **100%** |
| Eddystone Borough | Delaware | | | | | | | 55% | | | | | | | 45% | | **100%** |
| Rutledge Borough | Delaware | | | | | | | | | | | | | | 75% | 25% | **100%** |
| Bridgeport Borough | Montgomery | | | 100% | | | | | | | | | | | | | **100%** |
| Chester Heights Borough | Delaware | | | | | | | 100% | | | | | | | | | **100%** |
| Rose Valley Borough | Delaware | | | | | | | | 34% | | | | | | 66% | | **100%** |
| Lower Chichester Township | Delaware | | | | | | | 100% | | | | | | | | | **100%** |
| Marcus Hook Borough | Delaware | | | | | | | 100% | | | | | | | | | **100%** |
| West Conshohocken Borough | Montgomery | | | 75% | | | | | | | | 25% | | | | | **100%** |
| Trainer Borough | Delaware | | | | | | | 100% | | | | | | | | | **100%** |
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | |

## Gravity Model Analysis For Trip Distribution Percentages

**Relative Percentage Using Routes**

| Municipality | | East State | East Reed | East Lawrence | East Redhill | East Parkway | East Eagle | West State | West Old Marple | West Williamsburg | West Crum Creek | North Sproul | North Marpit | North Parkway | South Sproul | South Springfield | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marple Township | Delaware | 0.0% | 0.0% | 5.1% | 1.7% | 1.7% | 0.0% | 1.7% | 3.4% | 1.7% | 1.7% | 13.7% | 1.7% | 1.7% | 0.0% | 0.0% | **34.2%** |
| City of Philadelphia | Philadelphia | 2.7% | 0.0% | 0.0% | 0.0% | 0.0% | 4.7% | 6.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **13.4%** |
| Haverford Township | Delaware | 0.0% | 0.0% | 3.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 6.8% | 0.0% | 0.0% | 0.0% | 0.0% | **10.5%** |
| Upper Darby Township | Delaware | 5.9% | 0.0% | 0.0% | 0.0% | 0.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **9.9%** |
| Springfield Township | Delaware | 3.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.3% | 3.9% | **8.6%** |
| Ridley Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.4% | 0.8% | **2.2%** |
| Lower Merion Township | Montgomery | 0.0% | 0.0% | 1.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | **2.1%** |
| Upper Providence Towsnhip | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.9% | 0.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | **1.9%** |
| Radnor Township | Delaware | 0.1% | 0.0% | 0.9% | 0.0% | 0.0% | 0.0% | 0.8% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **1.8%** |
| Newtown Township | Delaware | 0.1% | 0.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% | **1.1%** |
| Nether Providence Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.5% | 0.0% | **0.9%** |
| Landsdowne Borough | Delaware | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.4% | **0.9%** |
| Clifton Heights Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | 0.4% | **0.9%** |
| Middletown Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | **0.7%** |
| Media Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | 0.0% | **0.7%** |
| City of Chester | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | **0.6%** |
| Swarthmore Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | **0.6%** |
| Darby Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.4% | **0.6%** |
| Yeadon Borough | Delaware | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | **0.6%** |
| Collingdale Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.3% | **0.6%** |
| Tredyffrin Township | Chester | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | **0.5%** |
| Upper Merion Township | Montgomery | 0.0% | 0.0% | 0.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.5%** |
| Glenholden Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.2% | **0.4%** |
| Aston Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | **0.4%** |
| Darby Borough | Delaware | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.2% | **0.4%** |
| Aldan Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.3% | **0.4%** |
| Morton Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.2% | **0.3%** |
| Ridley Park Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | **0.3%** |
| Easttown Township | Chester | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | **0.3%** |
| Brookhaven Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | **0.3%** |
| Prospect Park Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.2% | **0.3%** |
| Upper Chichester Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.3%** |
| Norwood Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | **0.2%** |
| Folcroft Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | **0.2%** |
| Willistown Township | Chester | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | **0.2%** |
| Narberth Borough | Montgomery | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | **0.2%** |
| Sharon Hill Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% | **0.2%** |
| East Landsdowne Borough | Delaware | 0.1% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | **0.2%** |
| Conshohocken Borough | Montgomery | 0.0% | 0.0% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.2%** |
| Edgmont Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.2%** |
| Tinicum Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | **0.1%** |
| Colwyn Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Thornton Township | Delaware | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Greenwich Township | Gloucester | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Upland Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Parkside Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Eddystone Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Rutledge Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | **0.1%** |
| Bridgeport Borough | Montgomery | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Chester Heights Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Rose Valley Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Lower Chichester Township | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.1%** |
| Marcus Hook Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.0%** |
| West Conshohocken Borough | Montgomery | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.0%** |
| Trainer Borough | Delaware | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | **0.0%** |
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **100.0%** |
| | | | | | | | | | | | | | | | | | |
| | | **13.1%** | **0.0%** | **12.8%** | **1.7%** | **1.7%** | **8.7%** | **12.3%** | **5.2%** | **1.7%** | **1.7%** | **22.6%** | **1.7%** | **1.7%** | **7.1%** | **7.9%** | **100.0%** |

# APPENDIX I

***VOLUME DEVELOPMENT SPREADSHEETS***

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Lawrence Road (W)
**Synchro Node:** 1 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **0** | **0** | **0** | **262** | **3** | **604** | **4** | **1180** | **325** | **365** | **737** | **0** | **3480** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **262** | **3** | **604** | **4** | **1180** | **325** | **365** | **737** | **0** | **3480** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 8 | 0 | 19 | 0 | 37 | 10 | 11 | 23 | 0 | 108 |
| Marple Associates (260+ksf) | | | | 10 | | 23 | | | 23 | 24 | | | 80 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | 1 | | 3 | | | 7 | 7 | | | 18 |
| **2020 Base Volumes** | **0** | **0** | **0** | **281** | **3** | **649** | **4** | **1217** | **365** | **407** | **760** | **0** | **3686** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 69 | | | | 71 | 30 | | 127 | | 297 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **69** | **0** | **0** | **0** | **71** | **30** | **0** | **127** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **69** | **0** | **0** | **0** | **71** | **30** | **0** | **127** | **0** | **297** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **350** | **3** | **649** | **4** | **1288** | **395** | **407** | **887** | **0** | **3983** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 15 | 0 | 35 | 0 | 68 | 19 | 21 | 42 | 0 | 200 |
| **2025 Base Volumes** | **0** | **0** | **0** | **288** | **3** | **665** | **4** | **1248** | **374** | **417** | **779** | **0** | **3778** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **357** | **3** | **665** | **4** | **1319** | **404** | **417** | **906** | **0** | **4075** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **0** | **0** | **9** | **375** | **0** | **511** | **2** | **1010** | **292** | **472** | **1385** | **0** | **4056** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **9** | **375** | **0** | **511** | **2** | **1010** | **292** | **472** | **1385** | **0** | **4056** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 12 | 0 | 16 | 0 | 31 | 9 | 15 | 43 | 0 | 126 |
| Marple Associates (260+ksf) | | | | 42 | | 50 | | | 36 | 49 | | | 177 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | 8 | | 10 | | | 3 | 4 | | | 25 |
| **2020 Base Volumes** | **0** | **0** | **9** | **437** | **0** | **587** | **2** | **1041** | **340** | **540** | **1428** | **0** | **4384** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 116 | | | | 250 | 134 | | 225 | | 725 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **116** | **0** | **0** | **0** | **250** | **134** | **0** | **225** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **116** | **0** | **0** | **0** | **250** | **134** | **0** | **225** | **0** | **725** |
| **2020 Projected Volumes** | **0** | **0** | **9** | **553** | **0** | **587** | **2** | **1291** | **474** | **540** | **1653** | **0** | **5109** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 1 | 22 | 0 | 29 | 0 | 58 | 17 | 27 | 80 | 0 | 234 |
| **2025 Base Volumes** | **0** | **0** | **10** | **447** | **0** | **600** | **2** | **1068** | **348** | **552** | **1465** | **0** | **4492** |
| **2025 Projected Volumes** | **0** | **0** | **10** | **563** | **0** | **600** | **2** | **1318** | **482** | **552** | **1690** | **0** | **5217** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **0** | **0** | **6** | **305** | **0** | **463** | **0** | **1186** | **343** | **313** | **1035** | **0** | **3651** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **6** | **305** | **0** | **463** | **0** | **1186** | **343** | **313** | **1035** | **0** | **3651** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 9 | 0 | 14 | 0 | 37 | 11 | 10 | 32 | 0 | 113 |
| Marple Associates (260+ksf) | | | | 45 | | 57 | | | 62 | 49 | | | 213 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | 6 | | 8 | | | 10 | 8 | | | 32 |
| **2020 Base Volumes** | **0** | **0** | **6** | **365** | **0** | **542** | **0** | **1223** | **426** | **380** | **1067** | **0** | **4009** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 12.0% | | | | | | | 22.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 22.0% | 12.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 182 | | | | 279 | 148 | | 342 | | 951 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **182** | **0** | **0** | **0** | **279** | **148** | **0** | **342** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **182** | **0** | **0** | **0** | **279** | **148** | **0** | **342** | **0** | **951** |
| **2020 Projected Volumes** | **0** | **0** | **6** | **547** | **0** | **542** | **0** | **1502** | **574** | **380** | **1409** | **0** | **4960** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 18 | 0 | 27 | 0 | 68 | 20 | 18 | 60 | 0 | 211 |
| **2025 Base Volumes** | **0** | **0** | **6** | **374** | **0** | **555** | **0** | **1254** | **435** | **388** | **1095** | **0** | **4107** |
| **2025 Projected Volumes** | **0** | **0** | **6** | **556** | **0** | **555** | **0** | **1533** | **583** | **388** | **1437** | **0** | **5058** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Williamsburg Drive (E )/Shopping Center Driveway (W)
**Synchro Node:** 2 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **39** | **15** | **25** | **70** | **6** | **77** | **20** | **1443** | **79** | **81** | **1058** | **17** | **2930** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **39** | **15** | **25** | **70** | **6** | **77** | **20** | **1443** | **79** | **81** | **1058** | **17** | **2930** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 0 | 1 | 2 | 0 | 2 | 1 | 45 | 2 | 3 | 33 | 1 | 91 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **40** | **15** | **26** | **72** | **6** | **79** | **21** | **1518** | **81** | **84** | **1102** | **18** | **3062** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | 11 | | | | 5 | 100 | | | 196 | | 312 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **11** | **0** | **0** | **0** | **5** | **100** | **0** | **0** | **196** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **11** | **0** | **0** | **0** | **5** | **100** | **0** | **0** | **196** | **0** | **312** |
| **2020 Projected Volumes** | **40** | **15** | **37** | **72** | **6** | **79** | **26** | **1618** | **81** | **84** | **1298** | **18** | **3374** |
| Base growth (0.51% compounded for 11 yrs) | 2 | 1 | 1 | 4 | 0 | 4 | 1 | 83 | 5 | 5 | 61 | 1 | 168 |
| **2025 Base Volumes** | **41** | **16** | **26** | **74** | **6** | **81** | **21** | **1556** | **84** | **86** | **1130** | **18** | **3139** |
| **2025 Projected Volumes** | **41** | **16** | **37** | **74** | **6** | **81** | **26** | **1656** | **84** | **86** | **1326** | **18** | **3451** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **22** | **20** | **25** | **245** | **13** | **209** | **18** | **1047** | **125** | **185** | **1698** | **19** | **3626** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **22** | **20** | **25** | **245** | **13** | **209** | **18** | **1047** | **125** | **185** | **1698** | **19** | **3626** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 1 | 1 | 8 | 0 | 6 | 1 | 32 | 4 | 6 | 53 | 1 | 114 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **23** | **21** | **26** | **253** | **13** | **215** | **19** | **1118** | **129** | **191** | **1801** | **20** | **3829** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | 19 | | | | 22 | 385 | | | 343 | | 769 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **19** | **0** | **0** | **0** | **22** | **385** | **0** | **0** | **343** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **19** | **0** | **0** | **0** | **22** | **385** | **0** | **0** | **343** | **0** | **769** |
| **2020 Projected Volumes** | **23** | **21** | **45** | **253** | **13** | **215** | **41** | **1503** | **129** | **191** | **2144** | **20** | **4598** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 1 | 1 | 14 | 1 | 12 | 1 | 60 | 7 | 11 | 98 | 1 | 208 |
| **2025 Base Volumes** | **23** | **21** | **26** | **259** | **14** | **221** | **19** | **1146** | **132** | **196** | **1846** | **20** | **3923** |
| **2025 Projected Volumes** | **23** | **21** | **45** | **259** | **14** | **221** | **41** | **1531** | **132** | **196** | **2189** | **20** | **4692** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **18** | **17** | **16** | **235** | **13** | **233** | **18** | **1252** | **171** | **175** | **1200** | **12** | **3360** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **18** | **17** | **16** | **235** | **13** | **233** | **18** | **1252** | **171** | **175** | **1200** | **12** | **3360** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 1 | 0 | 7 | 0 | 7 | 1 | 39 | 5 | 5 | 37 | 0 | 103 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **19** | **18** | **16** | **242** | **13** | **240** | **19** | **1363** | **176** | **180** | **1288** | **12** | **3586** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | 2.0% | | | | | | | | 34.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | 2.0% | 34.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | 31 | | | | 25 | 427 | | | 525 | | 1008 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **31** | **0** | **0** | **0** | **25** | **427** | **0** | **0** | **525** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **31** | **0** | **0** | **0** | **25** | **427** | **0** | **0** | **525** | **0** | **1008** |
| **2020 Projected Volumes** | **19** | **18** | **47** | **242** | **13** | **240** | **44** | **1790** | **176** | **180** | **1813** | **12** | **4594** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 1 | 1 | 14 | 1 | 13 | 1 | 72 | 10 | 10 | 69 | 1 | 194 |
| **2025 Base Volumes** | **19** | **18** | **17** | **249** | **14** | **246** | **19** | **1396** | **181** | **185** | **1320** | **13** | **3677** |
| **2025 Projected Volumes** | **19** | **18** | **48** | **249** | **14** | **246** | **44** | **1823** | **181** | **185** | **1845** | **13** | **4685** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Reed Street (W)
**Synchro Node:** 3 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **171** | | **163** | | **1473** | **264** | **155** | **1015** | | **3241** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **171** | **0** | **163** | **0** | **1473** | **264** | **155** | **1015** | **0** | **3241** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 46 | 8 | 5 | 31 | 0 | 100 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **176** | **0** | **168** | **0** | **1549** | **272** | **160** | **1057** | **0** | **3382** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | 3 | | 50 | (83) |
| EXIT = | 198 | (55) | 89 | | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 105 | | | 208 | | 313 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | (-176) | | (-168) | | (168) | (-272) | (-160) | (160) | | -448 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | (-181) | | (-172) | | (172) | (-279) | (-164) | (164) | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **-176** | **0** | **-168** | **0** | **273** | **-272** | **-160** | **368** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **-181** | **0** | **-172** | **0** | **277** | **-279** | **-164** | **372** | **0** | **-147** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1822** | **0** | **0** | **1425** | **0** | **3247** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 10 | 0 | 9 | 0 | 85 | 15 | 9 | 58 | 0 | 186 |
| **2025 Base Volumes** | **0** | **0** | **0** | **181** | **0** | **172** | **0** | **1588** | **279** | **164** | **1084** | **0** | **3468** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1865** | **0** | **0** | **1456** | **0** | **3321** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **302** | | **150** | | **1012** | **238** | **256** | **1602** | | **3560** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **302** | **0** | **150** | **0** | **1012** | **238** | **256** | **1602** | **0** | **3560** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 31 | 7 | 8 | 50 | 0 | 110 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **0** | **0** | **0** | **311** | **0** | **155** | **0** | **1082** | **245** | **264** | **1702** | **0** | **3759** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | 69 | | 52 | (101) |
| EXIT = | 1070 | (347) | 22 | | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 407 | | | 362 | | 769 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | (-311) | | (-155) | | (155) | (-245) | (-264) | (264) | | -556 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | (-319) | | (-159) | | (159) | (-252) | (-271) | (271) | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **-311** | **0** | **-155** | **0** | **562** | **-245** | **-264** | **626** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **-319** | **0** | **-159** | **0** | **566** | **-252** | **-271** | **633** | **0** | **198** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1644** | **0** | **0** | **2328** | **0** | **3972** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 17 | 0 | 9 | 0 | 58 | 14 | 15 | 92 | 0 | 205 |
| **2025 Base Volumes** | **0** | **0** | **0** | **319** | **0** | **159** | **0** | **1109** | **252** | **271** | **1744** | **0** | **3854** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1675** | **0** | **0** | **2377** | **0** | **4052** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **246** | | **138** | | **1130** | **272** | **264** | **1222** | | **3272** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **246** | **0** | **138** | **0** | **1130** | **272** | **264** | **1222** | **0** | **3272** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 8 | 0 | 4 | 0 | 35 | 8 | 8 | 38 | 0 | 101 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **0** | **0** | **0** | **254** | **0** | **142** | **0** | **1237** | **280** | **272** | **1311** | **0** | **3496** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | 46 | | 37 | (45) |
| EXIT = | 1204 | (391) | 41 | | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 452 | | | 554 | | 1006 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | (-254) | | (-142) | | (142) | (-280) | (-272) | (272) | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | (-260) | | (-146) | | (146) | (-288) | (-279) | (279) | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **-254** | **0** | **-142** | **0** | **594** | **-280** | **-272** | **826** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **-260** | **0** | **-146** | **0** | **598** | **-288** | **-279** | **833** | **0** | **458** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1831** | **0** | **0** | **2137** | **0** | **3968** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 14 | 0 | 8 | 0 | 65 | 16 | 15 | 70 | 0 | 188 |
| **2025 Base Volumes** | **0** | **0** | **0** | **260** | **0** | **146** | **0** | **1267** | **288** | **279** | **1343** | **0** | **3583** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1865** | **0** | **0** | **2176** | **0** | **4041** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Crum Creek Road (E )/Realigned Reed Street (W )
**Synchro Node:** 4 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **26** | | **33** | | | | **57** | **2106** | | | **1044** | **33** | **3299** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **26** | **0** | **33** | **0** | **0** | **0** | **57** | **2106** | **0** | **0** | **1044** | **33** | **3299** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 65 | 0 | 0 | 32 | 1 | 102 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **27** | **0** | **34** | **0** | **0** | **0** | **59** | **2201** | **0** | **0** | **1087** | **34** | **3442** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **3** | | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **89** | | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 2.0% | | | | | | | | 9.0% | 27.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 2.0% | 9.0% | | 27.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 17.0% | 9.0% | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 17.0% | | 9.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 2.0% | | | | | | 37.0% | 13.0% | 36.0% | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | 50.0% | 2.0% | 9.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -12.0% | 12.0% | 24.0% | -24.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | 24.0% | | 12.0% | | | | | | | |
| **New Trips** | | 11 | | 40 | 5 | 30 | | 80 | 8 | 65 | 141 | | 380 |
| **Pass-by Trips** | | | | (20) | | (10) | | (-10) | (10) | (20) | (-20) | | 30 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | (-4) | (4) | | (171) | (5) | (168) | | (-268) | (268) | (160) | (-171) | (-5) | 328 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | (-4) | (4) | | (175) | (6) | (172) | | (-275) | (275) | (164) | (-175) | (-6) | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **-4** | **15** | **0** | **231** | **10** | **208** | **0** | **-198** | **286** | **245** | **-50** | **-5** | |
| Total Trip Distribution - Design Year | **-4** | **15** | **0** | **235** | **11** | **212** | **0** | **-205** | **293** | **249** | **-54** | **-6** | **746** |
| **2020 Projected Volumes** | **23** | **15** | **34** | **231** | **10** | **208** | **59** | **2003** | **286** | **245** | **1037** | **29** | **4180** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 121 | 0 | 0 | 60 | 2 | 189 |
| **2025 Base Volumes** | **27** | **0** | **35** | **0** | **0** | **0** | **60** | **2257** | **0** | **0** | **1115** | **35** | **3529** |
| **2025 Projected Volumes** | **23** | **15** | **35** | **235** | **11** | **212** | **60** | **2052** | **293** | **249** | **1061** | **29** | **4275** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **16** | | **48** | | | | **46** | **1302** | | | **2159** | **104** | **3675** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **16** | **0** | **48** | **0** | **0** | **0** | **46** | **1302** | **0** | **0** | **2159** | **104** | **3675** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 40 | 0 | 0 | 67 | 3 | 112 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **16** | **0** | **49** | **0** | **0** | **0** | **47** | **1381** | **0** | **0** | **2276** | **107** | **3876** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **69** | | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **22** | | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 2.0% | | | | | | | | 9.0% | 27.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 2.0% | 9.0% | | 27.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 17.0% | 9.0% | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 17.0% | | 9.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 2.0% | | | | | | 37.0% | 13.0% | 36.0% | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | 50.0% | 2.0% | 9.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -6.0% | 6.0% | 47.0% | -47.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | 47.0% | | 6.0% | | | | | | | |
| **New Trips** | | 19 | | 30 | 22 | 103 | | 310 | 19 | 108 | 254 | | 865 |
| **Pass-by Trips** | | | | (47) | | (6) | | (-6) | (6) | (47) | (-47) | | 53 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | (-3) | (3) | | (297) | (14) | (155) | | (-242) | (242) | (264) | (-297) | (-14) | 419 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | (-3) | (3) | | (305) | (14) | (159) | | (-249) | (249) | (271) | (-305) | (-14) | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **-3** | **22** | **0** | **374** | **36** | **264** | **0** | **62** | **267** | **419** | **-90** | **-14** | |
| Total Trip Distribution - Design Year | **-3** | **22** | **0** | **382** | **36** | **268** | **0** | **55** | **274** | **426** | **-98** | **-14** | **1348** |
| **2020 Projected Volumes** | **13** | **22** | **49** | **374** | **36** | **264** | **47** | **1443** | **267** | **419** | **2186** | **93** | **5213** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 0 | 3 | 0 | 0 | 0 | 3 | 75 | 0 | 0 | 124 | 6 | 212 |
| **2025 Base Volumes** | **17** | **0** | **51** | **0** | **0** | **0** | **49** | **1416** | **0** | **0** | **2333** | **110** | **3976** |
| **2025 Projected Volumes** | **14** | **22** | **51** | **382** | **36** | **268** | **49** | **1471** | **274** | **426** | **2235** | **96** | **5324** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **17** | | **23** | | | | **54** | **1754** | | | **1442** | **59** | **3349** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **17** | **0** | **23** | **0** | **0** | **0** | **54** | **1754** | **0** | **0** | **1442** | **59** | **3349** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 54 | 0 | 0 | 45 | 2 | 105 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **18** | **0** | **24** | **0** | **0** | **0** | **56** | **1880** | **0** | **0** | **1538** | **61** | **3577** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **46** | | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **41** | | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 2.0% | | | | | | | | 9.0% | 27.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 2.0% | 9.0% | | 27.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 17.0% | 9.0% | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 17.0% | | 9.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 2.0% | | | | | | 37.0% | 13.0% | 36.0% | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | 50.0% | 2.0% | 9.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -8.0% | 8.0% | 32.0% | -32.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | 32.0% | | 8.0% | | | | | | | |
| **New Trips** | | 31 | | 24 | 25 | 115 | | 343 | 13 | 150 | 404 | | 1105 |
| **Pass-by Trips** | | | | (14) | | (4) | | (-4) | (4) | (14) | (-14) | | 18 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | (-3) | (3) | | (244) | (10) | (142) | | (-277) | (277) | (272) | (-244) | (-10) | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | (-3) | (3) | | (250) | (10) | (146) | | (-285) | (285) | (279) | (-250) | (-10) | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **-3** | **34** | **0** | **282** | **35** | **261** | **0** | **62** | **294** | **436** | **146** | **-10** | |
| Total Trip Distribution - Design Year | **-3** | **34** | **0** | **288** | **35** | **265** | **0** | **54** | **302** | **443** | **140** | **-10** | **1548** |
| **2020 Projected Volumes** | **15** | **34** | **24** | **282** | **35** | **261** | **56** | **1942** | **294** | **436** | **1684** | **51** | **5114** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 101 | 0 | 0 | 83 | 3 | 192 |
| **2025 Base Volumes** | **18** | **0** | **24** | **0** | **0** | **0** | **57** | **1927** | **0** | **0** | **1576** | **62** | **3664** |
| **2025 Projected Volumes** | **15** | **34** | **24** | **288** | **35** | **265** | **57** | **1981** | **302** | **443** | **1716** | **52** | **5212** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Intersection:** | **Sproul Road (NS) & Proposed RIROLI Driveway (W)** | | | | | | | | | |
| **Synchro Node:** | **5** | **Adjacent intersections:** | **West** | **0** | **East** | **0** | **North** | **0** | **South** | **0** |

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 2110 | | | 1155 | | 3265 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2110** | **0** | **0** | **1155** | **0** | **3265** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | 0 | 0 | 36 | 0 | 101 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2205** | **0** | **0** | **1202** | **0** | **3407** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **3** | | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **89** | | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 10.0% | 9.0% | 18.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | 10.0% | | 17.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -10.0% | 10.0% | 10.0% | -10.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | 10.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 20 | | 68 | 52 | 47 | 134 | | 321 |
| **Pass-by Trips** | | | | | | (6) | | (-6) | (6) | (6) | (-6) | | 6 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **62** | **58** | **53** | **128** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **62** | **58** | **53** | **128** | **0** | **327** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **2267** | **58** | **53** | **1330** | **0** | **3734** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 | 0 | 0 | 67 | 0 | 189 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2262** | **0** | **0** | **1233** | **0** | **3495** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **2324** | **58** | **53** | **1361** | **0** | **3822** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 1340 | | | 2209 | | 3549 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1340** | **0** | **0** | **2209** | **0** | **3549** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 68 | 0 | 110 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1421** | **0** | **0** | **2327** | **0** | **3748** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **69** | | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **22** | | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 10.0% | 9.0% | 18.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | 10.0% | | 17.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -5.0% | 5.0% | 15.0% | -15.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | 5.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 107 | | 222 | 92 | 83 | 202 | | 706 |
| **Pass-by Trips** | | | | | | (17) | | (-17) | (17) | (52) | (-52) | | 17 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **124** | **0** | **205** | **109** | **135** | **150** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **124** | **0** | **205** | **109** | **135** | **150** | **0** | **723** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **124** | **0** | **1626** | **109** | **135** | **2477** | **0** | **4471** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 0 | 0 | 127 | 0 | 204 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1456** | **0** | **0** | **2386** | **0** | **3842** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **124** | **0** | **1661** | **109** | **135** | **2536** | **0** | **4565** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 1264 | | | 1293 | | 2557 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1264** | **0** | **0** | **1293** | **0** | **2557** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 40 | 0 | 79 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1375** | **0** | **0** | **1384** | **0** | **2759** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **46** | | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **41** | | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 10.0% | 9.0% | 18.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | 10.0% | | 17.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -8.0% | 8.0% | 10.0% | -10.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | 8.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 120 | | 236 | 148 | 133 | 295 | | 932 |
| **Pass-by Trips** | | | | | | (31) | | (-31) | (31) | (39) | (-39) | | 31 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **151** | **0** | **205** | **179** | **172** | **256** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **151** | **0** | **205** | **179** | **172** | **256** | **0** | **963** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **151** | **0** | **1580** | **179** | **172** | **1640** | **0** | **3722** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 0 | 74 | 0 | 147 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1409** | **0** | **0** | **1418** | **0** | **2827** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **151** | **0** | **1614** | **179** | **172** | **1674** | **0** | **3790** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Intersection:** | **Sproul Road (NS) & Cemetary Dr (E )/Don Guanella Dr (W)/Proposed Driveway** | | | | | | | | |
| **Synchro Node:** | **6** | **Adjacent intersections:** | **West** | **0** | **East** | **0** | **North** | **0** | **South** | **0** |

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **4** | **0** | **6** | **0** | **0** | **0** | **17** | **2106** | **21** | **6** | **1147** | **2** | **3309** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **4** | **0** | **6** | **0** | **0** | **0** | **17** | **2106** | **21** | **6** | **1147** | **2** | **3309** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 65 | 1 | 0 | 36 | 0 | 103 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **4** | **0** | **6** | **0** | **0** | **0** | **18** | **2201** | **22** | **6** | **1194** | **2** | **3453** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 10.0% | 19.0% | 13.0% | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 34.0% | | 12.0% | | 5.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -29.0% | 19.0% | 13.0% | -23.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 23.0% | | 29.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 67 | | 24 | | 96 | 100 | 68 | 66 | | 421 |
| **Pass-by Trips** | | | | (13) | | (16) | | (-16) | (10) | (7) | (-13) | | 17 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | (-21) | (-6) | (6) | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **80** | **0** | **40** | **0** | **80** | **89** | **69** | **59** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **80** | **0** | **40** | **0** | **80** | **89** | **69** | **59** | **0** | **417** |
| **2020 Projected Volumes** | **4** | **0** | **6** | **80** | **0** | **40** | **18** | **2281** | **111** | **75** | **1253** | **2** | **3870** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 121 | 1 | 0 | 66 | 0 | 189 |
| **2025 Base Volumes** | **4** | **0** | **6** | **0** | **0** | **0** | **18** | **2257** | **22** | **6** | **1224** | **2** | **3539** |
| **2025 Projected Volumes** | **4** | **0** | **6** | **80** | **0** | **40** | **18** | **2337** | **111** | **75** | **1283** | **2** | **3956** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **1** | **0** | **3** | **22** | **0** | **21** | **1** | **1318** | **5** | **3** | **2206** | **0** | **3580** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **1** | **0** | **3** | **22** | **0** | **21** | **1** | **1318** | **5** | **3** | **2206** | **0** | **3580** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 41 | 0 | 0 | 68 | 0 | 111 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **1** | **0** | **3** | **23** | **0** | **22** | **1** | **1398** | **5** | **3** | **2324** | **0** | **3780** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 10.0% | 19.0% | 13.0% | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 34.0% | | 12.0% | | 5.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -18.0% | 13.0% | 24.0% | -39.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 39.0% | | 18.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 364 | | 128 | | 186 | 175 | 120 | 82 | | 1055 |
| **Pass-by Trips** | | | | (135) | | (62) | | (-62) | (45) | (83) | (-135) | | 128 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | (-22) | | (-21) | | (21) | (-5) | (-3) | (3) | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **477** | **0** | **169** | **0** | **145** | **215** | **200** | **-50** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **477** | **0** | **169** | **0** | **145** | **215** | **200** | **-50** | **0** | **1156** |
| **2020 Projected Volumes** | **1** | **0** | **3** | **500** | **0** | **191** | **1** | **1543** | **220** | **203** | **2274** | **0** | **4936** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 76 | 0 | 0 | 127 | 0 | 205 |
| **2025 Base Volumes** | **1** | **0** | **3** | **23** | **0** | **22** | **1** | **1433** | **5** | **3** | **2383** | **0** | **3874** |
| **2025 Projected Volumes** | **1** | **0** | **3** | **500** | **0** | **191** | **1** | **1578** | **220** | **203** | **2333** | **0** | **5030** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **19** | **0** | **133** | **2** | **0** | **1** | **28** | **1244** | **0** | **13** | **1279** | **1** | **2720** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **19** | **0** | **133** | **2** | **0** | **1** | **28** | **1244** | **0** | **13** | **1279** | **1** | **2720** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 39 | 0 | 0 | 40 | 0 | 85 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **20** | **0** | **137** | **2** | **0** | **1** | **29** | **1355** | **0** | **13** | **1370** | **1** | **2928** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 10.0% | 19.0% | 13.0% | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 34.0% | | 12.0% | | 5.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -21.0% | 16.0% | 17.0% | -27.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 27.0% | | 21.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 409 | | 144 | | 239 | 281 | 193 | 102 | | 1368 |
| **Pass-by Trips** | | | | (106) | | (82) | | (-82) | (63) | (66) | (-106) | | 129 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | (-2) | | (-1) | | (1) | | (-13) | (13) | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **513** | **0** | **225** | **0** | **158** | **344** | **246** | **9** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **513** | **0** | **225** | **0** | **158** | **344** | **246** | **9** | **0** | **1495** |
| **2020 Projected Volumes** | **20** | **0** | **137** | **515** | **0** | **226** | **29** | **1513** | **344** | **259** | **1379** | **1** | **4423** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 0 | 8 | 0 | 0 | 0 | 2 | 72 | 0 | 1 | 74 | 0 | 158 |
| **2025 Base Volumes** | **20** | **0** | **141** | **2** | **0** | **1** | **30** | **1388** | **0** | **14** | **1404** | **1** | **3001** |
| **2025 Projected Volumes** | **20** | **0** | **141** | **515** | **0** | **226** | **30** | **1546** | **344** | **260** | **1413** | **1** | **4496** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Intersection:** | **Sproul Road (NS) & Cemetary Driveway (E )/Proposed Southern Driveway (W)** | | | | | | | | |
| **Synchro Node:** | **7** | **Adjacent intersections:** | **West** | **0** | **East** | **0** | **North** | **0** | **South** | **0** |

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **0** | | **0** | | | | | **2057** | | | **1313** | | **3370** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2057** | **0** | **0** | **1313** | **0** | **3370** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 0 | 41 | 0 | 105 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2151** | **0** | **0** | **1365** | **0** | **3516** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 39.0% | 5.0% | 5.0% | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 10.0% | | 5.0% | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -5.0% | 5.0% | 5.0% | -5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 5.0% | | 5.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | 36.0% | 9.0% | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 36.0% | | 9.0% | | | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 52 | | 18 | | 230 | 27 | 26 | 107 | | 460 |
| **Pass-by Trips** | | | | (3) | | (3) | | (-3) | (3) | (3) | (-3) | | 6 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | (-21) | (21) | (6) | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | (5) | | (33) | | (-33) | | (16) | (-16) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **60** | **0** | **54** | **0** | **173** | **51** | **51** | **88** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **60** | **0** | **54** | **0** | **173** | **51** | **51** | **88** | **0** | **477** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **60** | **0** | **54** | **0** | **2324** | **51** | **51** | **1453** | **0** | **3993** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 76 | 0 | 194 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2205** | **0** | **0** | **1400** | **0** | **3605** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **60** | **0** | **54** | **0** | **2378** | **51** | **51** | **1488** | **0** | **4082** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **1** | | **9** | | | | | **1354** | | | **2100** | | **3464** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **1** | **0** | **9** | **0** | **0** | **0** | **0** | **1354** | **0** | **0** | **2100** | **0** | **3464** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 65 | 0 | 107 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **1** | **0** | **9** | **0** | **0** | **0** | **0** | **1435** | **0** | **0** | **2215** | **0** | **3660** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 39.0% | 5.0% | 5.0% | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 10.0% | | 5.0% | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -5.0% | 5.0% | 5.0% | -5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 5.0% | | 5.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | 36.0% | 9.0% | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 36.0% | | 9.0% | | | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 115 | | 56 | | 397 | 71 | 52 | 394 | | 1085 |
| **Pass-by Trips** | | | | (17) | | (17) | | (-17) | (17) | (17) | (-17) | | 34 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | (22) | | (21) | | (-5) | (5) | (3) | (-22) | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | (8) | | (18) | | (-10) | | (18) | (-18) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **162** | **0** | **112** | **0** | **365** | **93** | **90** | **337** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **162** | **0** | **112** | **0** | **365** | **93** | **90** | **337** | **0** | **1159** |
| **2020 Projected Volumes** | **1** | **0** | **9** | **162** | **0** | **112** | **0** | **1800** | **93** | **90** | **2552** | **0** | **4819** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 78 | 0 | 0 | 121 | 0 | 200 |
| **2025 Base Volumes** | **1** | **0** | **10** | **0** | **0** | **0** | **0** | **1471** | **0** | **0** | **2271** | **0** | **3753** |
| **2025 Projected Volumes** | **1** | **0** | **10** | **162** | **0** | **112** | **0** | **1836** | **93** | **90** | **2608** | **0** | **4912** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **12** | | **68** | | | | | **1384** | | | **1335** | | **2799** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **12** | **0** | **68** | **0** | **0** | **0** | **0** | **1384** | **0** | **0** | **1335** | **0** | **2799** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 41 | 0 | 86 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **12** | **0** | **70** | **0** | **0** | **0** | **0** | **1499** | **0** | **0** | **1427** | **0** | **3008** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 39.0% | 5.0% | 5.0% | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | 10.0% | | 5.0% | | | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -8.0% | 8.0% | 8.0% | -8.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | 8.0% | | 8.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | 36.0% | 9.0% | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 36.0% | | 9.0% | | | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 135 | | 64 | | 605 | 91 | 78 | 433 | | 1406 |
| **Pass-by Trips** | | | | (31) | | (31) | | (-31) | (31) | (31) | (-31) | | 62 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | (2) | | (1) | | | | (13) | (-2) | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | (2) | | (19) | | (-19) | | (6) | (-6) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **170** | **0** | **115** | **0** | **555** | **122** | **128** | **394** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **170** | **0** | **115** | **0** | **555** | **122** | **128** | **394** | **0** | **1484** |
| **2020 Projected Volumes** | **12** | **0** | **70** | **170** | **0** | **115** | **0** | **2054** | **122** | **128** | **1821** | **0** | **4492** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 80 | 0 | 0 | 77 | 0 | 162 |
| **2025 Base Volumes** | **13** | **0** | **72** | **0** | **0** | **0** | **0** | **1536** | **0** | **0** | **1463** | **0** | **3084** |
| **2025 Projected Volumes** | **13** | **0** | **72** | **170** | **0** | **115** | **0** | **2091** | **122** | **128** | **1857** | **0** | **4568** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Cardinal O'Hara Main Driveway (W)
**Synchro Node:** 8 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **0** | | **46** | | **2104** | **54** | **64** | **1103** | | **3371** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **46** | **0** | **2104** | **54** | **64** | **1103** | **0** | **3371** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 65 | 2 | 2 | 34 | 0 | 104 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **47** | **0** | **2199** | **56** | **66** | **1148** | **0** | **3516** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 44.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 44.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 53.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 53.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 258 | | | 159 | | 417 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-14) | | (-19) | | (-16) | (5) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **-14** | **0** | **239** | **0** | **-16** | **164** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **-14** | **0** | **239** | **0** | **-16** | **164** | **0** | **373** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **33** | **0** | **2438** | **56** | **50** | **1312** | **0** | **3889** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 121 | 3 | 4 | 64 | 0 | 195 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **49** | **0** | **2255** | **57** | **68** | **1178** | **0** | **3607** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **35** | **0** | **2494** | **57** | **52** | **1342** | **0** | **3980** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **0** | | **25** | | **1290** | **3** | **70** | **2236** | | **3624** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **25** | **0** | **1290** | **3** | **70** | **2236** | **0** | **3624** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 40 | 0 | 2 | 69 | 0 | 112 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **1369** | **3** | **72** | **2355** | **0** | **3825** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 44.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 44.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 53.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 53.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 468 | | | 509 | | 977 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-8) | | (-10) | | (-18) | (8) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **-8** | **0** | **458** | **0** | **-18** | **517** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **-8** | **0** | **458** | **0** | **-18** | **517** | **0** | **949** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **18** | **0** | **1827** | **3** | **54** | **2872** | **0** | **4774** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 74 | 0 | 4 | 129 | 0 | 208 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **1403** | **3** | **74** | **2415** | **0** | **3921** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **18** | **0** | **1861** | **3** | **56** | **2932** | **0** | **4870** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **0** | | **25** | | **1387** | **5** | **24** | **1458** | | **2899** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **25** | **0** | **1387** | **5** | **24** | **1458** | **0** | **2899** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 43 | 0 | 1 | 45 | 0 | 90 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **1502** | **5** | **25** | **1554** | **0** | **3112** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 44.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 44.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 53.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 53.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 695 | | | 569 | | 1264 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-9) | | (-10) | | (-6) | (2) | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **-9** | **0** | **685** | **0** | **-6** | **571** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **-9** | **0** | **685** | **0** | **-6** | **571** | **0** | **1241** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **2187** | **5** | **19** | **2125** | **0** | **4353** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 80 | 0 | 1 | 84 | 0 | 166 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **26** | **0** | **1539** | **5** | **25** | **1593** | **0** | **3188** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **2224** | **5** | **19** | **2164** | **0** | **4429** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Springfield Road (W)
**Synchro Node:** 9 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | **761** | | **1178** | **0** | **300** | **762** | | **3001** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **761** | **0** | **1178** | **0** | **300** | **762** | **0** | **3001** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 37 | 0 | 9 | 24 | 0 | 94 |
| Marple Associates (260+ksf) | | | | | | 9 | | 14 | | 3 | 7 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | 3 | | 4 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **797** | **0** | **1233** | **0** | **312** | **794** | **0** | **3136** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | **ENTER =** | **50** **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | **EXIT =** | **49** **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 16.0% | | 28.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 16.0% | 28.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 15.0% | | 38.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 15.0% | 38.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 21.0% | | 29.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 21.0% | 29.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 95 | | 163 | | 55 | 103 | | 416 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-19) | | | | (5) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **76** | **0** | **163** | **0** | **60** | **103** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **76** | **0** | **163** | **0** | **60** | **103** | **0** | **402** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **873** | **0** | **1396** | **0** | **372** | **897** | **0** | **3538** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 68 | 0 | 17 | 44 | 0 | 173 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **817** | **0** | **1264** | **0** | **320** | **814** | **0** | **3215** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **893** | **0** | **1427** | **0** | **380** | **917** | **0** | **3617** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | **472** | | **946** | **6** | **679** | **1473** | | **3576** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **472** | **0** | **946** | **6** | **679** | **1473** | **0** | **3576** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 29 | 0 | 21 | 46 | 0 | 111 |
| Marple Associates (260+ksf) | | | | | | 12 | | 24 | | 13 | 29 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | 1 | | 2 | | 3 | 5 | | 11 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **500** | **0** | **1001** | **6** | **716** | **1553** | **0** | **3776** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | **ENTER =** | **52** **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | **EXIT =** | **51** **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 16.0% | | 28.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 16.0% | 28.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 15.0% | | 38.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 15.0% | 38.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 21.0% | | 29.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 21.0% | 29.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 168 | | 299 | | 185 | 323 | | 975 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-10) | | | | (8) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **158** | **0** | **299** | **0** | **193** | **323** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **158** | **0** | **299** | **0** | **193** | **323** | **0** | **973** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **658** | **0** | **1300** | **6** | **909** | **1876** | **0** | **4749** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 54 | 0 | 39 | 85 | 0 | 205 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **512** | **0** | **1026** | **6** | **734** | **1592** | **0** | **3870** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **670** | **0** | **1325** | **6** | **927** | **1915** | **0** | **4843** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | **437** | | **899** | **3** | **444** | **950** | | **2733** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **437** | **0** | **899** | **3** | **444** | **950** | **0** | **2733** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 28 | 0 | 14 | 29 | 0 | 85 |
| Marple Associates (260+ksf) | | | | | | 20 | | 42 | | 14 | 31 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | 3 | | 7 | | 2 | 4 | | 16 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **474** | **0** | **976** | **3** | **474** | **1014** | **0** | **2941** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | **ENTER =** | **37** **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | **EXIT =** | **33** **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 16.0% | | 28.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 16.0% | 28.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 15.0% | | 38.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 15.0% | 38.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 21.0% | | 29.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 21.0% | 29.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 252 | | 443 | | 206 | 363 | | 1264 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-10) | | | | (2) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **242** | **0** | **443** | **0** | **208** | **363** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **242** | **0** | **443** | **0** | **208** | **363** | **0** | **1256** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **716** | **0** | **1419** | **3** | **682** | **1377** | **0** | **4197** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 52 | 0 | 26 | 55 | 0 | 158 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **485** | **0** | **1000** | **3** | **486** | **1040** | **0** | **3014** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **727** | **0** | **1443** | **3** | **694** | **1403** | **0** | **4270** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**

| | |
|---|---|
| **Intersection:** | **Sproul Road (NS) & Old Marple Road (EW)** |
| **Synchro Node:** | **10** Adjacent intersections: West 0 East 0 North 0 South 0 |

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **103** | **72** | **37** | **210** | **231** | **1** | **164** | **1011** | **39** | **1** | **701** | **127** | **2697** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **103** | **72** | **37** | **210** | **231** | **1** | **164** | **1011** | **39** | **1** | **701** | **127** | **2697** |
| Base growth (0.51% compounded for 6 yrs) | 3 | 2 | 1 | 7 | 7 | 0 | 5 | 31 | 1 | 0 | 22 | 4 | 83 |
| Marple Associates (260+ksf) | | | | | | | | 14 | | | 7 | | 21 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 4 | | | 1 | | 5 |
| **2020 Base Volumes** | **106** | **74** | **38** | **217** | **238** | **1** | **169** | **1060** | **40** | **1** | **731** | **131** | **2806** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 5.0% | | | | | | | 23.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 23.0% | 5.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 4.0% | | | | | | | 34.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 34.0% | 4.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 5.0% | | | | | | | 24.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 24.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 29 | | | | | | | 134 | | | 88 | 16 | 267 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **29** | **0** | **0** | **0** | **0** | **0** | **0** | **134** | **0** | **0** | **88** | **16** | |
| Total Trip Distribution - Design Year | **29** | **0** | **0** | **0** | **0** | **0** | **0** | **134** | **0** | **0** | **88** | **16** | **267** |
| **2020 Projected Volumes** | **135** | **74** | **38** | **217** | **238** | **1** | **169** | **1194** | **40** | **1** | **819** | **147** | **3073** |
| Base growth (0.51% compounded for 11 yrs) | 6 | 4 | 2 | 12 | 13 | 0 | 9 | 58 | 2 | 0 | 40 | 7 | 153 |
| **2025 Base Volumes** | **109** | **76** | **39** | **222** | **244** | **1** | **173** | **1087** | **41** | **1** | **749** | **134** | **2876** |
| **2025 Projected Volumes** | **138** | **76** | **39** | **222** | **244** | **1** | **173** | **1221** | **41** | **1** | **837** | **150** | **3143** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **149** | **161** | **53** | **148** | **138** | **12** | **71** | **821** | **59** | **4** | **1108** | **142** | **2866** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **149** | **161** | **53** | **148** | **138** | **12** | **71** | **821** | **59** | **4** | **1108** | **142** | **2866** |
| Base growth (0.51% compounded for 6 yrs) | 5 | 5 | 2 | 5 | 4 | 0 | 2 | 25 | 2 | 0 | 34 | 4 | 88 |
| Marple Associates (260+ksf) | | | | | | | | 24 | | | 29 | | 53 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 2 | | | 5 | | 7 |
| **2020 Base Volumes** | **154** | **166** | **55** | **153** | **142** | **12** | **73** | **872** | **61** | **4** | **1176** | **146** | **3014** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 5.0% | | | | | | | 23.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 23.0% | 5.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 4.0% | | | | | | | 34.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 34.0% | 4.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 5.0% | | | | | | | 24.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 24.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 52 | | | | | | | 247 | | | 265 | 58 | 622 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **52** | **0** | **0** | **0** | **0** | **0** | **0** | **247** | **0** | **0** | **265** | **58** | |
| Total Trip Distribution - Design Year | **52** | **0** | **0** | **0** | **0** | **0** | **0** | **247** | **0** | **0** | **265** | **58** | **622** |
| **2020 Projected Volumes** | **206** | **166** | **55** | **153** | **142** | **12** | **73** | **1119** | **61** | **4** | **1441** | **204** | **3636** |
| Base growth (0.51% compounded for 11 yrs) | 9 | 9 | 3 | 9 | 8 | 1 | 4 | 47 | 3 | 0 | 64 | 8 | 165 |
| **2025 Base Volumes** | **158** | **170** | **56** | **157** | **146** | **13** | **75** | **894** | **62** | **4** | **1206** | **150** | **3091** |
| **2025 Projected Volumes** | **210** | **170** | **56** | **157** | **146** | **13** | **75** | **1141** | **62** | **4** | **1471** | **208** | **3713** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **158** | **100** | **53** | **174** | **135** | **10** | **65** | **1173** | **69** | **3** | **884** | **109** | **2933** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **158** | **100** | **53** | **174** | **135** | **10** | **65** | **1173** | **69** | **3** | **884** | **109** | **2933** |
| Base growth (0.51% compounded for 6 yrs) | 5 | 3 | 2 | 5 | 4 | 0 | 2 | 36 | 2 | 0 | 27 | 3 | 89 |
| Marple Associates (260+ksf) | | | | | | | | 42 | | | 31 | | 73 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 4 | | 11 |
| **2020 Base Volumes** | **163** | **103** | **55** | **179** | **139** | **10** | **67** | **1258** | **71** | **3** | **946** | **112** | **3106** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 5.0% | | | | | | | 23.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 23.0% | 5.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 4.0% | | | | | | | 34.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 34.0% | 4.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 5.0% | | | | | | | 24.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 24.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 78 | | | | | | | 366 | | | 299 | 64 | 807 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **78** | **0** | **0** | **0** | **0** | **0** | **0** | **366** | **0** | **0** | **299** | **64** | |
| Total Trip Distribution - Design Year | **78** | **0** | **0** | **0** | **0** | **0** | **0** | **366** | **0** | **0** | **299** | **64** | **807** |
| **2020 Projected Volumes** | **241** | **103** | **55** | **179** | **139** | **10** | **67** | **1624** | **71** | **3** | **1245** | **176** | **3913** |
| Base growth (0.51% compounded for 11 yrs) | 9 | 6 | 3 | 10 | 8 | 1 | 4 | 68 | 4 | 0 | 51 | 6 | 170 |
| **2025 Base Volumes** | **167** | **106** | **56** | **184** | **143** | **11** | **69** | **1290** | **73** | **3** | **970** | **115** | **3187** |
| **2025 Projected Volumes** | **245** | **106** | **56** | **184** | **143** | **11** | **69** | **1656** | **73** | **3** | **1269** | **179** | **3994** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & State Road (EW)
**Synchro Node:** 11 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **251** | **15** | **303** | **160** | **70** | **36** | **463** | **1063** | **314** | **5** | **528** | **373** | **3581** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **251** | **15** | **303** | **160** | **70** | **36** | **463** | **1063** | **314** | **5** | **528** | **373** | **3581** |
| Base growth (0.51% compounded for 6 yrs) | 8 | 0 | 9 | 5 | 2 | 1 | 14 | 33 | 10 | 0 | 16 | 12 | 110 |
| Marple Associates (260+ksf) | 4 | | | | | | | 10 | | | 4 | 3 | 21 |
| Crozer Cancer Center (58.599 ksf medical office) | 1 | | | | | | | 3 | | | 1 | | 5 |
| **2020 Base Volumes** | **264** | **15** | **312** | **165** | **72** | **37** | **477** | **1109** | **324** | **5** | **549** | **388** | **3717** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = 3 | | ENTER = | 50 (83) |
| EXIT = | 198 | (55) | EXIT = 89 | | EXIT = | 49 (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 12.0% | | | | | 4.0% | | 7.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 11.0% | | | | | 4.0% | | 19.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 19.0% | 11.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 12.0% | | | | | 5.0% | | 7.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 69 | | | | | 24 | | 42 | | 16 | 34 | 40 | 225 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **69** | **0** | **0** | **0** | **0** | **24** | **0** | **42** | **0** | **16** | **34** | **40** | |
| Total Trip Distribution - Design Year | **69** | **0** | **0** | **0** | **0** | **24** | **0** | **42** | **0** | **16** | **34** | **40** | **225** |
| **2020 Projected Volumes** | **333** | **15** | **312** | **165** | **72** | **61** | **477** | **1151** | **324** | **21** | **583** | **428** | **3942** |
| Base growth (0.51% compounded for 11 yrs) | 14 | 1 | 17 | 9 | 4 | 2 | 27 | 61 | 18 | 0 | 30 | 21 | 204 |
| **2025 Base Volumes** | **270** | **16** | **320** | **169** | **74** | **38** | **490** | **1137** | **332** | **5** | **563** | **397** | **3811** |
| **2025 Projected Volumes** | **339** | **16** | **320** | **169** | **74** | **62** | **490** | **1179** | **332** | **21** | **597** | **437** | **4036** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **285** | **83** | **711** | **304** | **151** | **28** | **307** | **644** | **308** | **35** | **975** | **377** | **4208** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **285** | **83** | **711** | **304** | **151** | **28** | **307** | **644** | **308** | **35** | **975** | **377** | **4208** |
| Base growth (0.51% compounded for 6 yrs) | 9 | 3 | 22 | 9 | 5 | 1 | 10 | 20 | 10 | 1 | 30 | 12 | 132 |
| Marple Associates (260+ksf) | 7 | | | | | | | 17 | | | 21 | 8 | 53 |
| Crozer Cancer Center (58.599 ksf medical office) | 1 | | | | | | | 1 | | | 4 | 1 | 7 |
| **2020 Base Volumes** | **302** | **86** | **733** | **313** | **156** | **29** | **317** | **682** | **318** | **36** | **1030** | **398** | **4400** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = 69 | | ENTER = | 52 (101) |
| EXIT = | 1070 | (347) | EXIT = 22 | | EXIT = | 51 (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 12.0% | | | | | 4.0% | | 7.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 11.0% | | | | | 4.0% | | 19.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 19.0% | 11.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 12.0% | | | | | 5.0% | | 7.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 124 | | | | | 43 | | 81 | | 58 | 83 | 136 | 525 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **124** | **0** | **0** | **0** | **0** | **43** | **0** | **81** | **0** | **58** | **83** | **136** | |
| Total Trip Distribution - Design Year | **124** | **0** | **0** | **0** | **0** | **43** | **0** | **81** | **0** | **58** | **83** | **136** | **525** |
| **2020 Projected Volumes** | **426** | **86** | **733** | **313** | **156** | **72** | **317** | **763** | **318** | **94** | **1113** | **534** | **4925** |
| Base growth (0.51% compounded for 11 yrs) | 16 | 5 | 41 | 18 | 9 | 2 | 18 | 37 | 18 | 2 | 56 | 22 | 244 |
| **2025 Base Volumes** | **309** | **88** | **752** | **322** | **160** | **30** | **325** | **699** | **326** | **37** | **1056** | **408** | **4512** |
| **2025 Projected Volumes** | **433** | **88** | **752** | **322** | **160** | **73** | **325** | **780** | **326** | **95** | **1139** | **544** | **5037** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **452** | **57** | **453** | **268** | **239** | **50** | **381** | **839** | **313** | **28** | **684** | **425** | **4189** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **452** | **57** | **453** | **268** | **239** | **50** | **381** | **839** | **313** | **28** | **684** | **425** | **4189** |
| Base growth (0.51% compounded for 6 yrs) | 14 | 2 | 14 | 8 | 7 | 2 | 12 | 26 | 10 | 1 | 21 | 13 | 130 |
| Marple Associates (260+ksf) | 14 | | | | | | | 28 | | | 19 | 12 | 73 |
| Crozer Cancer Center (58.599 ksf medical office) | 2 | | | | | | | 5 | | | 2 | 2 | 11 |
| **2020 Base Volumes** | **482** | **59** | **467** | **276** | **246** | **52** | **393** | **898** | **323** | **29** | **726** | **452** | **4403** |

| Non-Residential | | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = 46 | | ENTER = | 37 (45) |
| EXIT = | 1204 | (391) | EXIT = 41 | | EXIT = | 33 (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 12.0% | | | | | 4.0% | | 7.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 11.0% | | | | | 4.0% | | 19.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 19.0% | 11.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 12.0% | | | | | 5.0% | | 7.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 5.0% | 7.0% | 12.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 187 | | | | | 63 | | 116 | | 64 | 94 | 153 | 677 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **187** | **0** | **0** | **0** | **0** | **63** | **0** | **116** | **0** | **64** | **94** | **153** | |
| Total Trip Distribution - Design Year | **187** | **0** | **0** | **0** | **0** | **63** | **0** | **116** | **0** | **64** | **94** | **153** | **677** |
| **2020 Projected Volumes** | **669** | **59** | **467** | **276** | **246** | **115** | **393** | **1014** | **323** | **93** | **820** | **605** | **5080** |
| Base growth (0.51% compounded for 11 yrs) | 26 | 3 | 26 | 15 | 14 | 3 | 22 | 48 | 18 | 2 | 39 | 24 | 240 |
| **2025 Base Volumes** | **494** | **60** | **479** | **283** | **253** | **53** | **403** | **920** | **331** | **30** | **744** | **463** | **4513** |
| **2025 Projected Volumes** | **681** | **60** | **479** | **283** | **253** | **116** | **403** | **1036** | **331** | **94** | **838** | **616** | **5190** |

**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** State Road (EW) & Springfield Road (NS)
**Synchro Node:** 12 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **206** | **978** | **294** | **12** | **1153** | **121** | **465** | **479** | **28** | **97** | **270** | **75** | **4178** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **206** | **978** | **294** | **12** | **1153** | **121** | **465** | **479** | **28** | **97** | **270** | **75** | **4178** |
| Base growth (0.51% compounded for 6 yrs) | 6 | 30 | 9 | 0 | 36 | 4 | 14 | 15 | 1 | 3 | 8 | 2 | 128 |
| Marple Associates (260+ksf) | | | | | | 2 | | 7 | | 1 | 2 | | 12 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | 1 | | 2 | | | | | 3 |
| **2020 Base Volumes** | **212** | **1008** | **303** | **12** | **1189** | **128** | **479** | **503** | **29** | **101** | **280** | **77** | **4321** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 8.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 8.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 11.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 11.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 5.0% | 5.0% | | 8.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 5.0% | | | | | | | | 5.0% | 8.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 14 | | | 24 | 24 | | 46 | | 14 | 30 | | 152 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **14** | **0** | **0** | **24** | **24** | **0** | **46** | **0** | **14** | **30** | **0** | |
| Total Trip Distribution - Design Year | **0** | **14** | **0** | **0** | **24** | **24** | **0** | **46** | **0** | **14** | **30** | **0** | **152** |
| **2020 Projected Volumes** | **212** | **1022** | **303** | **12** | **1213** | **152** | **479** | **549** | **29** | **115** | **310** | **77** | **4473** |
| Base growth (0.51% compounded for 11 yrs) | 12 | 56 | 17 | 1 | 66 | 7 | 27 | 28 | 2 | 6 | 16 | 4 | 242 |
| **2025 Base Volumes** | **218** | **1034** | **311** | **13** | **1219** | **131** | **492** | **516** | **30** | **104** | **288** | **79** | **4435** |
| **2025 Projected Volumes** | **218** | **1048** | **311** | **13** | **1243** | **155** | **492** | **562** | **30** | **118** | **318** | **79** | **4587** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **176** | **1335** | **513** | **36** | **1143** | **72** | **348** | **337** | **41** | **215** | **371** | **59** | **4646** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **176** | **1335** | **513** | **36** | **1143** | **72** | **348** | **337** | **41** | **215** | **371** | **59** | **4646** |
| Base growth (0.51% compounded for 6 yrs) | 5 | 41 | 16 | 1 | 35 | 2 | 11 | 10 | 1 | 7 | 12 | 2 | 143 |
| Marple Associates (260+ksf) | | | | | | 2 | | 10 | | 5 | 8 | | 25 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 1 | | 1 | 2 | | 4 |
| **2020 Base Volumes** | **181** | **1376** | **529** | **37** | **1178** | **76** | **359** | **358** | **42** | **228** | **393** | **61** | **4818** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 8.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 8.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 11.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 11.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 5.0% | 5.0% | | 8.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 5.0% | | | | | | | | 5.0% | 8.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 47 | | | 43 | 43 | | 86 | | 47 | 92 | | 358 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **47** | **0** | **0** | **43** | **43** | **0** | **86** | **0** | **47** | **92** | **0** | |
| Total Trip Distribution - Design Year | **0** | **47** | **0** | **0** | **43** | **43** | **0** | **86** | **0** | **47** | **92** | **0** | **358** |
| **2020 Projected Volumes** | **181** | **1423** | **529** | **37** | **1221** | **119** | **359** | **444** | **42** | **275** | **485** | **61** | **5176** |
| Base growth (0.51% compounded for 11 yrs) | 10 | 77 | 30 | 2 | 66 | 4 | 20 | 19 | 2 | 12 | 21 | 3 | 266 |
| **2025 Base Volumes** | **186** | **1412** | **543** | **38** | **1209** | **78** | **368** | **367** | **43** | **233** | **402** | **62** | **4941** |
| **2025 Projected Volumes** | **186** | **1459** | **543** | **38** | **1252** | **121** | **368** | **453** | **43** | **280** | **494** | **62** | **5299** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **226** | **1366** | **446** | **40** | **1241** | **123** | **380** | **331** | **43** | **148** | **304** | **37** | **4685** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **226** | **1366** | **446** | **40** | **1241** | **123** | **380** | **331** | **43** | **148** | **304** | **37** | **4685** |
| Base growth (0.51% compounded for 6 yrs) | 7 | 42 | 14 | 1 | 38 | 4 | 12 | 10 | 1 | 5 | 9 | 1 | 144 |
| Marple Associates (260+ksf) | | | | | | 5 | | 15 | | 5 | 9 | | 34 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | 1 | | 2 | | 1 | 1 | | 5 |
| **2020 Base Volumes** | **233** | **1408** | **460** | **41** | **1279** | **133** | **392** | **358** | **44** | **159** | **323** | **38** | **4868** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 8.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 8.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | 4.0% | | 11.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | 4.0% | 11.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 5.0% | 5.0% | | 8.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 5.0% | | | | | | | | 5.0% | 8.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 52 | | | 63 | 63 | | 126 | | 52 | 104 | | 460 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **52** | **0** | **0** | **63** | **63** | **0** | **126** | **0** | **52** | **104** | **0** | |
| Total Trip Distribution - Design Year | **0** | **52** | **0** | **0** | **63** | **63** | **0** | **126** | **0** | **52** | **104** | **0** | **460** |
| **2020 Projected Volumes** | **233** | **1460** | **460** | **41** | **1342** | **196** | **392** | **484** | **44** | **211** | **427** | **38** | **5328** |
| Base growth (0.51% compounded for 11 yrs) | 13 | 79 | 26 | 2 | 71 | 7 | 22 | 19 | 2 | 9 | 18 | 2 | 270 |
| **2025 Base Volumes** | **239** | **1445** | **472** | **42** | **1312** | **136** | **402** | **367** | **45** | **163** | **332** | **39** | **4994** |
| **2025 Projected Volumes** | **239** | **1497** | **472** | **42** | **1375** | **199** | **402** | **493** | **45** | **215** | **436** | **39** | **5454** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Springfield Road (NS) & Old Marple Road (E )
**Synchro Node:** 13 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **42** | | **47** | | | | **57** | **727** | | | **430** | **397** | **1700** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **42** | **0** | **47** | **0** | **0** | **0** | **57** | **727** | **0** | **0** | **430** | **397** | **1700** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 23 | 0 | 0 | 13 | 12 | 52 |
| Marple Associates (260+ksf) | | | | | | | | 9 | | | 3 | | 12 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | | | 3 |
| **2020 Base Volumes** | **43** | **0** | **48** | **0** | **0** | **0** | **59** | **762** | **0** | **0** | **446** | **409** | **1767** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 70 | | | 43 | | 113 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **70** | **0** | **0** | **43** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **70** | **0** | **0** | **43** | **0** | **113** |
| **2020 Projected Volumes** | **43** | **0** | **48** | **0** | **0** | **0** | **59** | **832** | **0** | **0** | **489** | **409** | **1880** |
| Base growth (0.51% compounded for 11 yrs) | 2 | 0 | 3 | 0 | 0 | 0 | 3 | 42 | 0 | 0 | 25 | 23 | 98 |
| **2025 Base Volumes** | **44** | **0** | **50** | **0** | **0** | **0** | **60** | **781** | **0** | **0** | **458** | **420** | **1813** |
| **2025 Projected Volumes** | **44** | **0** | **50** | **0** | **0** | **0** | **60** | **851** | **0** | **0** | **501** | **420** | **1926** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **117** | | **100** | | | | **25** | **538** | | | **615** | **268** | **1663** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **117** | **0** | **100** | **0** | **0** | **0** | **25** | **538** | **0** | **0** | **615** | **268** | **1663** |
| Base growth (0.51% compounded for 6 yrs) | 4 | 0 | 3 | 0 | 0 | 0 | 1 | 17 | 0 | 0 | 19 | 8 | 52 |
| Marple Associates (260+ksf) | | | | | | | | 12 | | | 13 | | 25 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 1 | | | 3 | | 4 |
| **2020 Base Volumes** | **121** | **0** | **103** | **0** | **0** | **0** | **26** | **568** | **0** | **0** | **650** | **276** | **1744** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 127 | | | 138 | | 265 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **127** | **0** | **0** | **138** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **127** | **0** | **0** | **138** | **0** | **265** |
| **2020 Projected Volumes** | **121** | **0** | **103** | **0** | **0** | **0** | **26** | **695** | **0** | **0** | **788** | **276** | **2009** |
| Base growth (0.51% compounded for 11 yrs) | 7 | 0 | 6 | 0 | 0 | 0 | 1 | 31 | 0 | 0 | 35 | 15 | 95 |
| **2025 Base Volumes** | **124** | **0** | **106** | **0** | **0** | **0** | **26** | **582** | **0** | **0** | **666** | **283** | **1787** |
| **2025 Projected Volumes** | **124** | **0** | **106** | **0** | **0** | **0** | **26** | **709** | **0** | **0** | **804** | **283** | **2052** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **76** | | **104** | | | | **72** | **578** | | | **432** | **252** | **1514** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **76** | **0** | **104** | **0** | **0** | **0** | **72** | **578** | **0** | **0** | **432** | **252** | **1514** |
| Base growth (0.51% compounded for 6 yrs) | 2 | 0 | 3 | 0 | 0 | 0 | 2 | 18 | 0 | 0 | 13 | 8 | 46 |
| Marple Associates (260+ksf) | | | | | | | | 20 | | | 14 | | 34 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 2 | | 5 |
| **2020 Base Volumes** | **78** | **0** | **107** | **0** | **0** | **0** | **74** | **619** | **0** | **0** | **461** | **260** | **1599** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 190 | | | 154 | | 344 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **190** | **0** | **0** | **154** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **190** | **0** | **0** | **154** | **0** | **344** |
| **2020 Projected Volumes** | **78** | **0** | **107** | **0** | **0** | **0** | **74** | **809** | **0** | **0** | **615** | **260** | **1943** |
| Base growth (0.51% compounded for 11 yrs) | 4 | 0 | 6 | 0 | 0 | 0 | 4 | 33 | 0 | 0 | 25 | 15 | 87 |
| **2025 Base Volumes** | **80** | **0** | **110** | **0** | **0** | **0** | **76** | **634** | **0** | **0** | **473** | **267** | **1640** |
| **2025 Projected Volumes** | **80** | **0** | **110** | **0** | **0** | **0** | **76** | **824** | **0** | **0** | **627** | **267** | **1984** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Springfield Road (NS) & Eagle Road (W)
**Synchro Node:** 14 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **559** | | **237** | | **535** | **267** | **21** | **293** | | **1912** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **559** | **0** | **237** | **0** | **535** | **267** | **21** | **293** | **0** | **1912** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 17 | 0 | 7 | 0 | 17 | 8 | 1 | 9 | 0 | 59 |
| Marple Associates (260+ksf) | | | | | | | | 9 | | | 3 | | 12 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | | | 3 |
| **2020 Base Volumes** | **0** | **0** | **0** | **576** | **0** | **244** | **0** | **564** | **275** | **22** | **305** | **0** | **1986** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 4.0% | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 8.0% | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 8.0% | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 25 | | 70 | | 12 | 43 | | 150 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-19) | | | | (5) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **70** | **0** | **17** | **43** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **70** | **0** | **17** | **43** | **0** | **136** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **576** | **0** | **250** | **0** | **634** | **275** | **39** | **348** | **0** | **2122** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 32 | 0 | 14 | 0 | 31 | 15 | 1 | 17 | 0 | 110 |
| **2025 Base Volumes** | **0** | **0** | **0** | **591** | **0** | **251** | **0** | **578** | **282** | **22** | **313** | **0** | **2037** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **591** | **0** | **257** | **0** | **648** | **282** | **39** | **356** | **0** | **2173** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **369** | | **54** | | **316** | **358** | **153** | **441** | | **1691** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **369** | **0** | **54** | **0** | **316** | **358** | **153** | **441** | **0** | **1691** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 10 | 11 | 5 | 14 | 0 | 53 |
| Marple Associates (260+ksf) | | | | | | | | 12 | | | 13 | | 25 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 1 | | | 3 | | 4 |
| **2020 Base Volumes** | **0** | **0** | **0** | **380** | **0** | **56** | **0** | **339** | **369** | **158** | **471** | **0** | **1773** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 4.0% | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 8.0% | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 8.0% | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 41 | | 127 | | 47 | 138 | | 353 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-10) | | | | (8) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **31** | **0** | **127** | **0** | **55** | **138** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **31** | **0** | **127** | **0** | **55** | **138** | **0** | **351** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **380** | **0** | **87** | **0** | **466** | **369** | **213** | **609** | **0** | **2124** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 21 | 0 | 3 | 0 | 18 | 21 | 9 | 25 | 0 | 97 |
| **2025 Base Volumes** | **0** | **0** | **0** | **390** | **0** | **57** | **0** | **347** | **379** | **162** | **482** | **0** | **1817** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **390** | **0** | **88** | **0** | **474** | **379** | **217** | **620** | **0** | **2168** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **353** | | **74** | | **448** | **190** | **48** | **342** | | **1455** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **353** | **0** | **74** | **0** | **448** | **190** | **48** | **342** | **0** | **1455** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 14 | 6 | 1 | 11 | 0 | 45 |
| Marple Associates (260+ksf) | | | | | | | | 20 | | | 14 | | 34 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 2 | | 5 |
| **2020 Base Volumes** | **0** | **0** | **0** | **364** | **0** | **76** | **0** | **485** | **196** | **49** | **369** | **0** | **1539** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | 4.0% | | 12.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 4.0% | 12.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 15.0% | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | 15.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 8.0% | | 13.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 8.0% | 13.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | 62 | | 190 | | 51 | 154 | | 457 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | (-10) | | | | (2) | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **52** | **0** | **190** | **0** | **53** | **154** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **52** | **0** | **190** | **0** | **53** | **154** | **0** | **449** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **364** | **0** | **128** | **0** | **675** | **196** | **102** | **523** | **0** | **1988** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 20 | 0 | 4 | 0 | 26 | 11 | 3 | 20 | 0 | 84 |
| **2025 Base Volumes** | **0** | **0** | **0** | **373** | **0** | **78** | **0** | **497** | **201** | **51** | **378** | **0** | **1578** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **373** | **0** | **130** | **0** | **687** | **201** | **104** | **532** | **0** | **2027** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Lawrence Road (EW) & Parkway Avenue (NS)
**Synchro Node:** 15 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **1** | **705** | **103** | **135** | **485** | **5** | **386** | **15** | **358** | **8** | **10** | **7** | **2218** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **1** | **705** | **103** | **135** | **485** | **5** | **386** | **15** | **358** | **8** | **10** | **7** | **2218** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 22 | 3 | 4 | 15 | 0 | 12 | 0 | 11 | 0 | 0 | 0 | 67 |
| Marple Associates (260+ksf) | | 47 | | | 33 | | | | | | | | 80 |
| Crozer Cancer Center (58.599 ksf medical office) | | 14 | | | 4 | | | | | | | | 18 |
| **2020 Base Volumes** | **1** | **788** | **106** | **139** | **537** | **5** | **398** | **15** | **369** | **8** | **10** | **7** | **2383** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 5 | 25 | | 18 | 57 | | | | 17 | | | 11 | 133 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **5** | **25** | **0** | **18** | **57** | **0** | **0** | **0** | **17** | **0** | **0** | **11** | |
| Total Trip Distribution - Design Year | **5** | **25** | **0** | **18** | **57** | **0** | **0** | **0** | **17** | **0** | **0** | **11** | **133** |
| **2020 Projected Volumes** | **6** | **813** | **106** | **157** | **594** | **5** | **398** | **15** | **386** | **8** | **10** | **18** | **2516** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 41 | 6 | 8 | 28 | 0 | 22 | 1 | 21 | 0 | 1 | 0 | 128 |
| **2025 Base Volumes** | **1** | **807** | **109** | **143** | **550** | **5** | **408** | **16** | **379** | **8** | **11** | **7** | **2444** |
| **2025 Projected Volumes** | **6** | **832** | **109** | **161** | **607** | **5** | **408** | **16** | **396** | **8** | **11** | **18** | **2577** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **7** | **458** | **223** | **359** | **626** | **5** | **255** | **22** | **224** | **6** | **38** | **13** | **2236** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **7** | **458** | **223** | **359** | **626** | **5** | **255** | **22** | **224** | **6** | **38** | **13** | **2236** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 14 | 7 | 11 | 19 | 0 | 8 | 1 | 7 | 0 | 1 | 0 | 68 |
| Marple Associates (260+ksf) | | 85 | | | 92 | | | | | | | | 177 |
| Crozer Cancer Center (58.599 ksf medical office) | | 7 | | | 18 | | | | | | | | 25 |
| **2020 Base Volumes** | **7** | **564** | **230** | **370** | **755** | **5** | **263** | **23** | **231** | **6** | **39** | **13** | **2506** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 22 | 112 | | 38 | 97 | | | | 36 | | | 19 | 324 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **22** | **112** | **0** | **38** | **97** | **0** | **0** | **0** | **36** | **0** | **0** | **19** | |
| Total Trip Distribution - Design Year | **22** | **112** | **0** | **38** | **97** | **0** | **0** | **0** | **36** | **0** | **0** | **19** | **324** |
| **2020 Projected Volumes** | **29** | **676** | **230** | **408** | **852** | **5** | **263** | **23** | **267** | **6** | **39** | **32** | **2830** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 26 | 13 | 21 | 36 | 0 | 15 | 1 | 13 | 0 | 2 | 1 | 128 |
| **2025 Base Volumes** | **7** | **576** | **236** | **380** | **772** | **5** | **270** | **23** | **237** | **6** | **40** | **14** | **2566** |
| **2025 Projected Volumes** | **29** | **688** | **236** | **418** | **869** | **5** | **270** | **23** | **273** | **6** | **40** | **33** | **2890** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **4** | **480** | **130** | **178** | **543** | **9** | **203** | **25** | **291** | **6** | **14** | **13** | **1896** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **4** | **480** | **130** | **178** | **543** | **9** | **203** | **25** | **291** | **6** | **14** | **13** | **1896** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 15 | 4 | 6 | 17 | 0 | 6 | 1 | 9 | 0 | 0 | 0 | 58 |
| Marple Associates (260+ksf) | | 111 | | | 102 | | | | | | | | 213 |
| Crozer Cancer Center (58.599 ksf medical office) | | 18 | | | 14 | | | | | | | | 32 |
| **2020 Base Volumes** | **4** | **624** | **134** | **184** | **676** | **9** | **209** | **26** | **300** | **6** | **14** | **13** | **2199** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | 3.0% | 10.0% | | | | | | | 2.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 2.0% | 10.0% | | | | | | | 3.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 25 | 123 | | 50 | 152 | | | | 42 | | | 31 | 423 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **25** | **123** | **0** | **50** | **152** | **0** | **0** | **0** | **42** | **0** | **0** | **31** | |
| Total Trip Distribution - Design Year | **25** | **123** | **0** | **50** | **152** | **0** | **0** | **0** | **42** | **0** | **0** | **31** | **423** |
| **2020 Projected Volumes** | **29** | **747** | **134** | **234** | **828** | **9** | **209** | **26** | **342** | **6** | **14** | **44** | **2622** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 28 | 7 | 10 | 31 | 1 | 12 | 1 | 17 | 0 | 1 | 1 | 109 |
| **2025 Base Volumes** | **4** | **637** | **137** | **188** | **690** | **10** | **215** | **26** | **308** | **6** | **15** | **14** | **2250** |
| **2025 Projected Volumes** | **29** | **760** | **137** | **238** | **842** | **10** | **215** | **26** | **350** | **6** | **15** | **45** | **2673** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Road (E )/Redhill Drive (W) & Reed Street (N)/Parkway Avenue (S)
**Synchro Node:** 16 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **57** | **53** | **250** | **30** | **84** | **4** | **244** | **684** | **118** | **4** | **184** | **31** | **1743** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **57** | **53** | **250** | **30** | **84** | **4** | **244** | **684** | **118** | **4** | **184** | **31** | **1743** |
| Base growth (0.51% compounded for 6 yrs) | 2 | 2 | 8 | 1 | 3 | 0 | 8 | 21 | 4 | 0 | 6 | 1 | 56 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **59** | **55** | **258** | **31** | **87** | **4** | **252** | **705** | **122** | **4** | **190** | **32** | **1799** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 4.0% | | | | 1.0% | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 4.0% | | | | | 1.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | | | | 5.0% | 6.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 6.0% | | 9.0% | | | | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 2.0% | | 7.0% | | | | | 3.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 3.0% | 2.0% | 7.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 10 | 5 | 19 | | 11 | | 25 | 6 | | | 5 | 12 | 93 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **10** | **5** | **19** | **0** | **11** | **0** | **25** | **6** | **0** | **0** | **5** | **12** | |
| Total Trip Distribution - Design Year | **10** | **5** | **19** | **0** | **11** | **0** | **25** | **6** | **0** | **0** | **5** | **12** | **93** |
| **2020 Projected Volumes** | **69** | **60** | **277** | **31** | **98** | **4** | **277** | **711** | **122** | **4** | **195** | **44** | **1892** |
| Base growth (0.51% compounded for 11 yrs) | 3 | 3 | 14 | 2 | 5 | 0 | 14 | 39 | 7 | 0 | 11 | 2 | 100 |
| **2025 Base Volumes** | **60** | **56** | **264** | **32** | **89** | **4** | **258** | **723** | **125** | **4** | **195** | **33** | **1843** |
| **2025 Projected Volumes** | **70** | **61** | **283** | **32** | **100** | **4** | **283** | **729** | **125** | **4** | **200** | **45** | **1936** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **36** | **116** | **297** | **36** | **42** | **10** | **314** | **403** | **62** | **5** | **588** | **43** | **1952** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **36** | **116** | **297** | **36** | **42** | **10** | **314** | **403** | **62** | **5** | **588** | **43** | **1952** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 4 | 9 | 1 | 1 | 0 | 10 | 12 | 2 | 0 | 18 | 1 | 59 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **37** | **120** | **306** | **37** | **43** | **10** | **324** | **415** | **64** | **5** | **606** | **44** | **2011** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 4.0% | | | | 1.0% | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 4.0% | | | | | 1.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | | | | 5.0% | 6.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 6.0% | | 9.0% | | | | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 2.0% | | 7.0% | | | | | 3.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 3.0% | 2.0% | 7.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 24 | 22 | 49 | | 19 | | 47 | 12 | | | 12 | 24 | 209 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **24** | **22** | **49** | **0** | **19** | **0** | **47** | **12** | **0** | **0** | **12** | **24** | |
| Total Trip Distribution - Design Year | **24** | **22** | **49** | **0** | **19** | **0** | **47** | **12** | **0** | **0** | **12** | **24** | **209** |
| **2020 Projected Volumes** | **61** | **142** | **355** | **37** | **62** | **10** | **371** | **427** | **64** | **5** | **618** | **68** | **2220** |
| Base growth (0.51% compounded for 11 yrs) | 2 | 7 | 17 | 2 | 2 | 1 | 18 | 23 | 4 | 0 | 34 | 2 | 112 |
| **2025 Base Volumes** | **38** | **123** | **314** | **38** | **44** | **11** | **332** | **426** | **66** | **5** | **622** | **45** | **2064** |
| **2025 Projected Volumes** | **62** | **145** | **363** | **38** | **63** | **11** | **379** | **438** | **66** | **5** | **634** | **69** | **2273** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **104** | **78** | **237** | **22** | **80** | **3** | **237** | **332** | **27** | **4** | **284** | **54** | **1462** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **104** | **78** | **237** | **22** | **80** | **3** | **237** | **332** | **27** | **4** | **284** | **54** | **1462** |
| Base growth (0.51% compounded for 6 yrs) | 3 | 2 | 7 | 1 | 2 | 0 | 7 | 10 | 1 | 0 | 9 | 2 | 44 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **107** | **80** | **244** | **23** | **82** | **3** | **244** | **342** | **28** | **4** | **293** | **56** | **1506** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 4.0% | | | | 1.0% | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 4.0% | | | | | 1.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | | | | 5.0% | 6.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 6.0% | | 9.0% | | | | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 2.0% | | 7.0% | | | | | 3.0% | |
| CONV MARKET - Trip Assignment % - New Exit | 3.0% | 2.0% | 7.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 27 | 25 | 54 | | 31 | | 66 | 14 | | | 17 | 34 | 268 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **27** | **25** | **54** | **0** | **31** | **0** | **66** | **14** | **0** | **0** | **17** | **34** | |
| Total Trip Distribution - Design Year | **27** | **25** | **54** | **0** | **31** | **0** | **66** | **14** | **0** | **0** | **17** | **34** | **268** |
| **2020 Projected Volumes** | **134** | **105** | **298** | **23** | **113** | **3** | **310** | **356** | **28** | **4** | **310** | **90** | **1774** |
| Base growth (0.51% compounded for 11 yrs) | 6 | 4 | 14 | 1 | 5 | 0 | 14 | 19 | 2 | 0 | 16 | 3 | 84 |
| **2025 Base Volumes** | **110** | **82** | **251** | **23** | **85** | **3** | **251** | **351** | **29** | **4** | **300** | **57** | **1546** |
| **2025 Projected Volumes** | **137** | **107** | **305** | **23** | **116** | **3** | **317** | **365** | **29** | **4** | **317** | **91** | **1814** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Road (EW) & Shopping Center Driveway (S)/Proposed RIRO Driveway (N)
**Synchro Node:** 17 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **122** | **364** | | | **309** | **55** | | | | **25** | | **60** | **935** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **122** | **364** | **0** | **0** | **309** | **55** | **0** | **0** | **0** | **25** | **0** | **60** | **935** |
| Base growth (0.51% compounded for 6 yrs) | 4 | 11 | 0 | 0 | 10 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 30 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **126** | **375** | **0** | **0** | **319** | **57** | **0** | **0** | **0** | **26** | **0** | **62** | **965** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 9.0% | 2.0% | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | 1.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | 51.0% | | | | 8.0% | 4.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 12.0% | | 11.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | 45.0% | -9.0% | | | -2.0% | 2.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | 9.0% | | 6.0% | |
| **New Trips** | 26 | 48 | 10 | | 49 | 2 | | | 2 | 6 | | 5 | 148 |
| **Pass-by Trips** | (37) | (-7) | | | (-2) | (2) | | | | (7) | | (5) | 42 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **63** | **41** | **10** | **0** | **47** | **4** | **0** | **0** | **2** | **13** | **0** | **10** | |
| Total Trip Distribution - Design Year | **63** | **41** | **10** | **0** | **47** | **4** | **0** | **0** | **2** | **13** | **0** | **10** | **190** |
| **2020 Projected Volumes** | **189** | **416** | **10** | **0** | **366** | **61** | **0** | **0** | **2** | **39** | **0** | **72** | **1155** |
| Base growth (0.51% compounded for 11 yrs) | 7 | 21 | 0 | 0 | 18 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 53 |
| **2025 Base Volumes** | **129** | **385** | **0** | **0** | **327** | **58** | **0** | **0** | **0** | **26** | **0** | **63** | **988** |
| **2025 Projected Volumes** | **192** | **426** | **10** | **0** | **374** | **62** | **0** | **0** | **2** | **39** | **0** | **73** | **1178** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **111** | **405** | | | **347** | **24** | | | | **11** | | **52** | **950** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **111** | **405** | **0** | **0** | **347** | **24** | **0** | **0** | **0** | **11** | **0** | **52** | **950** |
| Base growth (0.51% compounded for 6 yrs) | 3 | 13 | 0 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 30 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **114** | **418** | **0** | **0** | **358** | **25** | **0** | **0** | **0** | **11** | **0** | **54** | **980** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 9.0% | 2.0% | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | 1.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | 51.0% | | | | 8.0% | 4.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 12.0% | | 11.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | 62.0% | -9.0% | | | -2.0% | 2.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | 9.0% | | 18.0% | |
| **New Trips** | 27 | 101 | 18 | | 128 | 2 | | | 11 | 6 | | 6 | 299 |
| **Pass-by Trips** | (63) | (-9) | | | (-2) | (2) | | | | (9) | | (18) | 81 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **90** | **92** | **18** | **0** | **126** | **4** | **0** | **0** | **11** | **15** | **0** | **24** | |
| Total Trip Distribution - Design Year | **90** | **92** | **18** | **0** | **126** | **4** | **0** | **0** | **11** | **15** | **0** | **24** | **380** |
| **2020 Projected Volumes** | **204** | **510** | **18** | **0** | **484** | **29** | **0** | **0** | **11** | **26** | **0** | **78** | **1360** |
| Base growth (0.51% compounded for 11 yrs) | 6 | 23 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 54 |
| **2025 Base Volumes** | **117** | **428** | **0** | **0** | **367** | **25** | **0** | **0** | **0** | **12** | **0** | **55** | **1004** |
| **2025 Projected Volumes** | **207** | **520** | **18** | **0** | **493** | **29** | **0** | **0** | **11** | **27** | **0** | **79** | **1384** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **243** | **308** | | | **321** | **91** | | | | **48** | | **142** | **1153** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **243** | **308** | **0** | **0** | **321** | **91** | **0** | **0** | **0** | **48** | **0** | **142** | **1153** |
| Base growth (0.51% compounded for 6 yrs) | 8 | 10 | 0 | 0 | 10 | 3 | 0 | 0 | 0 | 1 | 0 | 4 | 36 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **251** | **318** | **0** | **0** | **331** | **94** | **0** | **0** | **0** | **49** | **0** | **146** | **1189** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 9.0% | 2.0% | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | 1.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | 51.0% | | | | 8.0% | 4.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 12.0% | | 11.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | 56.0% | -9.0% | | | -3.0% | 3.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | 16.0% | | 19.0% | |
| **New Trips** | 19 | 145 | 30 | | 146 | 1 | | | 12 | 4 | | 4 | 361 |
| **Pass-by Trips** | (25) | (-4) | | | (-1) | (1) | | | | (7) | | (9) | 37 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **44** | **141** | **30** | **0** | **145** | **2** | **0** | **0** | **12** | **11** | **0** | **13** | |
| Total Trip Distribution - Design Year | **44** | **141** | **30** | **0** | **145** | **2** | **0** | **0** | **12** | **11** | **0** | **13** | **398** |
| **2020 Projected Volumes** | **295** | **459** | **30** | **0** | **476** | **96** | **0** | **0** | **12** | **60** | **0** | **159** | **1587** |
| Base growth (0.51% compounded for 11 yrs) | 14 | 18 | 0 | 0 | 18 | 5 | 0 | 0 | 0 | 3 | 0 | 8 | 66 |
| **2025 Base Volumes** | **257** | **326** | **0** | **0** | **339** | **96** | **0** | **0** | **0** | **51** | **0** | **150** | **1219** |
| **2025 Projected Volumes** | **301** | **467** | **30** | **0** | **484** | **98** | **0** | **0** | **12** | **62** | **0** | **163** | **1617** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Road (EW) & Proposed Driveway (N)/Lawrence Park Business Driveway (S)
**Synchro Node:** 18 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **45** | **371** | | | **365** | **60** | | | | **39** | | **12** | **892** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **45** | **371** | **0** | **0** | **365** | **60** | **0** | **0** | **0** | **39** | **0** | **12** | **892** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 12 | 0 | 0 | 11 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 27 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **46** | **383** | **0** | **0** | **376** | **62** | **0** | **0** | **0** | **40** | **0** | **12** | **919** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 9.0% | 8.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 1.0% | | | | | 11.0% | | 7.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | -8.0% | 8.0% | 8.0% | -8.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | 8.0% | | 8.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 8.0% | 18.0% | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 8.0% | | 18.0% | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 8 | 48 | 42 | 13 | | 38 | | 24 | | | | 173 |
| **Pass-by Trips** | | (-4) | (4) | (4) | (-4) | | (4) | | (4) | | | | 8 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **4** | **52** | **46** | **9** | **0** | **42** | **0** | **28** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **4** | **52** | **46** | **9** | **0** | **42** | **0** | **28** | **0** | **0** | **0** | **181** |
| **2020 Projected Volumes** | **46** | **387** | **52** | **46** | **385** | **62** | **42** | **0** | **28** | **40** | **0** | **12** | **1100** |
| Base growth (0.51% compounded for 11 yrs) | 3 | 21 | 0 | 0 | 21 | 3 | 0 | 0 | 0 | 2 | 0 | 1 | 51 |
| **2025 Base Volumes** | **48** | **392** | **0** | **0** | **386** | **63** | **0** | **0** | **0** | **41** | **0** | **13** | **943** |
| **2025 Projected Volumes** | **48** | **396** | **52** | **46** | **395** | **63** | **42** | **0** | **28** | **41** | **0** | **13** | **1124** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **24** | **399** | | | **375** | **34** | | | | **75** | | **48** | **955** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **24** | **399** | **0** | **0** | **375** | **34** | **0** | **0** | **0** | **75** | **0** | **48** | **955** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 12 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 29 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **25** | **411** | **0** | **0** | **387** | **35** | **0** | **0** | **0** | **77** | **0** | **49** | **984** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 9.0% | 8.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 1.0% | | | | | 11.0% | | 7.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | -8.0% | 8.0% | 8.0% | -8.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | 8.0% | | 8.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 8.0% | 18.0% | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 8.0% | | 18.0% | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 23 | 95 | 82 | 8 | | 122 | | 77 | | | | 407 |
| **Pass-by Trips** | | (-28) | (28) | (28) | (-28) | | (28) | | (28) | | | | 56 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **-5** | **123** | **110** | **-20** | **0** | **150** | **0** | **105** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **-5** | **123** | **110** | **-20** | **0** | **150** | **0** | **105** | **0** | **0** | **0** | **463** |
| **2020 Projected Volumes** | **25** | **406** | **123** | **110** | **367** | **35** | **150** | **0** | **105** | **77** | **0** | **49** | **1447** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 23 | 0 | 0 | 22 | 2 | 0 | 0 | 0 | 4 | 0 | 3 | 55 |
| **2025 Base Volumes** | **25** | **422** | **0** | **0** | **397** | **36** | **0** | **0** | **0** | **79** | **0** | **51** | **1010** |
| **2025 Projected Volumes** | **25** | **417** | **123** | **110** | **377** | **36** | **150** | **0** | **105** | **79** | **0** | **51** | **1473** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **34** | **338** | | | **345** | **61** | | | | **79** | | **39** | **896** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **34** | **338** | **0** | **0** | **345** | **61** | **0** | **0** | **0** | **79** | **0** | **39** | **896** |
| Base growth (0.51% compounded for 6 yrs) | 1 | 10 | 0 | 0 | 11 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 27 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **35** | **348** | **0** | **0** | **356** | **63** | **0** | **0** | **0** | **81** | **0** | **40** | **923** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | 9.0% | 8.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 1.0% | | | | | 11.0% | | 7.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | -9.0% | 9.0% | 9.0% | -9.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | 9.0% | | 9.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 8.0% | 18.0% | 11.0% | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 8.0% | | 18.0% | | 11.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 20 | 141 | 123 | 7 | | 139 | | 89 | | | | 519 |
| **Pass-by Trips** | | (-35) | (35) | (35) | (-35) | | (35) | | (35) | | | | 70 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **-15** | **176** | **158** | **-28** | **0** | **174** | **0** | **124** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **-15** | **176** | **158** | **-28** | **0** | **174** | **0** | **124** | **0** | **0** | **0** | **589** |
| **2020 Projected Volumes** | **35** | **333** | **176** | **158** | **328** | **63** | **174** | **0** | **124** | **81** | **0** | **40** | **1512** |
| Base growth (0.51% compounded for 11 yrs) | 2 | 19 | 0 | 0 | 20 | 4 | 0 | 0 | 0 | 5 | 0 | 2 | 52 |
| **2025 Base Volumes** | **36** | **357** | **0** | **0** | **365** | **65** | **0** | **0** | **0** | **84** | **0** | **41** | **948** |
| **2025 Projected Volumes** | **36** | **342** | **176** | **158** | **337** | **65** | **174** | **0** | **124** | **84** | **0** | **41** | **1537** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Road (EW) & Proposed Driveway (N)
**Synchro Node:** 19 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 360 | | | 359 | | | | | | | | 719 |
| **Existing Volumes (Balanced)** | **0** | **360** | **0** | **0** | **359** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **719** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **371** | **0** | **0** | **370** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **741** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | 8.0% | 4.0% | 11.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 11.0% | | | | | 8.0% | | 4.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 32 | | | 48 | | 7 | | 4 | | | | 91 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **32** | **0** | **0** | **48** | **0** | **7** | **0** | **4** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **32** | **0** | **0** | **48** | **0** | **7** | **0** | **4** | **0** | **0** | **0** | **91** |
| **2020 Projected Volumes** | **0** | **403** | **0** | **0** | **418** | **0** | **7** | **0** | **4** | **0** | **0** | **0** | **832** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| **2025 Base Volumes** | **0** | **381** | **0** | **0** | **380** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **761** |
| **2025 Projected Volumes** | **0** | **413** | **0** | **0** | **428** | **0** | **7** | **0** | **4** | **0** | **0** | **0** | **852** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 449 | | | 399 | | | | | | | | 848 |
| **Existing Volumes (Balanced)** | **0** | **449** | **0** | **0** | **399** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **848** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 14 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **463** | **0** | **0** | **411** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **874** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | 8.0% | 4.0% | 11.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 11.0% | | | | | 8.0% | | 4.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 94 | 6 | 3 | 88 | | 2 | | 1 | | | | 194 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **94** | **6** | **3** | **88** | **0** | **2** | **0** | **1** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **94** | **6** | **3** | **88** | **0** | **2** | **0** | **1** | **0** | **0** | **0** | **194** |
| **2020 Projected Volumes** | **0** | **557** | **6** | **3** | **499** | **0** | **2** | **0** | **1** | **0** | **0** | **0** | **1068** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 26 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| **2025 Base Volumes** | **0** | **475** | **0** | **0** | **422** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **897** |
| **2025 Projected Volumes** | **0** | **569** | **6** | **3** | **510** | **0** | **2** | **0** | **1** | **0** | **0** | **0** | **1091** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 419 | | | 371 | | | | | | | | 790 |
| **Existing Volumes (Balanced)** | **0** | **419** | **0** | **0** | **371** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **790** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 13 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **432** | **0** | **0** | **383** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **815** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | 8.0% | 4.0% | 11.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | 11.0% | | | | | 8.0% | | 4.0% | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 12.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 12.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 105 | 4 | 2 | 127 | | 3 | | 2 | | | | 243 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **105** | **4** | **2** | **127** | **0** | **3** | **0** | **2** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **105** | **4** | **2** | **127** | **0** | **3** | **0** | **2** | **0** | **0** | **0** | **243** |
| **2020 Projected Volumes** | **0** | **537** | **4** | **2** | **510** | **0** | **3** | **0** | **2** | **0** | **0** | **0** | **1058** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 24 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| **2025 Base Volumes** | **0** | **443** | **0** | **0** | **392** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **835** |
| **2025 Projected Volumes** | **0** | **548** | **4** | **2** | **519** | **0** | **3** | **0** | **2** | **0** | **0** | **0** | **1078** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Street (NS)/Parkway Avenue (W)
**Synchro Node:** 20 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **4** | | **96** | | **963** | **27** | **182** | **274** | | **1546** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **4** | **0** | **96** | **0** | **963** | **27** | **182** | **274** | **0** | **1546** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 30 | 1 | 6 | 8 | 0 | 48 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **4** | **0** | **99** | **0** | **993** | **28** | **188** | **282** | **0** | **1594** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 1.0% | | 1.0% | | 3.0% | | | 1.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 1.0% | 1.0% | 1.0% | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 9.0% | | | 5.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 5.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 5 | | 6 | | 25 | 2 | 3 | 21 | | 62 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **5** | **0** | **6** | **0** | **25** | **2** | **3** | **21** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **5** | **0** | **6** | **0** | **25** | **2** | **3** | **21** | **0** | **62** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **9** | **0** | **105** | **0** | **1018** | **30** | **191** | **303** | **0** | **1656** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 55 | 2 | 10 | 16 | 0 | 89 |
| **2025 Base Volumes** | **0** | **0** | **0** | **4** | **0** | **102** | **0** | **1018** | **29** | **192** | **290** | **0** | **1635** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **9** | **0** | **108** | **0** | **1043** | **31** | **195** | **311** | **0** | **1697** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **181** | **744** | | **44** | | **292** | | **491** | **29** | **181** | **744** | | **2706** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **181** | **744** | **0** | **44** | **0** | **292** | **0** | **491** | **29** | **181** | **744** | **0** | **2706** |
| Base growth (0.51% compounded for 6 yrs) | 6 | 23 | 0 | 1 | 0 | 9 | 0 | 15 | 1 | 6 | 23 | 0 | 84 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **187** | **767** | **0** | **45** | **0** | **301** | **0** | **506** | **30** | **187** | **767** | **0** | **2790** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 1.0% | | 1.0% | | 3.0% | | | 1.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 1.0% | 1.0% | 1.0% | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 9.0% | | | 5.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 5.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 9 | | 10 | | 49 | 11 | 12 | 49 | | 140 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **9** | **0** | **10** | **0** | **49** | **11** | **12** | **49** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **9** | **0** | **10** | **0** | **49** | **11** | **12** | **49** | **0** | **140** |
| **2020 Projected Volumes** | **187** | **767** | **0** | **54** | **0** | **311** | **0** | **555** | **41** | **199** | **816** | **0** | **2930** |
| Base growth (0.51% compounded for 11 yrs) | 10 | 43 | 0 | 3 | 0 | 17 | 0 | 28 | 2 | 10 | 43 | 0 | 156 |
| **2025 Base Volumes** | **191** | **787** | **0** | **47** | **0** | **309** | **0** | **519** | **31** | **191** | **787** | **0** | **2862** |
| **2025 Projected Volumes** | **191** | **787** | **0** | **56** | **0** | **319** | **0** | **568** | **42** | **203** | **836** | **0** | **3002** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **36** | | **215** | | **405** | **16** | **142** | **481** | | **1295** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **36** | **0** | **215** | **0** | **405** | **16** | **142** | **481** | **0** | **1295** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 13 | 0 | 4 | 15 | 0 | 40 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **37** | **0** | **222** | **0** | **418** | **16** | **146** | **496** | **0** | **1335** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | 1.0% | | 1.0% | | 3.0% | | | 1.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 1.0% | 1.0% | 1.0% | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 9.0% | | | 5.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 5.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 5.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | 15 | | 16 | | 64 | 12 | 13 | 59 | | 179 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **15** | **0** | **16** | **0** | **64** | **12** | **13** | **59** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **15** | **0** | **16** | **0** | **64** | **12** | **13** | **59** | **0** | **179** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **52** | **0** | **238** | **0** | **482** | **28** | **159** | **555** | **0** | **1514** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 2 | 0 | 12 | 0 | 23 | 1 | 8 | 28 | 0 | 74 |
| **2025 Base Volumes** | **0** | **0** | **0** | **38** | **0** | **227** | **0** | **428** | **17** | **150** | **509** | **0** | **1369** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **53** | **0** | **243** | **0** | **492** | **29** | **163** | **568** | **0** | **1548** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Intersection:** | **Reed Street (NS)/Marpit Drive (W)** | | | | | | | | | | |
| **Synchro Node:** | **21** | **Adjacent intersections:** | **West** | **0** | **East** | **0** | **North** | **0** | **South** | **0** | |

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **76** | | **28** | | **1014** | **212** | **42** | **214** | | **1586** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **76** | **0** | **28** | **0** | **1014** | **212** | **42** | **214** | **0** | **1586** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 31 | 7 | 1 | 7 | 0 | 49 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **78** | **0** | **29** | **0** | **1045** | **219** | **43** | **221** | **0** | **1635** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 6.0% | 3.0% | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 6.0% | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | 11.0% | -11.0% | | | -1.0% | 1.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | 11.0% | | 1.0% | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | 9.0% | | | | 5.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 5.0% | | 9.0% | | | | | | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 3.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 8 | 4 | 20 | | 10 | 1 | 31 | 18 | | 1 | 15 | 10 | 118 |
| **Pass-by Trips** | (6) | | (1) | | | | (6) | (-6) | | | (-1) | (1) | 7 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **14** | **4** | **21** | **0** | **10** | **1** | **37** | **12** | **0** | **1** | **14** | **11** | |
| Total Trip Distribution - Design Year | **14** | **4** | **21** | **0** | **10** | **1** | **37** | **12** | **0** | **1** | **14** | **11** | **125** |
| **2020 Projected Volumes** | **14** | **4** | **21** | **78** | **10** | **30** | **37** | **1057** | **219** | **44** | **235** | **11** | **1760** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 58 | 12 | 2 | 12 | 0 | 90 |
| **2025 Base Volumes** | **0** | **0** | **0** | **80** | **0** | **30** | **0** | **1072** | **224** | **44** | **226** | **0** | **1676** |
| **2025 Projected Volumes** | **14** | **4** | **21** | **80** | **10** | **31** | **37** | **1084** | **224** | **45** | **240** | **11** | **1801** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **290** | | **84** | | **409** | **115** | **39** | **775** | | **1712** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **290** | **0** | **84** | **0** | **409** | **115** | **39** | **775** | **0** | **1712** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 13 | 4 | 1 | 24 | 0 | 54 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **299** | **0** | **87** | **0** | **422** | **119** | **40** | **799** | **0** | **1766** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 6.0% | 3.0% | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 6.0% | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | 4.0% | -4.0% | | | -8.0% | 8.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | 4.0% | | 8.0% | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | 9.0% | | | | 5.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 5.0% | | 9.0% | | | | | | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 3.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 22 | 21 | 66 | | 18 | 1 | 61 | 36 | | 1 | 36 | 21 | 283 |
| **Pass-by Trips** | (14) | | (28) | | | | (14) | (-14) | | | (-28) | (28) | 42 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **36** | **21** | **94** | **0** | **18** | **1** | **75** | **22** | **0** | **1** | **8** | **49** | |
| Total Trip Distribution - Design Year | **36** | **21** | **94** | **0** | **18** | **1** | **75** | **22** | **0** | **1** | **8** | **49** | **325** |
| **2020 Projected Volumes** | **36** | **21** | **94** | **299** | **18** | **88** | **75** | **444** | **119** | **41** | **807** | **49** | **2091** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 17 | 0 | 5 | 0 | 24 | 7 | 2 | 45 | 0 | 100 |
| **2025 Base Volumes** | **0** | **0** | **0** | **307** | **0** | **89** | **0** | **433** | **122** | **41** | **820** | **0** | **1812** |
| **2025 Projected Volumes** | **36** | **21** | **94** | **307** | **18** | **90** | **75** | **455** | **122** | **42** | **828** | **49** | **2137** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | **195** | | **70** | | **341** | **135** | **79** | **427** | | **1247** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **195** | **0** | **70** | **0** | **341** | **135** | **79** | **427** | **0** | **1247** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 11 | 4 | 2 | 13 | 0 | 38 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **201** | **0** | **72** | **0** | **352** | **139** | **81** | **440** | **0** | **1285** |

| **Non-Residential** | | | **Residential** | | | **Convenience Market** | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 6.0% | 3.0% | | | | 2.0% | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | 2.0% | 2.0% | 6.0% | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | 4.0% | -4.0% | | | -6.0% | 6.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | 4.0% | | 6.0% | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | 9.0% | 9.0% | | | | 5.0% | |
| RESIDENTIAL - Trip Assignment % - New Exit | 5.0% | | 9.0% | | | | | | | | 9.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | 2.0% | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | 2.0% | 3.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 26 | 24 | 76 | | 30 | 1 | 93 | 49 | | 1 | 41 | 32 | 373 |
| **Pass-by Trips** | (16) | | (23) | | | | (16) | (-16) | | | (-23) | (23) | 39 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **42** | **24** | **99** | **0** | **30** | **1** | **109** | **33** | **0** | **1** | **18** | **55** | |
| Total Trip Distribution - Design Year | **42** | **24** | **99** | **0** | **30** | **1** | **109** | **33** | **0** | **1** | **18** | **55** | **412** |
| **2020 Projected Volumes** | **42** | **24** | **99** | **201** | **30** | **73** | **109** | **385** | **139** | **82** | **458** | **55** | **1697** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 11 | 0 | 4 | 0 | 20 | 8 | 5 | 25 | 0 | 73 |
| **2025 Base Volumes** | **0** | **0** | **0** | **206** | **0** | **74** | **0** | **361** | **143** | **84** | **452** | **0** | **1320** |
| **2025 Projected Volumes** | **42** | **24** | **99** | **206** | **30** | **75** | **109** | **394** | **143** | **85** | **470** | **55** | **1732** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Eagle Road (EW) & Reed Street (S)/Private Driveway (N)
**Synchro Node:** 22 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **413** | **137** | **2** | **2** | **397** | **811** | **5** | **3** | **3** | **219** | **3** | **62** | **2057** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **413** | **137** | **2** | **2** | **397** | **811** | **5** | **3** | **3** | **219** | **3** | **62** | **2057** |
| Base growth (0.51% compounded for 6 yrs) | 13 | 4 | 0 | 0 | 12 | 25 | 0 | 0 | 0 | 7 | 0 | 2 | 63 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **426** | **141** | **2** | **2** | **409** | **836** | **5** | **3** | **3** | **226** | **3** | **64** | **2120** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 3.0% | | | | 2.0% | 6.0% | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | | | | | | | | 6.0% | | 3.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 8.0% | | | | | 10.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 10.0% | | 8.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 1.0% | | | | 6.0% | 2.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | | | | | | | | 2.0% | | 1.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 17 | 7 | | | 13 | 32 | | | | 22 | | 13 | 104 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **17** | **7** | **0** | **0** | **13** | **32** | **0** | **0** | **0** | **22** | **0** | **13** | |
| Total Trip Distribution - Design Year | **17** | **7** | **0** | **0** | **13** | **32** | **0** | **0** | **0** | **22** | **0** | **13** | **104** |
| **2020 Projected Volumes** | **443** | **148** | **2** | **2** | **422** | **868** | **5** | **3** | **3** | **248** | **3** | **77** | **2224** |
| Base growth (0.51% compounded for 11 yrs) | 24 | 8 | 0 | 0 | 23 | 47 | 0 | 0 | 0 | 13 | 0 | 4 | 119 |
| **2025 Base Volumes** | **437** | **145** | **2** | **2** | **420** | **858** | **5** | **3** | **3** | **232** | **3** | **66** | **2176** |
| **2025 Projected Volumes** | **454** | **152** | **2** | **2** | **433** | **890** | **5** | **3** | **3** | **254** | **3** | **79** | **2280** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **131** | **361** | **0** | **1** | **269** | **395** | **0** | **0** | **0** | **613** | **1** | **411** | **2182** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **131** | **361** | **0** | **1** | **269** | **395** | **0** | **0** | **0** | **613** | **1** | **411** | **2182** |
| Base growth (0.51% compounded for 6 yrs) | 4 | 11 | 0 | 0 | 8 | 12 | 0 | 0 | 0 | 19 | 0 | 13 | 67 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **135** | **372** | **0** | **1** | **277** | **407** | **0** | **0** | **0** | **632** | **1** | **424** | **2249** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 3.0% | | | | 2.0% | 6.0% | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | | | | | | | | 6.0% | | 3.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 8.0% | | | | | 10.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 10.0% | | 8.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 1.0% | | | | 6.0% | 2.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | | | | | | | | 2.0% | | 1.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 35 | 24 | | | 21 | 63 | | | | 67 | | 35 | 245 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **35** | **24** | **0** | **0** | **21** | **63** | **0** | **0** | **0** | **67** | **0** | **35** | |
| Total Trip Distribution - Design Year | **35** | **24** | **0** | **0** | **21** | **63** | **0** | **0** | **0** | **67** | **0** | **35** | **245** |
| **2020 Projected Volumes** | **170** | **396** | **0** | **1** | **298** | **470** | **0** | **0** | **0** | **699** | **1** | **459** | **2494** |
| Base growth (0.51% compounded for 11 yrs) | 8 | 21 | 0 | 0 | 15 | 23 | 0 | 0 | 0 | 35 | 0 | 24 | 126 |
| **2025 Base Volumes** | **139** | **382** | **0** | **1** | **284** | **418** | **0** | **0** | **0** | **648** | **1** | **435** | **2308** |
| **2025 Projected Volumes** | **174** | **406** | **0** | **1** | **305** | **481** | **0** | **0** | **0** | **715** | **1** | **470** | **2553** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **143** | **198** | **0** | **0** | **281** | **337** | **1** | **0** | **1** | **450** | **0** | **171** | **1582** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **143** | **198** | **0** | **0** | **281** | **337** | **1** | **0** | **1** | **450** | **0** | **171** | **1582** |
| Base growth (0.51% compounded for 6 yrs) | 4 | 6 | 0 | 0 | 9 | 10 | 0 | 0 | 0 | 14 | 0 | 5 | 48 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **147** | **204** | **0** | **0** | **290** | **347** | **1** | **0** | **1** | **464** | **0** | **176** | **1630** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | 3.0% | | | | 2.0% | 6.0% | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | | | | | | | | 6.0% | | 3.0% | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | 8.0% | | | | | 10.0% | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | 10.0% | | 8.0% | |
| CONV MARKET - Trip Assignment % - New Enter | 1.0% | | | | 6.0% | 2.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | | | | | | | | 2.0% | | 1.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | 48 | 26 | | | 32 | 95 | | | | 77 | | 39 | 317 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **48** | **26** | **0** | **0** | **32** | **95** | **0** | **0** | **0** | **77** | **0** | **39** | |
| Total Trip Distribution - Design Year | **48** | **26** | **0** | **0** | **32** | **95** | **0** | **0** | **0** | **77** | **0** | **39** | **317** |
| **2020 Projected Volumes** | **195** | **230** | **0** | **0** | **322** | **442** | **1** | **0** | **1** | **541** | **0** | **215** | **1947** |
| Base growth (0.51% compounded for 11 yrs) | 8 | 11 | 0 | 0 | 16 | 19 | 0 | 0 | 0 | 26 | 0 | 10 | 90 |
| **2025 Base Volumes** | **151** | **209** | **0** | **0** | **297** | **356** | **1** | **0** | **1** | **476** | **0** | **181** | **1672** |
| **2025 Projected Volumes** | **199** | **235** | **0** | **0** | **329** | **451** | **1** | **0** | **1** | **553** | **0** | **220** | **1989** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Eagle Road (EW) & Cardinal O'Hara Driveway (S)
**Synchro Node:** 23 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **52** | **203** | | | **678** | **134** | | | | **52** | | **96** | **1215** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **52** | **203** | **0** | **0** | **678** | **134** | **0** | **0** | **0** | **52** | **0** | **96** | **1215** |
| Base growth (0.51% compounded for 6 yrs) | 2 | 6 | 0 | 0 | 21 | 4 | 0 | 0 | 0 | 2 | 0 | 3 | 38 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **54** | **209** | **0** | **0** | **699** | **138** | **0** | **0** | **0** | **54** | **0** | **99** | **1253** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 12 | | | 25 | | | | | | | | 37 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | (5) | | | | | | | | (-5) | | (-19) | |
| Total Trip Distribution - Opening Year | **0** | **17** | **0** | **0** | **25** | **0** | **0** | **0** | **0** | **-5** | **0** | **-19** | |
| Total Trip Distribution - Design Year | **0** | **17** | **0** | **0** | **25** | **0** | **0** | **0** | **0** | **-5** | **0** | **-19** | **18** |
| **2020 Projected Volumes** | **54** | **226** | **0** | **0** | **724** | **138** | **0** | **0** | **0** | **49** | **0** | **80** | **1271** |
| Base growth (0.51% compounded for 11 yrs) | 3 | 12 | 0 | 0 | 39 | 8 | 0 | 0 | 0 | 3 | 0 | 6 | 71 |
| **2025 Base Volumes** | **55** | **215** | **0** | **0** | **717** | **142** | **0** | **0** | **0** | **55** | **0** | **102** | **1286** |
| **2025 Projected Volumes** | **55** | **232** | **0** | **0** | **742** | **142** | **0** | **0** | **0** | **50** | **0** | **83** | **1304** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **14** | **446** | | | **351** | **24** | | | | **78** | | **50** | **963** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **14** | **446** | **0** | **0** | **351** | **24** | **0** | **0** | **0** | **78** | **0** | **50** | **963** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 14 | 0 | 0 | 11 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 30 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **14** | **460** | **0** | **0** | **362** | **25** | **0** | **0** | **0** | **80** | **0** | **52** | **993** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 47 | | | 41 | | | | | | | | 88 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | (8) | | | | | | | | (-8) | | (-10) | |
| Total Trip Distribution - Opening Year | **0** | **55** | **0** | **0** | **41** | **0** | **0** | **0** | **0** | **-8** | **0** | **-10** | |
| Total Trip Distribution - Design Year | **0** | **55** | **0** | **0** | **41** | **0** | **0** | **0** | **0** | **-8** | **0** | **-10** | **78** |
| **2020 Projected Volumes** | **14** | **515** | **0** | **0** | **403** | **25** | **0** | **0** | **0** | **72** | **0** | **42** | **1071** |
| Base growth (0.51% compounded for 11 yrs) | 1 | 26 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 55 |
| **2025 Base Volumes** | **15** | **472** | **0** | **0** | **371** | **25** | **0** | **0** | **0** | **82** | **0** | **53** | **1018** |
| **2025 Projected Volumes** | **15** | **527** | **0** | **0** | **412** | **25** | **0** | **0** | **0** | **74** | **0** | **43** | **1096** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | **5** | **205** | | | **362** | **9** | | | | **23** | | **50** | **654** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **5** | **205** | **0** | **0** | **362** | **9** | **0** | **0** | **0** | **23** | **0** | **50** | **654** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 6 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 20 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **5** | **211** | **0** | **0** | **373** | **9** | **0** | **0** | **0** | **24** | **0** | **52** | **674** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 4.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 4.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 8.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 8.0% | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 51 | | | 62 | | | | | | | | 113 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | (2) | | | | | | | | (-2) | | (-10) | |
| Total Trip Distribution - Opening Year | **0** | **53** | **0** | **0** | **62** | **0** | **0** | **0** | **0** | **-2** | **0** | **-10** | |
| Total Trip Distribution - Design Year | **0** | **53** | **0** | **0** | **62** | **0** | **0** | **0** | **0** | **-2** | **0** | **-10** | **103** |
| **2020 Projected Volumes** | **5** | **264** | **0** | **0** | **435** | **9** | **0** | **0** | **0** | **22** | **0** | **42** | **777** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 12 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 38 |
| **2025 Base Volumes** | **5** | **217** | **0** | **0** | **383** | **10** | **0** | **0** | **0** | **24** | **0** | **53** | **692** |
| **2025 Projected Volumes** | **5** | **270** | **0** | **0** | **445** | **10** | **0** | **0** | **0** | **22** | **0** | **43** | **795** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Reed Road (E/W) & Conv. Market Driveway (S)
**Synchro Node:** 24 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 419 | | | 334 | | | | | | | | 753 |
| **Existing Volumes (Balanced)** | **0** | **419** | **0** | **0** | **334** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **753** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 13 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **432** | **0** | **0** | **344** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **776** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 11.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 51.0% | | | | 8.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | 50.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | 36.0% | | | | 6.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | -2.0% | | | | | | | 38.0% | |
| **New Trips** | | 85 | | | 50 | 4 | | | | | | 25 | 164 |
| **Pass-by Trips** | | (30) | | | (-2) | (5) | | | | | | (32) | 65 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **115** | **0** | **0** | **48** | **9** | **0** | **0** | **0** | **0** | **0** | **57** | |
| Total Trip Distribution - Design Year | **0** | **115** | **0** | **0** | **48** | **9** | **0** | **0** | **0** | **0** | **0** | **57** | **229** |
| **2020 Projected Volumes** | **0** | **547** | **0** | **0** | **392** | **9** | **0** | **0** | **0** | **0** | **0** | **57** | **1005** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 24 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| **2025 Base Volumes** | **0** | **443** | **0** | **0** | **353** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **796** |
| **2025 Projected Volumes** | **0** | **558** | **0** | **0** | **401** | **9** | **0** | **0** | **0** | **0** | **0** | **57** | **1025** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 494 | | | 452 | | | | | | | | 946 |
| **Existing Volumes (Balanced)** | **0** | **494** | **0** | **0** | **452** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **946** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 15 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **509** | **0** | **0** | **466** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **975** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 11.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 51.0% | | | | 8.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | 50.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | 53.0% | | | | 6.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | 10.0% | | | | | | | 43.0% | |
| **New Trips** | | 146 | | | 130 | 4 | | | | | | 26 | 306 |
| **Pass-by Trips** | | (54) | | | (10) | (6) | | | | | | (43) | 113 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **200** | **0** | **0** | **140** | **10** | **0** | **0** | **0** | **0** | **0** | **69** | |
| Total Trip Distribution - Design Year | **0** | **200** | **0** | **0** | **140** | **10** | **0** | **0** | **0** | **0** | **0** | **69** | **419** |
| **2020 Projected Volumes** | **0** | **709** | **0** | **0** | **606** | **10** | **0** | **0** | **0** | **0** | **0** | **69** | **1394** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 28 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| **2025 Base Volumes** | **0** | **522** | **0** | **0** | **478** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1000** |
| **2025 Projected Volumes** | **0** | **722** | **0** | **0** | **618** | **10** | **0** | **0** | **0** | **0** | **0** | **69** | **1419** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | 536 | | | 384 | | | | | | | | 920 |
| **Existing Volumes (Balanced)** | **0** | **536** | **0** | **0** | **384** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **920** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 17 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **553** | **0** | **0** | **396** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **949** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 11.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 26.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 26.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | 51.0% | | | | 8.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | 11.0% | | | | | | | 50.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | 40.0% | | | | 8.0% | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | 8.0% | | | | | | | 32.0% | |
| **New Trips** | | 194 | | | 147 | 3 | | | | | | 17 | 361 |
| **Pass-by Trips** | | (18) | | | (4) | (4) | | | | | | (14) | 40 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **212** | **0** | **0** | **151** | **7** | **0** | **0** | **0** | **0** | **0** | **31** | |
| Total Trip Distribution - Design Year | **0** | **212** | **0** | **0** | **151** | **7** | **0** | **0** | **0** | **0** | **0** | **31** | **401** |
| **2020 Projected Volumes** | **0** | **765** | **0** | **0** | **547** | **7** | **0** | **0** | **0** | **0** | **0** | **31** | **1350** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 31 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| **2025 Base Volumes** | **0** | **567** | **0** | **0** | **406** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **973** |
| **2025 Projected Volumes** | **0** | **779** | **0** | **0** | **557** | **7** | **0** | **0** | **0** | **0** | **0** | **31** | **1374** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Shopping Center Driveway (N/S) & Conv. Market Driveway (E)
**Synchro Node:** 25 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 177 | | | 85 | | 262 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **177** | **0** | **0** | **85** | **0** | **262** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 8 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **182** | **0** | **0** | **88** | **0** | **270** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | 55.0% | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | 23.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | 52.0% | -5.0% | | | -5.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | 5.0% | | 20.0% | | | | | | | | | | |
| **New Trips** | | | 11 | | | | 28 | | | | | | 39 |
| **Pass-by Trips** | (4) | | (17) | | | | (43) | (-4) | | | (-4) | (4) | 60 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **4** | **0** | **28** | **0** | **0** | **0** | **71** | **-4** | **0** | **0** | **-4** | **4** | |
| Total Trip Distribution - Design Year | **4** | **0** | **28** | **0** | **0** | **0** | **71** | **-4** | **0** | **0** | **-4** | **4** | **99** |
| **2020 Projected Volumes** | **4** | **0** | **28** | **0** | **0** | **0** | **71** | **178** | **0** | **0** | **84** | **4** | **369** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 5 | 0 | 15 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **187** | **0** | **0** | **90** | **0** | **277** |
| **2025 Projected Volumes** | **4** | **0** | **28** | **0** | **0** | **0** | **71** | **183** | **0** | **0** | **86** | **4** | **376** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 135 | | | 63 | | 198 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **135** | **0** | **0** | **63** | **0** | **198** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 6 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **139** | **0** | **0** | **65** | **0** | **204** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | 55.0% | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | 23.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | 69.0% | -5.0% | | | -5.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | 5.0% | | 32.0% | | | | | | | | | | |
| **New Trips** | | | 12 | | | | 29 | | | | | | 41 |
| **Pass-by Trips** | (5) | | (32) | | | | (70) | (-5) | | | (-5) | (5) | 102 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **5** | **0** | **44** | **0** | **0** | **0** | **99** | **-5** | **0** | **0** | **-5** | **5** | |
| Total Trip Distribution - Design Year | **5** | **0** | **44** | **0** | **0** | **0** | **99** | **-5** | **0** | **0** | **-5** | **5** | **143** |
| **2020 Projected Volumes** | **5** | **0** | **44** | **0** | **0** | **0** | **99** | **134** | **0** | **0** | **60** | **5** | **347** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 4 | 0 | 12 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **143** | **0** | **0** | **67** | **0** | **210** |
| **2025 Projected Volumes** | **5** | **0** | **44** | **0** | **0** | **0** | **99** | **138** | **0** | **0** | **62** | **5** | **353** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 334 | | | 190 | | 524 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **334** | **0** | **0** | **190** | **0** | **524** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 6 | 0 | 16 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **344** | **0** | **0** | **196** | **0** | **540** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | 55.0% | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | 23.0% | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | 64.0% | -5.0% | | | -5.0% | 5.0% | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | 5.0% | | 40.0% | | | | | | | | | | |
| **New Trips** | | | 8 | | | | 20 | | | | | | 28 |
| **Pass-by Trips** | (2) | | (18) | | | | (29) | (-2) | | | (-2) | (2) | 47 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **2** | **0** | **26** | **0** | **0** | **0** | **49** | **-2** | **0** | **0** | **-2** | **2** | |
| Total Trip Distribution - Design Year | **2** | **0** | **26** | **0** | **0** | **0** | **49** | **-2** | **0** | **0** | **-2** | **2** | **75** |
| **2020 Projected Volumes** | **2** | **0** | **26** | **0** | **0** | **0** | **49** | **342** | **0** | **0** | **194** | **2** | **615** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 11 | 0 | 30 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **353** | **0** | **0** | **201** | **0** | **554** |
| **2025 Projected Volumes** | **2** | **0** | **26** | **0** | **0** | **0** | **49** | **351** | **0** | **0** | **199** | **2** | **629** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Proposed Driveway (E/W) & Cardinal O'Hara Connection (N)
**Synchro Node:** 26 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | 3 | | 50 | (83) |
| EXIT = | 198 | (55) | 89 | | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 10.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 15.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | 10.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | 10.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 45.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 45.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 53 | | | 70 | | | | | | | | 123 |
| **Pass-by Trips** | | (6) | | | (6) | | | | | | | | 12 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | (16) | | | | (38) | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **59** | **16** | **0** | **76** | **0** | **38** | **0** | **0** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **59** | **16** | **0** | **76** | **0** | **38** | **0** | **0** | **0** | **0** | **0** | **189** |
| **2020 Projected Volumes** | **0** | **59** | **16** | **0** | **76** | **0** | **38** | **0** | **0** | **0** | **0** | **0** | **189** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **2025 Projected Volumes** | **0** | **59** | **16** | **0** | **76** | **0** | **38** | **0** | **0** | **0** | **0** | **0** | **189** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | 69 | | 52 | (101) |
| EXIT = | 1070 | (347) | 22 | | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 10.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 15.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | 10.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | 10.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 45.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 45.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 123 | | | 171 | | | | | | | | 294 |
| **Pass-by Trips** | | (35) | | | (35) | | | | | | | | 70 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | (18) | | | | (26) | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **158** | **18** | **0** | **206** | **0** | **26** | **0** | **0** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **158** | **18** | **0** | **206** | **0** | **26** | **0** | **0** | **0** | **0** | **0** | **408** |
| **2020 Projected Volumes** | **0** | **158** | **18** | **0** | **206** | **0** | **26** | **0** | **0** | **0** | **0** | **0** | **408** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **2025 Projected Volumes** | **0** | **158** | **18** | **0** | **206** | **0** | **26** | **0** | **0** | **0** | **0** | **0** | **408** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

| | Non-Residential | | Residential | | Convenience Market | |
|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | 46 | | 37 | (45) |
| EXIT = | 1204 | (391) | 41 | | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | 10.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | 15.0% | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | 16.0% | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | 16.0% | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | 45.0% | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | 45.0% | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 169 | | | 199 | | | | | | | | 368 |
| **Pass-by Trips** | | (63) | | | (63) | | | | | | | | 126 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | (6) | | | | (21) | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **232** | **6** | **0** | **262** | **0** | **21** | **0** | **0** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **232** | **6** | **0** | **262** | **0** | **21** | **0** | **0** | **0** | **0** | **0** | **521** |
| **2020 Projected Volumes** | **0** | **232** | **6** | **0** | **262** | **0** | **21** | **0** | **0** | **0** | **0** | **0** | **521** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **2025 Projected Volumes** | **0** | **232** | **6** | **0** | **262** | **0** | **21** | **0** | **0** | **0** | **0** | **0** | **521** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (N/S) & Proposed Convenience Market RIRO Driveway (W)
**Synchro Node:** 27 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1620** | **0** | **0** | **1200** | **0** | **2820** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | 37.0% | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | 27.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -37.0% | 37.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | 37.0% | | | | | | | |
| **New Trips** | | | | | | 13 | | 91 | 19 | | 208 | | 331 |
| **Pass-by Trips** | | | | | | (31) | | (-31) | (31) | | | | 31 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **44** | **0** | **60** | **50** | **0** | **208** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **44** | **0** | **60** | **50** | **0** | **208** | **0** | **362** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **44** | **0** | **1680** | **50** | **0** | **1408** | **0** | **3182** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1661** | **100** | **0** | **1230** | **0** | **2991** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **44** | **0** | **1721** | **150** | **0** | **1438** | **0** | **3353** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1266** | **0** | **0** | **2080** | **0** | **3346** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | 37.0% | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | 27.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -20.0% | 20.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | 20.0% | | | | | | | |
| **New Trips** | | | | | | 14 | | 394 | 19 | | 362 | | 789 |
| **Pass-by Trips** | | | | | | (20) | | (-20) | (20) | | | | 20 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **34** | **0** | **374** | **39** | **0** | **362** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **34** | **0** | **374** | **39** | **0** | **362** | **0** | **809** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **34** | **0** | **1640** | **39** | **0** | **2442** | **0** | **4155** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1297** | **78** | **0** | **2131** | **0** | **3506** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **34** | **0** | **1671** | **117** | **0** | **2493** | **0** | **4315** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1558** | **0** | **0** | **1546** | **0** | **3104** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 36.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 36.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 18.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 18.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | 37.0% | | 36.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | 27.0% | | 9.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | -23.0% | 23.0% | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | 23.0% | | | | | | | |
| **New Trips** | | | | | | 9 | | 443 | 14 | | 554 | | 1020 |
| **Pass-by Trips** | | | | | | (10) | | (-10) | (10) | | | | 10 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **19** | **0** | **433** | **24** | **0** | **554** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **19** | **0** | **433** | **24** | **0** | **554** | **0** | **1030** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **19** | **0** | **1991** | **24** | **0** | **2100** | **0** | **4134** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1596** | **48** | **0** | **1586** | **0** | **3230** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **19** | **0** | **2029** | **72** | **0** | **2140** | **0** | **4260** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Sproul Road (NS) & Proposed RI Driveway
**Synchro Node:** 28 **Adjacent intersections:** West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 2144 | | | 1153 | | 3297 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2144** | **0** | **0** | **1153** | **0** | **3297** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 0 | 0 | 36 | 0 | 102 |
| Marple Associates (260+ksf) | | | | | | | | 23 | | | 10 | | 33 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 7 | | | 1 | | 8 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2240** | **0** | **0** | **1200** | **0** | **3440** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **524** | **(55)** | **ENTER =** | **3** | | **ENTER =** | **50** | **(83)** |
| **EXIT =** | **198** | **(55)** | **EXIT =** | **89** | | **EXIT =** | **49** | **(83)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 29.0% | 10.0% | | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -10.0% | 10.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 196 | 52 | | 133 | | 381 |
| **Pass-by Trips** | | | | | | | | (-6) | (6) | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **190** | **58** | **0** | **133** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **190** | **58** | **0** | **133** | **0** | **381** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2430** | **58** | **0** | **1333** | **0** | **3821** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 0 | 66 | 0 | 189 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2297** | **0** | **0** | **1230** | **0** | **3527** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2487** | **58** | **0** | **1363** | **0** | **3908** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 1324 | | | 2231 | | 3555 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1324** | **0** | **0** | **2231** | **0** | **3555** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 69 | 0 | 110 |
| Marple Associates (260+ksf) | | | | | | | | 36 | | | 42 | | 78 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 3 | | | 8 | | 11 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1404** | **0** | **0** | **2350** | **0** | **3754** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **920** | **(347)** | **ENTER =** | **69** | | **ENTER =** | **52** | **(101)** |
| **EXIT =** | **1070** | **(347)** | **EXIT =** | **22** | | **EXIT =** | **51** | **(101)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 29.0% | 10.0% | | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -5.0% | 5.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 361 | 92 | | 446 | | 899 |
| **Pass-by Trips** | | | | | | | | (-17) | (17) | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **344** | **109** | **0** | **446** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **344** | **109** | **0** | **446** | **0** | **899** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1748** | **109** | **0** | **2796** | **0** | **4653** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 129 | 0 | 205 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1439** | **0** | **0** | **2410** | **0** | **3849** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1783** | **109** | **0** | **2856** | **0** | **4748** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2014 Existing Counts** | | | | | | | | | | | | | **0** |
| Balancing | | | | | | | | 1272 | | | 1414 | | 2686 |
| **Existing Volumes (Balanced)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1272** | **0** | **0** | **1414** | **0** | **2686** |
| Base growth (0.51% compounded for 6 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 44 | 0 | 83 |
| Marple Associates (260+ksf) | | | | | | | | 62 | | | 45 | | 107 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | 10 | | | 6 | | 16 |
| **2020 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1383** | **0** | **0** | **1509** | **0** | **2892** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| **ENTER =** | **1481** | **(391)** | **ENTER =** | **46** | | **ENTER =** | **37** | **(45)** |
| **EXIT =** | **1204** | **(391)** | **EXIT =** | **41** | | **EXIT =** | **33** | **(45)** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 29.0% | 10.0% | | 5.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 5.0% | | | 34.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | -5.0% | 5.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | 17.0% | | | 9.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 9.0% | | | 17.0% | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | 50.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | | | | 50.0% | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 520 | 148 | | 511 | | 1179 |
| **Pass-by Trips** | | | | | | | | (-20) | (20) | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **500** | **168** | **0** | **511** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **500** | **168** | **0** | **511** | **0** | **1179** |
| **2020 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1883** | **168** | **0** | **2020** | **0** | **4071** |
| Base growth (0.51% compounded for 11 yrs) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 0 | 81 | 0 | 154 |
| **2025 Base Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1417** | **0** | **0** | **1546** | **0** | **2963** |
| **2025 Projected Volumes** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1917** | **168** | **0** | **2057** | **0** | **4142** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Parkway Ave (NS) & SC Driveway/Westbourne Drive
**Synchro Node:** 29 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | **56** | **16** | **32** | **18** | **21** | **28** | **48** | **616** | **2** | **18** | **172** | **52** | **1079** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **56** | **16** | **32** | **18** | **21** | **28** | **48** | **616** | **2** | **18** | **172** | **52** | **1079** |
| Base growth (0.51% compounded for 5 yrs) | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 16 | 0 | 0 | 4 | 1 | 26 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **57** | **16** | **33** | **18** | **22** | **29** | **49** | **632** | **2** | **18** | **176** | **53** | **1105** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 11.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 11.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 17 | | | 18 | | 35 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **0** | **18** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **0** | **18** | **0** | **35** |
| **2020 Projected Volumes** | **57** | **16** | **33** | **18** | **22** | **29** | **49** | **649** | **2** | **18** | **194** | **53** | **1140** |
| Base growth (0.51% compounded for 10 yrs) | 3 | 1 | 2 | 1 | 1 | 1 | 3 | 32 | 0 | 1 | 9 | 3 | 57 |
| **2025 Base Volumes** | **59** | **17** | **34** | **19** | **22** | **29** | **51** | **648** | **2** | **19** | **181** | **55** | **1136** |
| **2025 Projected Volumes** | **59** | **17** | **34** | **19** | **22** | **29** | **51** | **665** | **2** | **19** | **199** | **55** | **1171** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | **104** | **67** | **119** | **19** | **29** | **18** | **63** | **364** | **4** | **22** | **470** | **94** | **1373** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **104** | **67** | **119** | **19** | **29** | **18** | **63** | **364** | **4** | **22** | **470** | **94** | **1373** |
| Base growth (0.51% compounded for 5 yrs) | 3 | 2 | 3 | 0 | 1 | 0 | 2 | 9 | 0 | 1 | 12 | 2 | 35 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **107** | **69** | **122** | **19** | **30** | **18** | **65** | **373** | **4** | **23** | **482** | **96** | **1408** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 11.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 11.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 36 | | | 38 | | 74 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **36** | **0** | **0** | **38** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **36** | **0** | **0** | **38** | **0** | **74** |
| **2020 Projected Volumes** | **107** | **69** | **122** | **19** | **30** | **18** | **65** | **409** | **4** | **23** | **520** | **96** | **1482** |
| Base growth (0.51% compounded for 10 yrs) | 5 | 3 | 6 | 1 | 2 | 1 | 3 | 19 | 0 | 1 | 25 | 5 | 71 |
| **2025 Base Volumes** | **109** | **70** | **125** | **20** | **31** | **19** | **66** | **383** | **4** | **23** | **495** | **99** | **1444** |
| **2025 Projected Volumes** | **109** | **70** | **125** | **20** | **31** | **19** | **66** | **419** | **4** | **23** | **533** | **99** | **1518** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | **123** | **52** | **161** | **9** | **41** | **21** | **108** | **290** | **4** | **23** | **175** | **118** | **1125** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **123** | **52** | **161** | **9** | **41** | **21** | **108** | **290** | **4** | **23** | **175** | **118** | **1125** |
| Base growth (0.51% compounded for 5 yrs) | 3 | 1 | 4 | 0 | 1 | 1 | 3 | 7 | 0 | 1 | 5 | 3 | 29 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **126** | **53** | **165** | **9** | **42** | **22** | **111** | **297** | **4** | **24** | **180** | **121** | **1154** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | | | 11.0% | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | | | | | 11.0% | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | | | | | | | 3.0% | | |
| CONV MARKET - Trip Assignment % - New Exit | | | | | | | | 3.0% | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | | | | | | | 42 | | | 50 | | 92 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **42** | **0** | **0** | **50** | **0** | |
| Total Trip Distribution - Design Year | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **42** | **0** | **0** | **50** | **0** | **92** |
| **2020 Projected Volumes** | **126** | **53** | **165** | **9** | **42** | **22** | **111** | **339** | **4** | **24** | **230** | **121** | **1246** |
| Base growth (0.51% compounded for 10 yrs) | 6 | 3 | 8 | 0 | 2 | 1 | 6 | 15 | 0 | 1 | 9 | 6 | 57 |
| **2025 Base Volumes** | **129** | **55** | **169** | **9** | **43** | **22** | **114** | **305** | **4** | **24** | **184** | **124** | **1182** |
| **2025 Projected Volumes** | **129** | **55** | **169** | **9** | **43** | **22** | **114** | **347** | **4** | **24** | **234** | **124** | **1274** |

**TPD# GMP.A.00030**
**9/30/2015**
**Traffic Volumes Worksheet**
**Intersection:** Eagle Road (EW) & West Rolling Road (S)
**Synchro Node:** 30 Adjacent intersections: West 0 East 0 North 0 South 0

**Time Period: Weekday A.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | | **235** | **27** | **42** | **437** | | **240** | | **314** | | | | **1295** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **235** | **27** | **42** | **437** | **0** | **240** | **0** | **314** | **0** | **0** | **0** | **1295** |
| Base growth (0.51% compounded for 5 yrs) | 0 | 6 | 1 | 1 | 11 | 0 | 6 | 0 | 8 | 0 | 0 | 0 | 33 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **241** | **28** | **43** | **448** | **0** | **246** | **0** | **322** | **0** | **0** | **0** | **1328** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 524 | (55) | ENTER = | 3 | | ENTER = | 50 | (83) |
| EXIT = | 198 | (55) | EXIT = | 89 | | EXIT = | 49 | (83) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 2.0% | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | 2.0% | 3.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 8.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 8.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 6.0% | | 2.0% | | 1.0% | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | 2.0% | 1.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 7 | 5 | 13 | 13 | | 11 | | 17 | | | | 66 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **7** | **5** | **13** | **13** | **0** | **11** | **0** | **17** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **7** | **5** | **13** | **13** | **0** | **11** | **0** | **17** | **0** | **0** | **0** | **66** |
| **2020 Projected Volumes** | **0** | **248** | **33** | **56** | **461** | **0** | **257** | **0** | **339** | **0** | **0** | **0** | **1394** |
| Base growth (0.51% compounded for 10 yrs) | 0 | 12 | 1 | 2 | 23 | 0 | 13 | 0 | 16 | 0 | 0 | 0 | 67 |
| **2025 Base Volumes** | **0** | **247** | **28** | **44** | **460** | **0** | **253** | **0** | **330** | **0** | **0** | **0** | **1362** |
| **2025 Projected Volumes** | **0** | **254** | **33** | **57** | **473** | **0** | **264** | **0** | **347** | **0** | **0** | **0** | **1428** |

**Time Period: Weekday P.M. Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | | **339** | **167** | **349** | **315** | | **40** | | **92** | | | | **1302** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **339** | **167** | **349** | **315** | **0** | **40** | **0** | **92** | **0** | **0** | **0** | **1302** |
| Base growth (0.51% compounded for 5 yrs) | 0 | 9 | 4 | 9 | 8 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 33 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **348** | **171** | **358** | **323** | **0** | **41** | **0** | **94** | **0** | **0** | **0** | **1335** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 920 | (347) | ENTER = | 69 | | ENTER = | 52 | (101) |
| EXIT = | 1070 | (347) | EXIT = | 22 | | EXIT = | 51 | (101) |

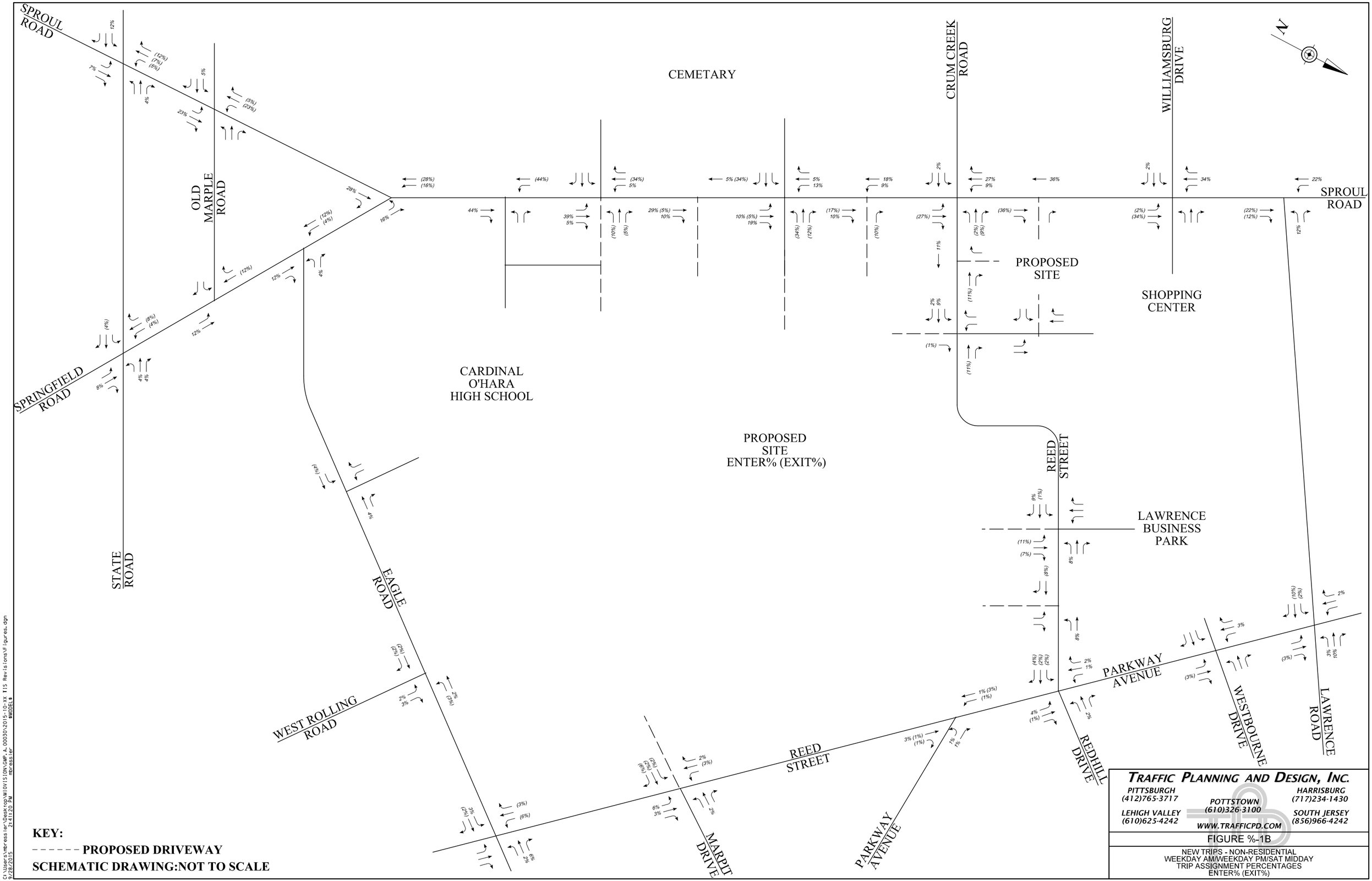
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 2.0% | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | 2.0% | 3.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 8.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 8.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 6.0% | | 2.0% | | 1.0% | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | 2.0% | 1.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 24 | 22 | 35 | 21 | | 19 | | 35 | | | | 156 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **24** | **22** | **35** | **21** | **0** | **19** | **0** | **35** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **24** | **22** | **35** | **21** | **0** | **19** | **0** | **35** | **0** | **0** | **0** | **156** |
| **2020 Projected Volumes** | **0** | **372** | **193** | **393** | **344** | **0** | **60** | **0** | **129** | **0** | **0** | **0** | **1491** |
| Base growth (0.51% compounded for 10 yrs) | 0 | 18 | 9 | 18 | 16 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 68 |
| **2025 Base Volumes** | **0** | **357** | **176** | **367** | **331** | **0** | **42** | **0** | **97** | **0** | **0** | **0** | **1370** |
| **2025 Projected Volumes** | **0** | **381** | **198** | **402** | **352** | **0** | **61** | **0** | **132** | **0** | **0** | **0** | **1526** |

**Time Period: Saturday Midday Peak Hour**

| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | Intersection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | left | thru | right | left | thru | right | left | thru | right | left | thru | right | Volume |
| **2015 Existing Counts** | | **195** | **43** | **121** | **294** | | **69** | | **123** | | | | **845** |
| Balancing | | | | | | | | | | | | | 0 |
| **Existing Volumes (Balanced)** | **0** | **195** | **43** | **121** | **294** | **0** | **69** | **0** | **123** | **0** | **0** | **0** | **845** |
| Base growth (0.51% compounded for 5 yrs) | 0 | 5 | 1 | 3 | 8 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 22 |
| Marple Associates (260+ksf) | | | | | | | | | | | | | 0 |
| Crozer Cancer Center (58.599 ksf medical office) | | | | | | | | | | | | | 0 |
| **2020 Base Volumes** | **0** | **200** | **44** | **124** | **302** | **0** | **71** | **0** | **126** | **0** | **0** | **0** | **867** |

| Non-Residential | | | Residential | | | Convenience Market | | |
|---|---|---|---|---|---|---|---|---|
| ENTER = | 1481 | (391) | ENTER = | 46 | | ENTER = | 37 | (45) |
| EXIT = | 1204 | (391) | EXIT = | 41 | | EXIT = | 33 | (45) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-RESIDENTIAL - Trip Assignment % - New Enter | | | | | 2.0% | | 2.0% | | 3.0% | | | | |
| NON-RESIDENTIAL - Trip Assignment % - New Exit | | 2.0% | 2.0% | 3.0% | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| NON-RESIDENTIAL - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| RESIDENTIAL - Trip Assignment % - New Enter | | | | | | | | | 8.0% | | | | |
| RESIDENTIAL - Trip Assignment % - New Exit | | | | 8.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - New Enter | | | | | 6.0% | | 2.0% | | 1.0% | | | | |
| CONV MARKET - Trip Assignment % - New Exit | | 6.0% | 2.0% | 1.0% | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Enter | | | | | | | | | | | | | |
| CONV MARKET - Trip Assignment % - Pass-by Exit | | | | | | | | | | | | | |
| **New Trips** | | 26 | 25 | 39 | 32 | | 31 | | 48 | | | | 201 |
| **Pass-by Trips** | | | | | | | | | | | | | 0 |
| **Re-Distribution (Reed Road Realignment - Opening Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Reed Road Realignment - Design Year)** | | | | | | | | | | | | | |
| **Re-Distribution (Don Guanella Relocation)** | | | | | | | | | | | | | |
| **Re-Distribution (Shared Access with Cardinal O'Hara)** | | | | | | | | | | | | | |
| Total Trip Distribution - Opening Year | **0** | **26** | **25** | **39** | **32** | **0** | **31** | **0** | **48** | **0** | **0** | **0** | |
| Total Trip Distribution - Design Year | **0** | **26** | **25** | **39** | **32** | **0** | **31** | **0** | **48** | **0** | **0** | **0** | **201** |
| **2020 Projected Volumes** | **0** | **226** | **69** | **163** | **334** | **0** | **102** | **0** | **174** | **0** | **0** | **0** | **1068** |
| Base growth (0.51% compounded for 10 yrs) | 0 | 10 | 2 | 6 | 15 | 0 | 4 | 0 | 6 | 0 | 0 | 0 | 43 |
| **2025 Base Volumes** | **0** | **205** | **45** | **127** | **309** | **0** | **73** | **0** | **129** | **0** | **0** | **0** | **888** |
| **2025 Projected Volumes** | **0** | **231** | **70** | **166** | **341** | **0** | **104** | **0** | **177** | **0** | **0** | **0** | **1089** |




**KEY:**

– – – – – – **PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

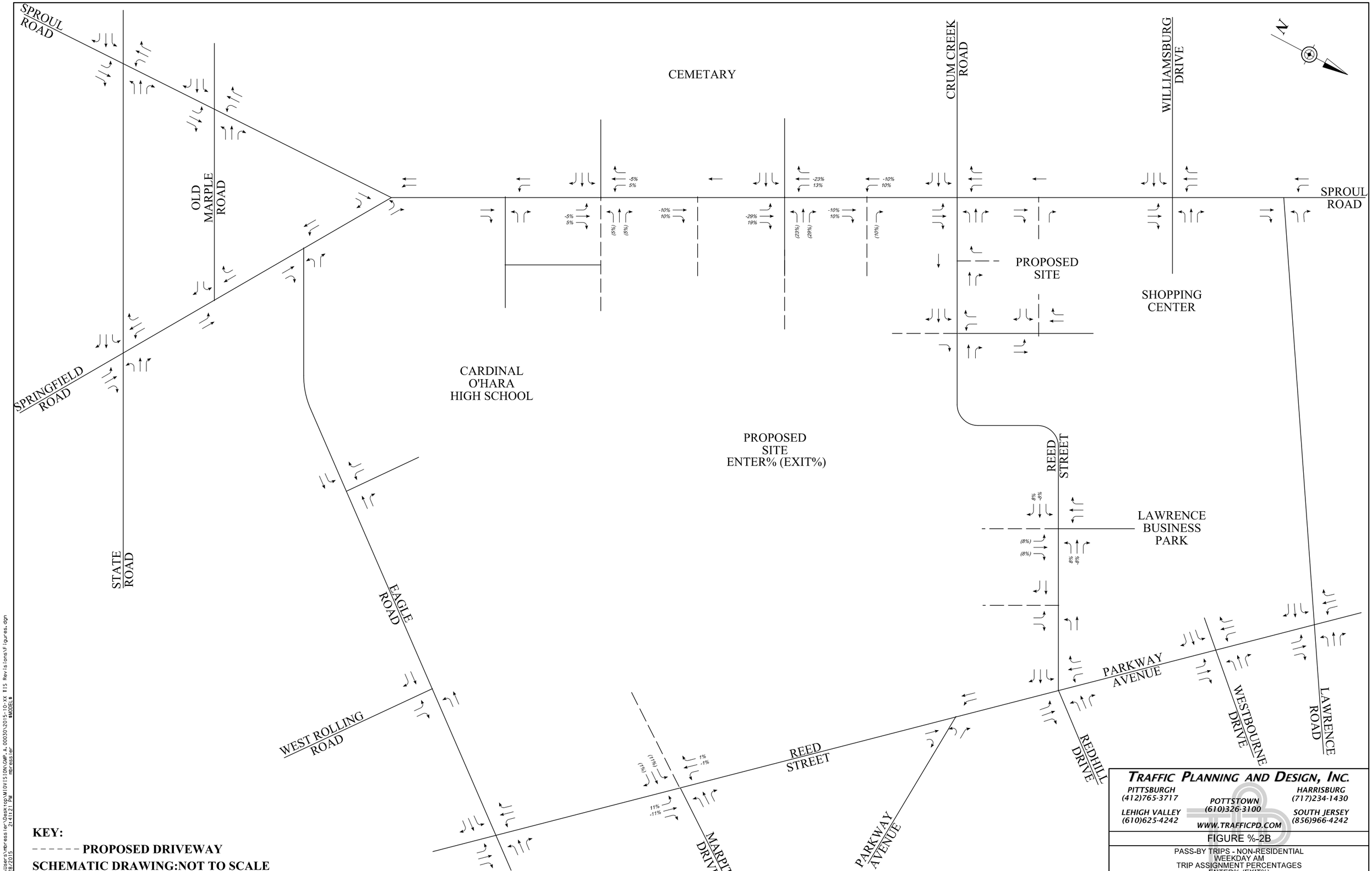

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
HARRISBURG (717)234-1430
POTTSTOWN (610)326-3100
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM


FIGURE %-1B

NEW TRIPS - NON-RESIDENTIAL
WEEKDAY AM/WEEKDAY PM/SAT MIDDAY
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)


C:\Users\mbressler\Desktop\MIDVISION\GMP A.00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:20 PM mbressler $MODEL$




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

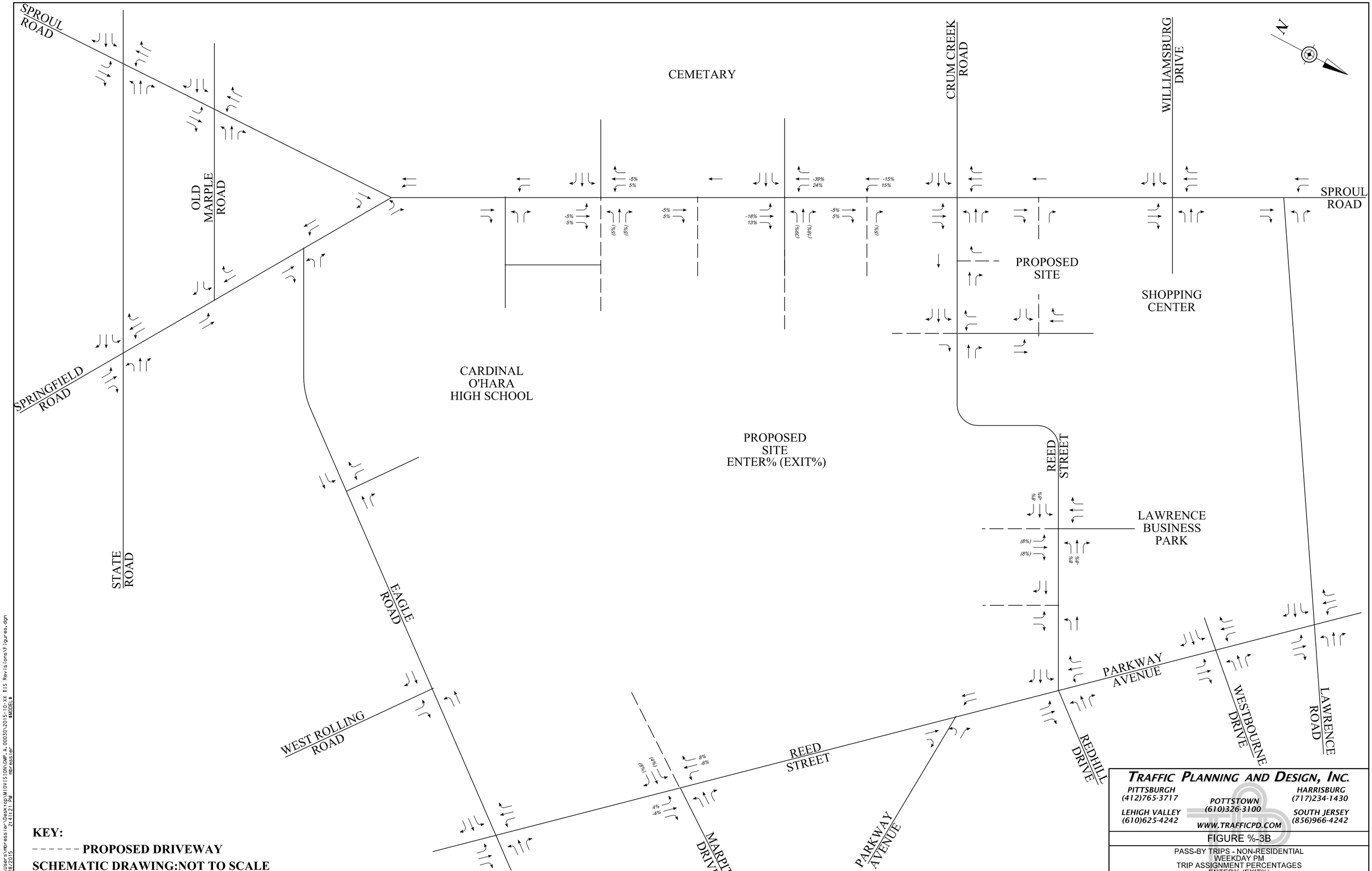
C:\Users\mbressler\Desktop\MIVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:21 PM mbressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE %-2B

PASS-BY TRIPS - NON-RESIDENTIAL
WEEKDAY AM
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

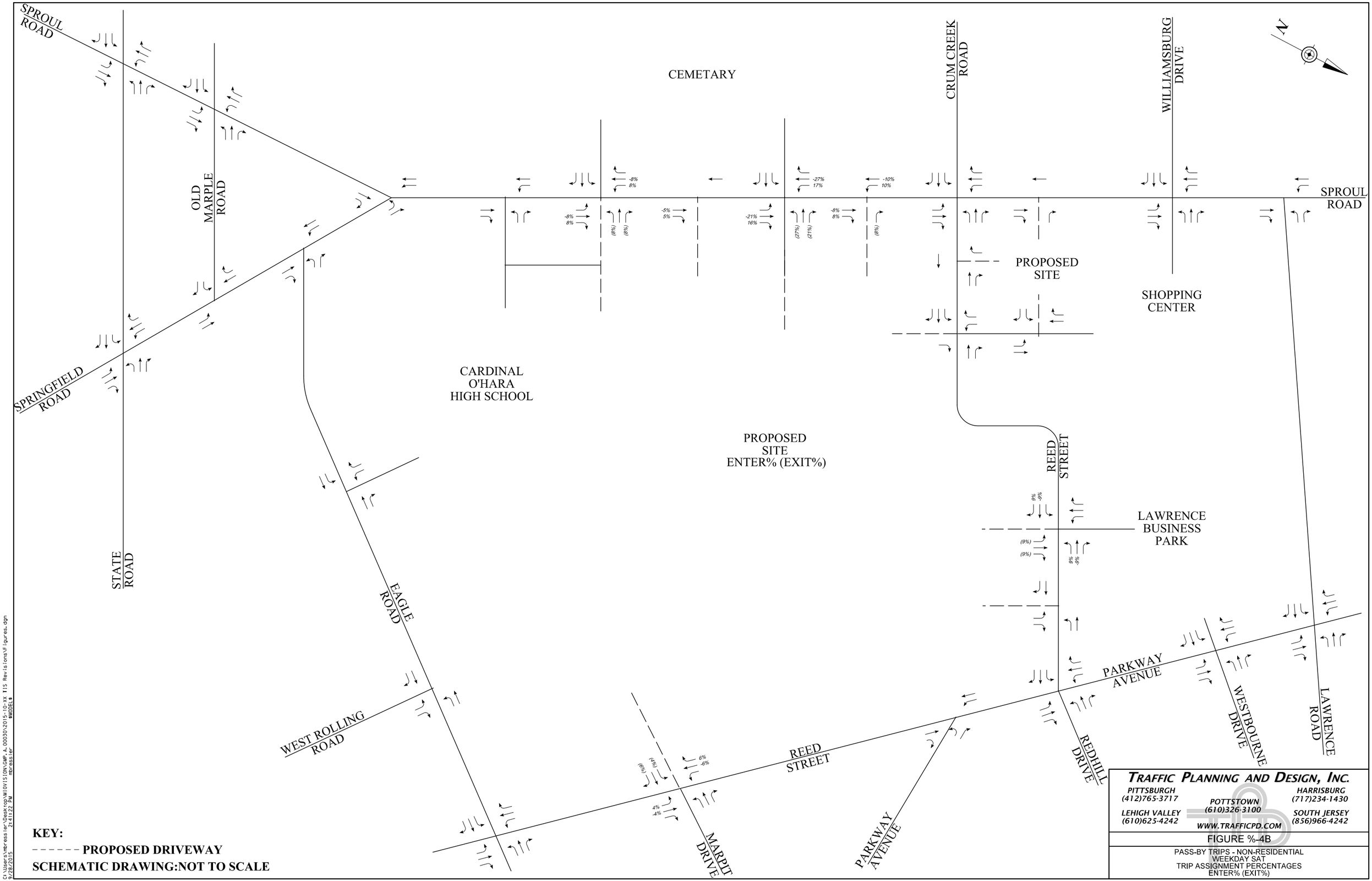

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

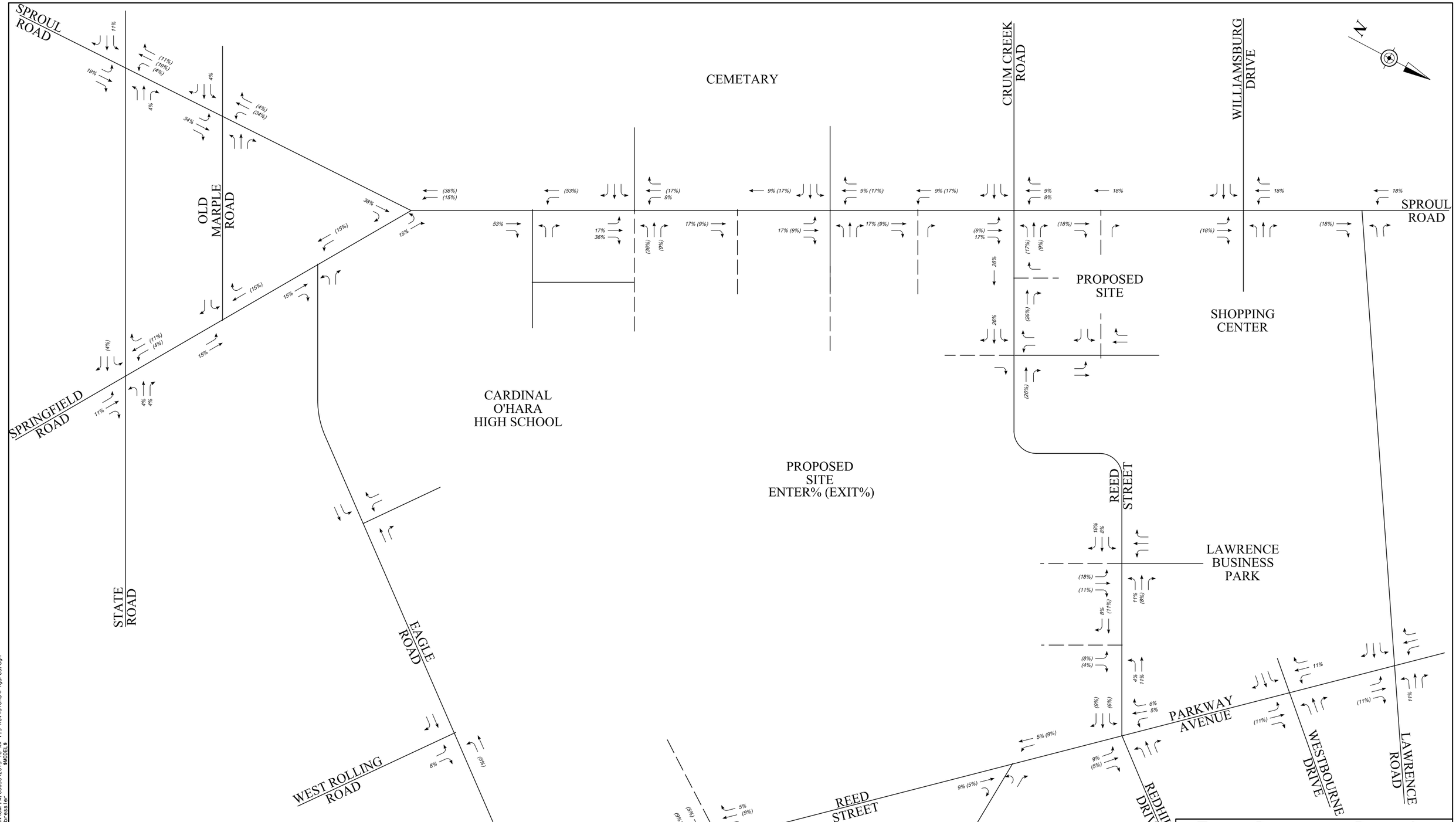

FIGURE %-3B

PASS-BY TRIPS - NON-RESIDENTIAL
WEEKDAY PM
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)


C:\Users\mbressler\Desktop\MIDVISION\GMP A.00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:21 PM mbressler $MODEL$




C:\Users\mbressler\Desktop\MIVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:22 PM mbressler $MODEL$




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

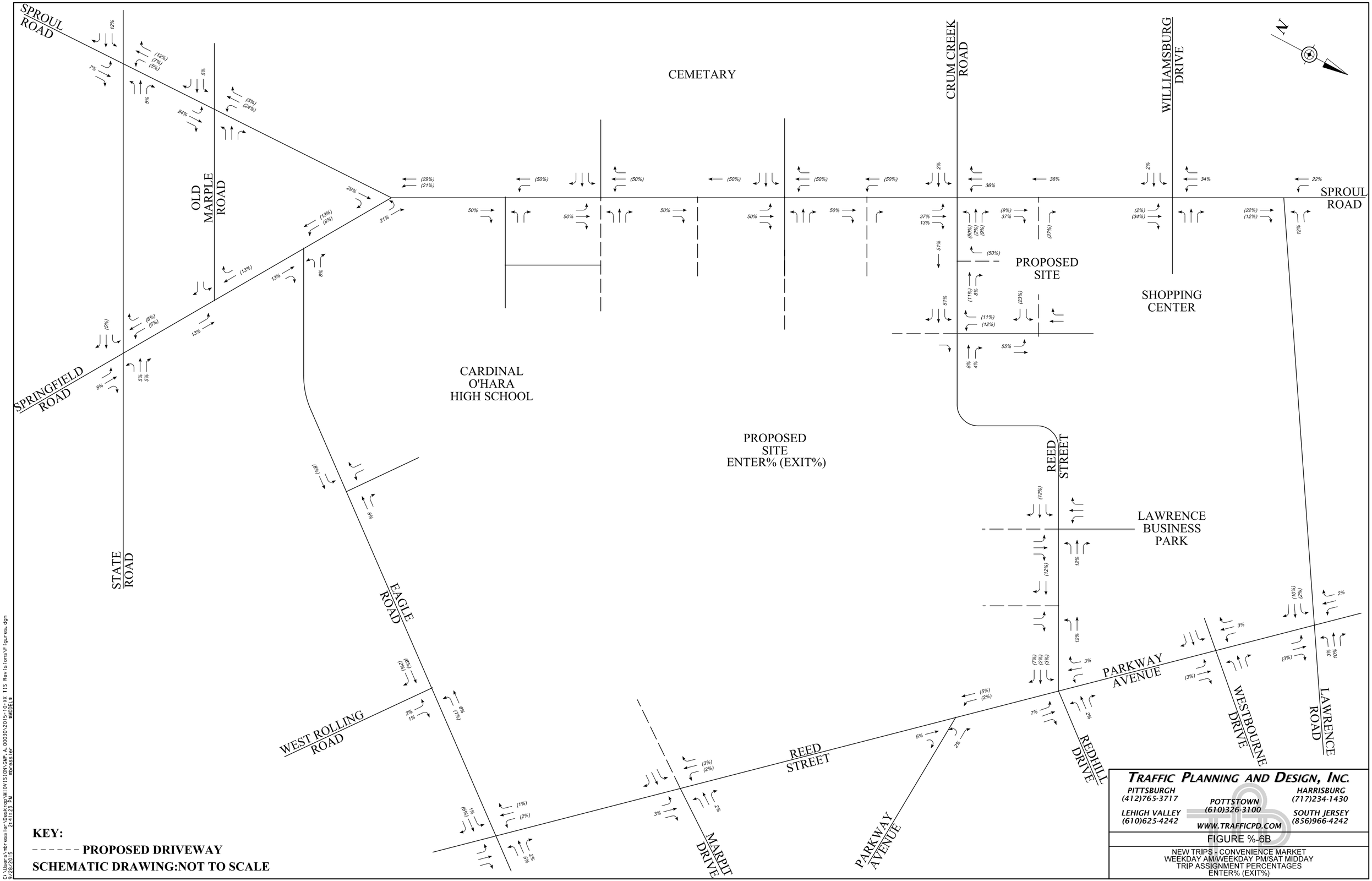

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM


FIGURE %-5B

NEW TRIPS - RESIDENTIAL
WEEKDAY AM/WEEKDAY PM/SAT MIDDAY
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)


C:\Users\mbressler\Desktop\MIDVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:22 PM mbressler $MODEL$




**KEY:**

- - - - - - **PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

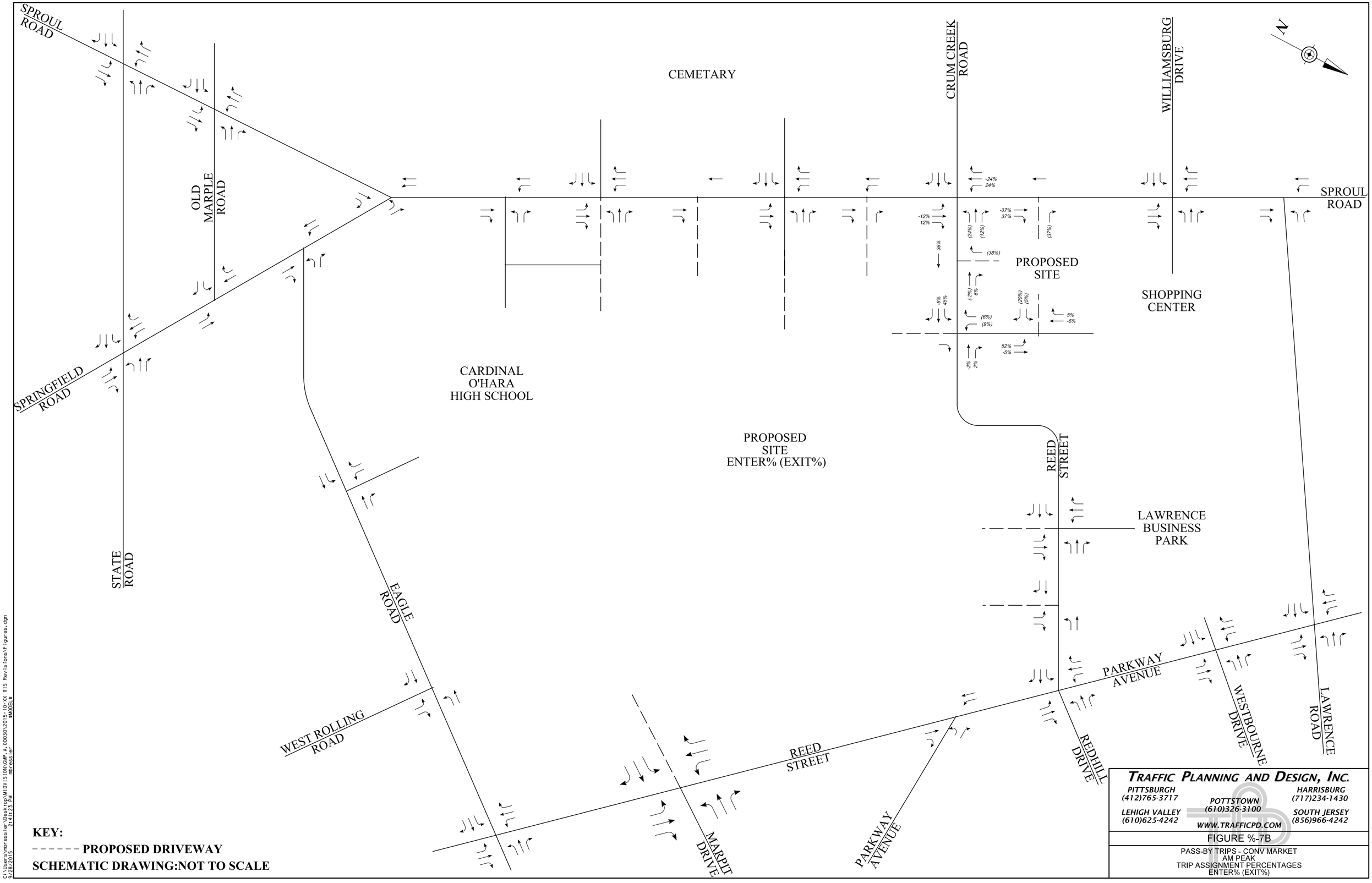

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM


FIGURE %-6B

NEW TRIPS - CONVENIENCE MARKET
WEEKDAY AM/WEEKDAY PM/SAT MIDDAY
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)


C:\Users\mbressler\Desktop\MIDVISION\GMP A.00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:23 PM mbressler $MODEL$




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

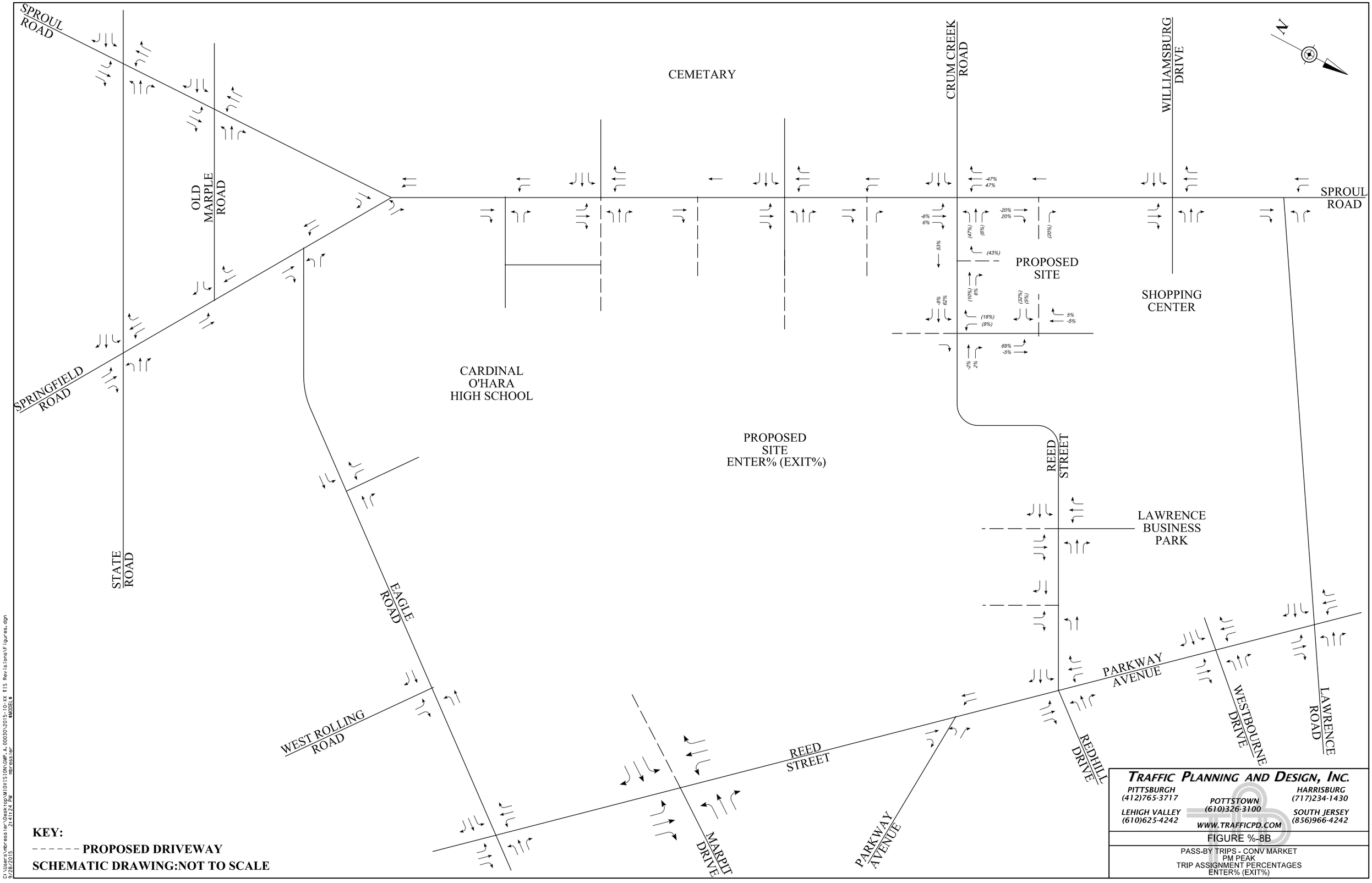
C:\Users\mbressler\Desktop\MIDVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:23 PM mbressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE %-7B

PASS-BY TRIPS - CONV MARKET
AM PEAK
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

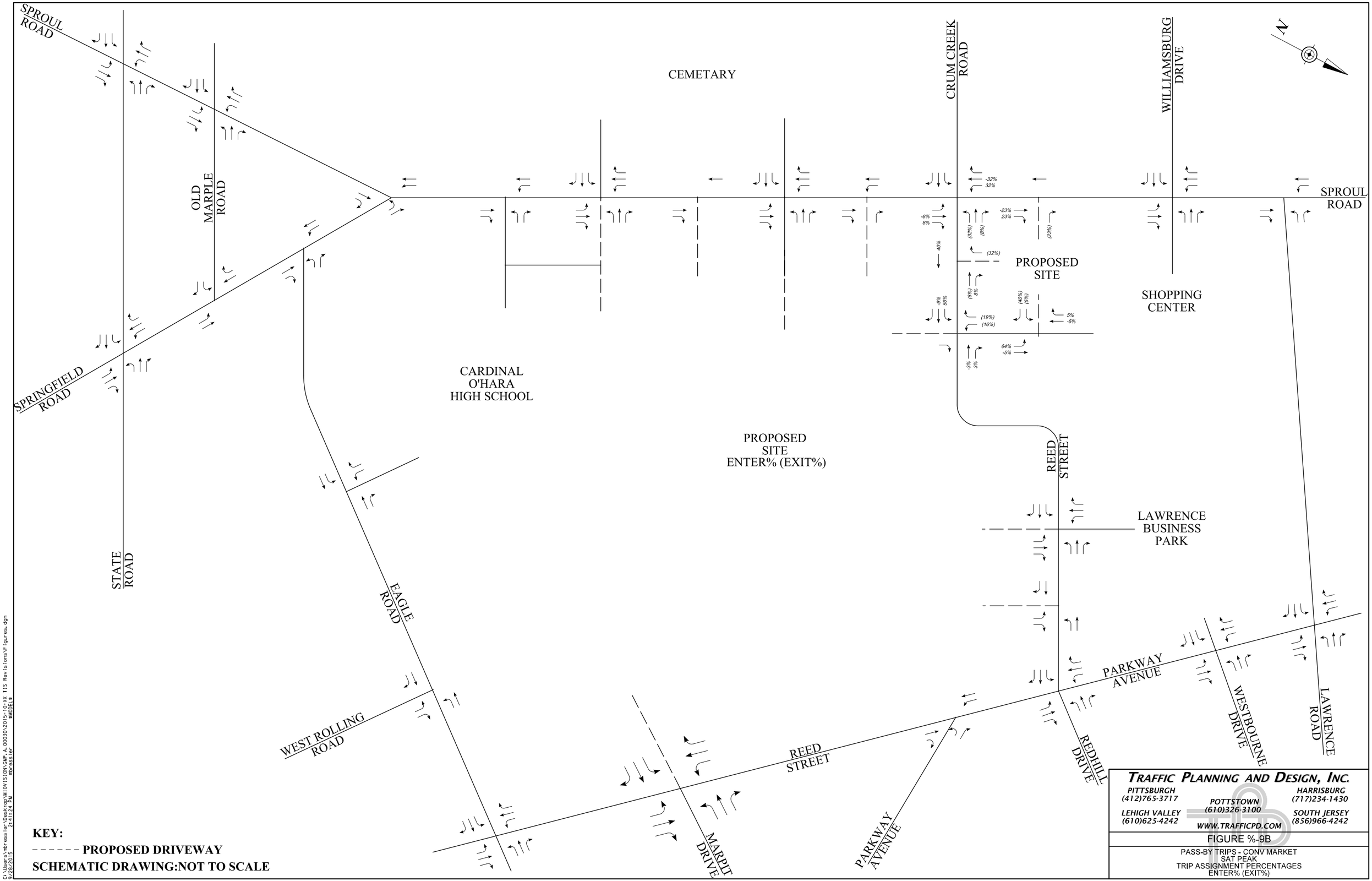
C:\Users\mbressler\Desktop\MIDVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:24 PM mbressler $MODEL$

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE %-8B

PASS-BY TRIPS - CONV MARKET
PM PEAK
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)




**KEY:**

**- - - - - - PROPOSED DRIVEWAY**

**SCHEMATIC DRAWING:NOT TO SCALE**

**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717
POTTSTOWN (610)326-3100
HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242
SOUTH JERSEY (856)966-4242
WWW.TRAFFICPD.COM

FIGURE %-9B

PASS-BY TRIPS - CONV MARKET
SAT PEAK
TRIP ASSIGNMENT PERCENTAGES
ENTER% (EXIT%)

C:\Users\mbressler\Desktop\MIDVISION\GMP_A_00030\2015-10-XX TIS Revisions\Figures.dgn
9/28/2015 2:41:24 PM mbressler $MODEL$

# APPENDIX J

***CAPACITY ANALYSIS***

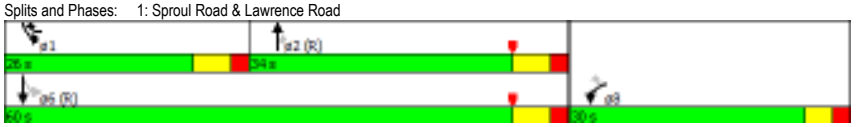
# *2014 EXISTING CONDITIONS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 262 | 604 | 1180 | 325 | 365 | 737 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 30.0 | 26.0 | 34.0 | 34.0 | 26.0 | 60.0 |
| Total Split (%) | 33.3% | 28.9% | 37.8% | 37.8% | 28.9% | 66.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 262 | 604 | 1180 | 325 | 365 | 737 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1713 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 267 | 548 | 1204 | 240 | 372 | 752 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 458 | 729 | 1044 | 523 | 439 | 2111 |
| Arrive On Green | 0.29 | 0.29 | 0.36 | 0.36 | 0.20 | 0.61 |
| Sat Flow, veh/h | 1585 | 1456 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 267 | 548 | 1204 | 240 | 372 | 752 |
| Grp Sat Flow(s),veh/h/ln | 1585 | 1456 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 13.0 | 26.0 | 32.1 | 10.8 | 13.9 | 9.7 |
| Cycle Q Clear(g_c), s | 13.0 | 26.0 | 32.1 | 10.8 | 13.9 | 9.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 458 | 729 | 1044 | 523 | 439 | 2111 |
| V/C Ratio(X) | 0.58 | 0.75 | 1.15 | 0.46 | 0.85 | 0.36 |
| Avail Cap(c_a), veh/h | 458 | 710 | 1156 | 543 | 496 | 2111 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.55 | 0.55 | 0.67 | 0.67 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.7 | 18.0 | 30.5 | 23.0 | 25.0 | 8.7 |
| Incr Delay (d2), s/veh | 1.0 | 2.6 | 76.6 | 1.9 | 11.9 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.7 | 0.0 | 14.8 | 0.0 | 1.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.2 | 15.4 | 45.7 | 7.9 | 15.9 | 8.3 |
| LnGrp Delay(d),s/veh | 29.4 | 20.6 | 121.9 | 25.0 | 37.9 | 9.2 |
| LnGrp LOS | C | C | F | C | D | A |
| Approach Vol, veh/h | 815 | | 1444 | | | 1124 |
| Approach Delay, s/veh | 23.5 | | 105.8 | | | 18.7 |
| Approach LOS | C | | F | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.9 | 37.1 | | | | 60.0 | | 30.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 20.0 | 28.0 | | | | 54.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 16.4 | 34.6 | | | | 12.2 | | 28.5 |
| Green Ext Time (p_c), s | 0.5 | 0.0 | | | | 14.3 | | 0.0 |

**Intersection Summary**

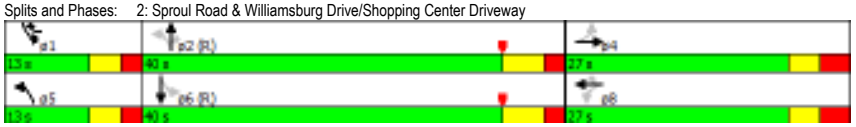
HCM 2010 Ctrl Delay 57.0
HCM 2010 LOS E

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 39 | 15 | 25 | 70 | 6 | 77 | 20 | 1443 | 79 | 81 | 1058 | 17 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | 13.0 | 13.0 | 40.0 | 40.0 | 13.0 | 40.0 | |
| Total Split (%) | 33.8% | 33.8% | | 33.8% | 33.8% | 16.3% | 16.3% | 50.0% | 50.0% | 16.3% | 50.0% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 73 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 39 | 15 | 25 | 70 | 6 | 77 | 20 | 1443 | 79 | 81 | 1058 | 17 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1713 | 1800 | 1764 | 1739 | 1696 | 1764 | 1696 | 1781 | 1748 | 1712 | 1800 |
| Adj Flow Rate, veh/h | 41 | 16 | 25 | 73 | 6 | 73 | 21 | 1503 | 0 | 84 | 1102 | 16 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 3 | 3 | 5 | 5 |
| Cap, veh/h | 114 | 48 | 41 | 237 | 16 | 272 | 369 | 2051 | 964 | 380 | 2177 | 32 |
| Arrive On Green | 0.12 | 0.14 | 0.12 | 0.12 | 0.14 | 0.14 | 0.05 | 1.00 | 0.00 | 0.05 | 0.66 | 0.65 |
| Sat Flow, veh/h | 342 | 356 | 306 | 1114 | 121 | 1442 | 1680 | 3223 | 1514 | 1664 | 3283 | 48 |
| Grp Volume(v), veh/h | 82 | 0 | 0 | 79 | 0 | 73 | 21 | 1503 | 0 | 84 | 546 | 572 |
| Grp Sat Flow(s),veh/h/ln | 1005 | 0 | 0 | 1234 | 0 | 1442 | 1680 | 1611 | 1514 | 1664 | 1627 | 1704 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 | 0.3 | 0.0 | 0.0 | 1.3 | 13.6 | 13.6 |
| Cycle Q Clear(g_c), s | 7.2 | 0.0 | 0.0 | 4.9 | 0.0 | 3.5 | 0.3 | 0.0 | 0.0 | 1.3 | 13.6 | 13.6 |
| Prop In Lane | 0.50 | | 0.30 | 0.92 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 191 | 0 | 0 | 238 | 0 | 272 | 369 | 2051 | 964 | 380 | 1079 | 1130 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.00 | 0.33 | 0.00 | 0.27 | 0.06 | 0.73 | 0.00 | 0.22 | 0.51 | 0.51 |
| Avail Cap(c_a), veh/h | 380 | 0 | 0 | 419 | 0 | 473 | 513 | 2051 | 964 | 485 | 1079 | 1130 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.35 | 0.35 | 0.00 | 0.90 | 0.90 | 0.90 |
| Uniform Delay (d), s/veh | 33.3 | 0.0 | 0.0 | 32.4 | 0.0 | 27.7 | 5.3 | 0.0 | 0.0 | 4.2 | 6.8 | 6.8 |
| Incr Delay (d2), s/veh | 1.5 | 0.0 | 0.0 | 0.8 | 0.0 | 0.5 | 0.0 | 0.8 | 0.0 | 0.3 | 1.5 | 1.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.3 | 0.0 | 0.0 | 3.1 | 0.0 | 2.6 | 0.3 | 0.5 | 0.0 | 1.1 | 10.5 | 10.9 |
| LnGrp Delay(d),s/veh | 34.9 | 0.0 | 0.0 | 33.2 | 0.0 | 28.3 | 5.3 | 0.9 | 0.0 | 4.5 | 8.4 | 8.3 |
| LnGrp LOS | C | | | C | | C | A | A | | A | A | A |
| Approach Vol, veh/h | | 82 | | | 152 | | | 1524 | | | 1202 | |
| Approach Delay, s/veh | | 34.9 | | | 30.8 | | | 1.0 | | | 8.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.3 | 55.9 | | 15.8 | 6.1 | 58.1 | | 15.8 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 34.0 | | 21.0 | 8.0 | 34.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 3.8 | 2.5 | | 9.2 | 2.8 | 16.1 | | 6.9 |
| Green Ext Time (p_c), s | 0.1 | 16.4 | | 0.7 | 0.0 | 11.7 | | 0.7 |

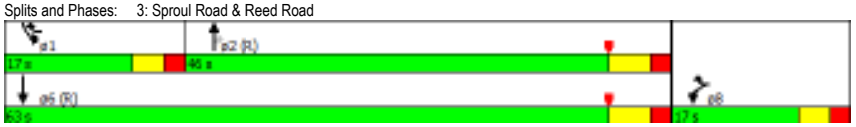
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 6.3 |
| HCM 2010 LOS | A |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 171 | 163 | 1473 | 264 | 155 | 1015 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 404 | | 187 | | | 884 |
| Travel Time (s) | 7.9 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 8% | 10% | 3% | 3% | 6% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 17.0 | | 46.0 | 46.0 | 17.0 | 63.0 |
| Total Split (%) | 21.3% | | 57.5% | 57.5% | 21.3% | 78.8% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 26 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 171 | 163 | 1473 | 264 | 155 | 1015 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 1 | 3 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1700 | 1669 | 1713 | 1713 | 1732 | 1765 |
| Adj Flow Rate, veh/h | 188 | 179 | 1619 | 246 | 170 | 1115 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 8 | 10 | 3 | 3 | 6 | 4 |
| Cap, veh/h | 253 | 415 | 1772 | 793 | 225 | 2453 |
| Arrive On Green | 0.16 | 0.16 | 0.55 | 0.55 | 0.27 | 1.00 |
| Sat Flow, veh/h | 1619 | 1419 | 3340 | 1456 | 1650 | 3443 |
| Grp Volume(v), veh/h | 188 | 179 | 1619 | 246 | 170 | 1115 |
| Grp Sat Flow(s),veh/h/ln | 1619 | 1419 | 1627 | 1456 | 1650 | 1677 |
| Q Serve(g_s), s | 8.9 | 8.2 | 36.0 | 7.4 | 7.6 | 0.0 |
| Cycle Q Clear(g_c), s | 8.9 | 8.2 | 36.0 | 7.4 | 7.6 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 253 | 415 | 1772 | 793 | 225 | 2453 |
| V/C Ratio(X) | 0.74 | 0.43 | 0.91 | 0.31 | 0.76 | 0.45 |
| Avail Cap(c_a), veh/h | 263 | 424 | 1774 | 794 | 268 | 2454 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.87 | 0.87 |
| Uniform Delay (d), s/veh | 32.3 | 23.0 | 16.6 | 10.0 | 27.9 | 0.0 |
| Incr Delay (d2), s/veh | 10.4 | 0.7 | 8.8 | 1.0 | 8.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.4 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.4 | 6.1 | 25.5 | 5.7 | 7.0 | 0.3 |
| LnGrp Delay(d),s/veh | 43.2 | 23.8 | 25.7 | 11.0 | 36.4 | 0.5 |
| LnGrp LOS | D | C | C | B | D | A |
| Approach Vol, veh/h | 367 | | 1865 | | | 1285 |
| Approach Delay, s/veh | 33.7 | | 23.7 | | | 5.3 |
| Approach LOS | C | | C | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.9 | 48.6 | | | | 63.5 | | 16.5 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 40.0 | | | | 57.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | 10.1 | 38.5 | | | | 2.5 | | 11.4 |
| Green Ext Time (p_c), s | 0.1 | 1.4 | | | | 27.2 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.0 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 761 | 1178 | 0 | 300 | 762 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 801 | 1240 | 0 | 316 | 802 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 43.0 | 37.0 | | 43.0 | 80.0 |
| Total Split (%) | | 53.8% | 46.3% | | 53.8% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | | 9.0 | 8.0 | | 9.0 | 8.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 30.5 | 32.5 | | 30.5 | 80.0 |
| Actuated g/C Ratio | | 0.38 | 0.41 | | 0.38 | 1.00 |
| v/c Ratio | | 0.82 | 0.89 | | 0.51 | 0.48 |
| Control Delay | | 22.9 | 12.4 | | 18.4 | 1.3 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 22.9 | 12.4 | | 18.4 | 1.3 |
| LOS | | C | B | | B | A |
| Approach Delay | | | 12.4 | | | 6.1 |
| Approach LOS | | | B | | | A |
| Queue Length 50th (ft) | | 230 | 86 | | 131 | 0 |
| Queue Length 95th (ft) | | m243 | m71 | | m197 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1095 | 1393 | | 688 | 1672 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.73 | 0.89 | | 0.46 | 0.48 |

**Intersection Summary**

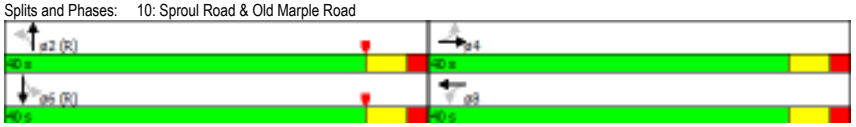
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 12.8 — Intersection LOS: B
Intersection Capacity Utilization 76.6% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 103 | 72 | 37 | 210 | 231 | 1 | 164 | 1011 | 39 | 1 | 701 | 127 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 103 | 72 | 37 | 210 | 231 | 1 | 164 | 1011 | 39 | 1 | 701 | 127 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1801 | 1818 | 1782 | 1714 | 1782 | 1773 | 1718 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 110 | 77 | 34 | 223 | 246 | 1 | 174 | 1076 | 32 | 1 | 746 | 106 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 |
| Cap, veh/h | 280 | 187 | 73 | 309 | 285 | 1 | 97 | 1102 | 30 | 45 | 1336 | 200 |
| Arrive On Green | 0.37 | 0.38 | 0.37 | 0.37 | 0.38 | 0.37 | 0.48 | 0.49 | 0.48 | 0.48 | 0.49 | 0.48 |
| Sat Flow, veh/h | 553 | 488 | 189 | 631 | 744 | 3 | 215 | 2018 | 67 | 0 | 2753 | 408 |
| Grp Volume(v), veh/h | 221 | 0 | 0 | 470 | 0 | 0 | 544 | 0 | 738 | 456 | 0 | 397 |
| Grp Sat Flow(s),veh/h/ln | 1230 | 0 | 0 | 1378 | 0 | 0 | 748 | 0 | 1552 | 1632 | 0 | 1529 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 15.7 | 0.0 | 0.0 | 24.0 | 0.0 | 36.9 | 1.0 | 0.0 | 14.3 |
| Cycle Q Clear(g_c), s | 10.4 | 0.0 | 0.0 | 26.1 | 0.0 | 0.0 | 38.3 | 0.0 | 36.9 | 37.9 | 0.0 | 14.3 |
| Prop In Lane | 0.50 | | 0.15 | 0.47 | | 0.00 | 0.32 | | 0.04 | 0.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 524 | 0 | 0 | 578 | 0 | 0 | 514 | 0 | 763 | 810 | 0 | 752 |
| V/C Ratio(X) | 0.42 | 0.00 | 0.00 | 0.81 | 0.00 | 0.00 | 1.06 | 0.00 | 0.97 | 0.56 | 0.00 | 0.53 |
| Avail Cap(c_a), veh/h | 596 | 0 | 0 | 654 | 0 | 0 | 418 | 0 | 763 | 827 | 0 | 751 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.4 | 0.0 | 0.0 | 23.6 | 0.0 | 0.0 | 26.7 | 0.0 | 19.8 | 14.1 | 0.0 | 14.1 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 7.0 | 0.0 | 0.0 | 55.9 | 0.0 | 25.6 | 2.8 | 0.0 | 2.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.9 | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 35.9 | 0.0 | 28.8 | 12.2 | 0.0 | 10.7 |
| LnGrp Delay(d),s/veh | 18.9 | 0.0 | 0.0 | 30.6 | 0.0 | 0.0 | 89.2 | 0.0 | 45.8 | 16.9 | 0.0 | 16.7 |
| LnGrp LOS | B | | | C | | | F | | D | B | | B |
| Approach Vol, veh/h | | 221 | | | 470 | | | 1282 | | | 853 | |
| Approach Delay, s/veh | | 18.9 | | | 30.6 | | | 64.2 | | | 16.8 | |
| Approach LOS | | B | | | C | | | E | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 44.3 | | 35.7 | | 44.3 | | 35.7 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 34.0 | | 34.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | | 40.3 | | 12.4 | | 39.9 | | 28.1 |
| Green Ext Time (p_c), s | | 0.0 | | 2.8 | | 0.0 | | 1.6 |

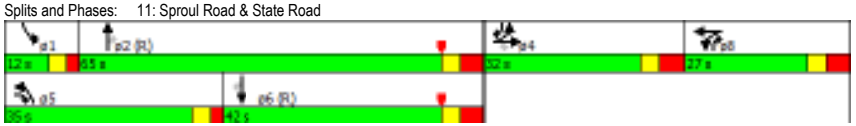
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 40.8 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 251 | 15 | 303 | 160 | 70 | 36 | 463 | 1063 | 314 | 5 | 528 | 373 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 47% | | | 16% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 32.0 | 32.0 | 35.0 | 27.0 | 27.0 | | 35.0 | 65.0 | 27.0 | 12.0 | 42.0 | 32.0 |
| Total Split (%) | 23.5% | 23.5% | 25.7% | 19.9% | 19.9% | | 25.7% | 47.8% | 19.9% | 8.8% | 30.9% | 23.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 136
Actuated Cycle Length: 136
Offset: 34 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 251 | 15 | 303 | 160 | 70 | 36 | 463 | 1063 | 314 | 5 | 528 | 373 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1791 | 1844 | 1872 | 1815 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 272 | 0 | 0 | 120 | 139 | 0 | 482 | 1107 | 0 | 5 | 550 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 375 | 0 | 525 | 185 | 188 | 0 | 387 | 2089 | 1081 | 19 | 1328 | 760 |
| Arrive On Green | 0.11 | 0.00 | 0.00 | 0.10 | 0.10 | 0.00 | 0.23 | 0.62 | 0.00 | 0.01 | 0.40 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1815 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 272 | 0 | 0 | 120 | 139 | 0 | 482 | 1107 | 0 | 5 | 550 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1815 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 10.2 | 0.0 | 0.0 | 8.8 | 10.1 | 0.0 | 31.0 | 25.3 | 0.0 | 0.4 | 16.2 | 0.0 |
| Cycle Q Clear(g_c), s | 10.2 | 0.0 | 0.0 | 8.8 | 10.1 | 0.0 | 31.0 | 25.3 | 0.0 | 0.4 | 16.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 375 | 0 | 525 | 185 | 188 | 0 | 387 | 2089 | 1081 | 19 | 1328 | 760 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.00 | 0.65 | 0.74 | 0.00 | 1.25 | 0.53 | 0.00 | 0.26 | 0.41 | 0.00 |
| Avail Cap(c_a), veh/h | 672 | 0 | 657 | 275 | 280 | 0 | 387 | 2089 | 1081 | 101 | 1328 | 760 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 58.8 | 0.0 | 0.0 | 58.6 | 59.2 | 0.0 | 52.5 | 14.8 | 0.0 | 66.7 | 29.3 | 0.0 |
| Incr Delay (d2), s/veh | 2.7 | 0.0 | 0.0 | 3.8 | 5.6 | 0.0 | 130.6 | 1.0 | 0.0 | 7.1 | 1.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 43.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.8 | 0.0 | 0.0 | 8.0 | 9.2 | 0.0 | 57.4 | 17.8 | 0.0 | 0.4 | 12.1 | 0.0 |
| LnGrp Delay(d),s/veh | 61.5 | 0.0 | 0.0 | 62.4 | 64.8 | 0.0 | 226.5 | 15.8 | 0.0 | 73.7 | 30.3 | 0.0 |
| LnGrp LOS | E | | | E | E | | F | B | | E | C | |
| Approach Vol, veh/h | | 272 | | | 259 | | | 1589 | | | 555 | |
| Approach Delay, s/veh | | 61.5 | | | 63.7 | | | 79.7 | | | 30.7 | |
| Approach LOS | | E | | | E | | | E | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 5.5 | 89.9 | | 20.5 | 35.0 | 60.4 | | 20.1 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 7.0 | 58.0 | | 25.0 | 30.0 | 35.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 27.8 | | 12.7 | 33.5 | 18.7 | | 12.6 |
| Green Ext Time (p_c), s | 0.0 | 8.8 | | 0.8 | 0.0 | 7.0 | | 0.5 |

**Intersection Summary**

HCM 2010 Ctrl Delay 66.1
HCM 2010 LOS E

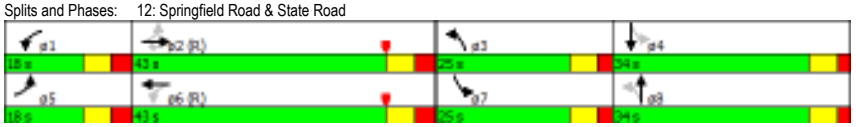
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 206 | 978 | 294 | 12 | 1153 | 121 | 465 | 479 | 28 | 97 | 270 | 75 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 10% | 4% | 8% | 25% | 3% | 6% | 3% | 3% | 0% | 2% | 7% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 18.0 | 43.0 | 43.0 | 18.0 | 43.0 | | 25.0 | 34.0 | | 25.0 | 34.0 | |
| Total Split (%) | 15.0% | 35.8% | 35.8% | 15.0% | 35.8% | | 20.8% | 28.3% | | 20.8% | 28.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 206 | 978 | 294 | 12 | 1153 | 121 | 465 | 479 | 28 | 97 | 270 | 75 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 2 | 0 | 0 | 7 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1685 | 1783 | 1717 | 1397 | 1690 | 1746 | 1756 | 1759 | 1809 | 1791 | 1704 | 1827 |
| Adj Flow Rate, veh/h | 212 | 1008 | 0 | 12 | 1189 | 0 | 479 | 494 | 0 | 100 | 278 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 10 | 4 | 8 | 25 | 3 | 3 | 3 | 3 | 3 | 2 | 7 | 7 |
| Cap, veh/h | 221 | 1489 | 604 | 122 | 990 | 0 | 339 | 515 | 0 | 186 | 330 | 0 |
| Arrive On Green | 0.10 | 0.44 | 0.00 | 0.02 | 0.36 | 0.00 | 0.17 | 0.28 | 0.00 | 0.07 | 0.19 | 0.00 |
| Sat Flow, veh/h | 1605 | 3387 | 1459 | 1330 | 3296 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Grp Volume(v), veh/h | 212 | 1008 | 0 | 12 | 1189 | 0 | 479 | 494 | 0 | 100 | 278 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1605 | 1694 | 1459 | 1330 | 1606 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Q Serve(g_s), s | 11.3 | 28.4 | 0.0 | 0.7 | 43.0 | 0.0 | 20.0 | 33.5 | 0.0 | 5.5 | 18.9 | 0.0 |
| Cycle Q Clear(g_c), s | 11.3 | 28.4 | 0.0 | 0.7 | 43.0 | 0.0 | 20.0 | 33.5 | 0.0 | 5.5 | 18.9 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 221 | 1489 | 604 | 122 | 990 | 0 | 339 | 515 | 0 | 186 | 330 | 0 |
| V/C Ratio(X) | 0.96 | 0.68 | 0.00 | 0.10 | 1.20 | 0.00 | 1.41 | 0.96 | 0.00 | 0.54 | 0.84 | 0.00 |
| Avail Cap(c_a), veh/h | 221 | 1494 | 644 | 278 | 1150 | 0 | 374 | 500 | 0 | 349 | 412 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 33.7 | 26.9 | 0.0 | 29.5 | 41.5 | 0.0 | 36.1 | 42.2 | 0.0 | 35.0 | 46.8 | 0.0 |
| Incr Delay (d2), s/veh | 49.6 | 2.5 | 0.0 | 0.3 | 100.1 | 0.0 | 202.9 | 30.2 | 0.0 | 2.4 | 12.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 47.9 | 0.0 | 0.0 | 0.0 | 20.9 | 0.0 | 29.4 | 10.4 | 0.0 | 0.0 | 0.4 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.5 | 20.2 | 0.0 | 0.5 | 57.7 | 0.0 | 58.5 | 30.2 | 0.0 | 4.7 | 15.4 | 0.0 |
| LnGrp Delay(d),s/veh | 131.2 | 29.5 | 0.0 | 29.8 | 162.5 | 0.0 | 268.4 | 82.8 | 0.0 | 37.4 | 59.5 | 0.0 |
| LnGrp LOS | F | C | | C | F | | F | F | | D | E | |
| Approach Vol, veh/h | | 1220 | | | 1201 | | | 973 | | | 378 | |
| Approach Delay, s/veh | | 47.1 | | | 161.2 | | | 174.2 | | | 53.7 | |
| Approach LOS | | D | | | F | | | F | | | D | |

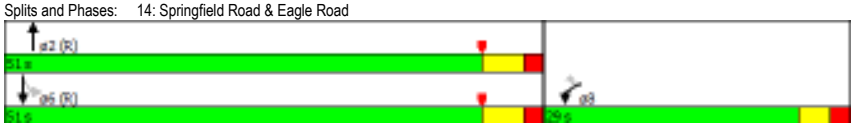
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.1 | 58.9 | 25.0 | 28.0 | 18.0 | 49.0 | 13.9 | 39.1 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 11.0 | 36.0 | 19.0 | 28.0 | 11.0 | 36.0 | 19.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 30.9 | 22.5 | 21.4 | 13.8 | 45.5 | 8.0 | 36.0 |
| Green Ext Time (p_c), s | 0.0 | 3.9 | 0.0 | 0.6 | 0.0 | 0.0 | 0.2 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 116.9 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 559 | 237 | 535 | 267 | 21 | 293 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 29.0 | 29.0 | 51.0 | | 51.0 | 51.0 |
| Total Split (%) | 36.3% | 36.3% | 63.8% | | 63.8% | 63.8% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 40 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 559 | 237 | 535 | 267 | 21 | 293 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1757 | 1791 | 1739 | 1791 | 1809 | 1738 |
| Adj Flow Rate, veh/h | 608 | 185 | 582 | 247 | 23 | 318 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 2 | 4 | 4 |
| Cap, veh/h | 523 | 476 | 766 | 279 | 55 | 582 |
| Arrive On Green | 0.31 | 0.31 | 0.57 | 0.56 | 0.56 | 0.57 |
| Sat Flow, veh/h | 1673 | 1523 | 1160 | 492 | 25 | 1189 |
| Grp Volume(v), veh/h | 608 | 185 | 0 | 829 | 341 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1673 | 1523 | 0 | 1652 | 1213 | 0 |
| Q Serve(g_s), s | 25.0 | 7.6 | 0.0 | 34.3 | 3.6 | 0.0 |
| Cycle Q Clear(g_c), s | 25.0 | 7.6 | 0.0 | 34.3 | 37.9 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.30 | 0.07 | |
| Lane Grp Cap(c), veh/h | 523 | 476 | 0 | 951 | 625 | 0 |
| V/C Ratio(X) | 1.16 | 0.39 | 0.00 | 0.87 | 0.55 | 0.00 |
| Avail Cap(c_a), veh/h | 523 | 476 | 0 | 950 | 731 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.85 | 0.00 |
| Uniform Delay (d), s/veh | 27.5 | 21.5 | 0.0 | 14.7 | 14.8 | 0.0 |
| Incr Delay (d2), s/veh | 92.6 | 0.5 | 0.0 | 10.9 | 2.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 23.3 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 48.9 | 5.9 | 0.0 | 25.5 | 8.8 | 0.0 |
| LnGrp Delay(d),s/veh | 143.4 | 22.0 | 0.0 | 25.6 | 17.7 | 0.0 |
| LnGrp LOS | F | C | | C | B | |
| Approach Vol, veh/h | 793 | | 829 | | 341 | |
| Approach Delay, s/veh | 115.1 | | 25.6 | | 17.7 | |
| Approach LOS | F | | C | | B | |

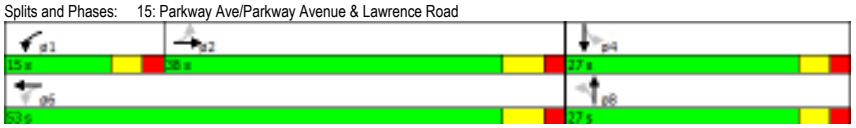
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 51.0 | | | | 51.0 | | 29.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 45.0 | | | | 45.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 36.3 | | | | 39.9 | | 27.5 |
| Green Ext Time (p_c), s | | 3.8 | | | | 2.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 60.4 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 705 | 103 | 135 | 485 | 5 | 386 | 15 | 358 | 8 | 10 | 7 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 569 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 15.5 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 38.0 | 38.0 | | 15.0 | 53.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (%) | 47.5% | 47.5% | | 18.8% | 66.3% | | 33.8% | 33.8% | | 33.8% | 33.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 65.1 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 705 | 103 | 135 | 485 | 5 | 386 | 15 | 358 | 8 | 10 | 7 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1716 | 1791 | 1791 | 1624 | 1791 | 1721 | 1735 | 1773 | 1827 | 1747 | 1827 |
| Adj Flow Rate, veh/h | 1 | 727 | 106 | 139 | 500 | 2 | 398 | 15 | 309 | 8 | 10 | 0 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 57 | 1377 | 200 | 92 | 762 | 4 | 495 | 90 | 511 | 172 | 184 | 0 |
| Arrive On Green | 0.48 | 0.49 | 0.48 | 0.48 | 0.49 | 0.48 | 0.37 | 0.37 | 0.35 | 0.35 | 0.37 | 0.00 |
| Sat Flow, veh/h | 0 | 2797 | 407 | 3 | 1549 | 7 | 1293 | 69 | 1416 | 281 | 550 | 0 |
| Grp Volume(v), veh/h | 446 | 0 | 388 | 241 | 0 | 400 | 398 | 0 | 324 | 18 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1715 | 0 | 1490 | 82 | 0 | 1477 | 1293 | 0 | 1485 | 831 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 11.3 | 18.1 | 0.0 | 11.9 | 11.4 | 0.0 | 11.3 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 0.0 | 11.3 | 18.1 | 0.0 | 11.9 | 22.3 | 0.0 | 11.3 | 11.4 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.27 | 0.58 | | 0.01 | 1.00 | | 0.95 | 0.44 | | 0.00 |
| Lane Grp Cap(c), veh/h | 874 | 0 | 733 | 0 | 0 | 727 | 495 | 0 | 543 | 344 | 0 | 0 |
| V/C Ratio(X) | 0.51 | 0.00 | 0.53 | 0.00 | 0.00 | 0.55 | 0.80 | 0.00 | 0.60 | 0.05 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 928 | 0 | 780 | 0 | 0 | 1126 | 522 | 0 | 542 | 373 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 11.0 | 0.0 | 11.1 | 0.0 | 0.0 | 11.1 | 21.4 | 0.0 | 16.7 | 13.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.6 | 0.0 | 0.0 | 0.7 | 8.5 | 0.0 | 1.8 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.5 | 0.0 | 8.2 | 0.0 | 0.0 | 8.5 | 12.7 | 0.0 | 8.7 | 0.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 11.5 | 0.0 | 11.7 | 0.0 | 0.0 | 11.8 | 30.1 | 0.0 | 18.6 | 14.0 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | B | C | | B | B | | |
| Approach Vol, veh/h | | 834 | | | 641 | | | 722 | | | 18 | |
| Approach Delay, s/veh | | 11.6 | | | 7.4 | | | 24.9 | | | 14.0 | |
| Approach LOS | | B | | | A | | | C | | | B | |

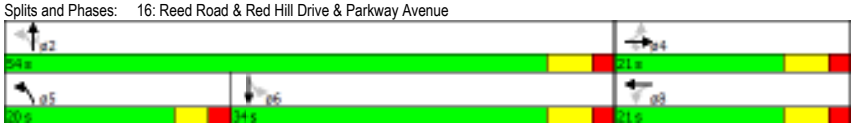
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.0 | | 27.0 | | 36.0 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | 22.0 | | 47.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 13.4 | | 13.4 | | 20.1 | | 24.8 |
| Green Ext Time (p_c), s | | 6.2 | | 2.3 | | 6.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.7 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 57 | 53 | 250 | 30 | 84 | 4 | 244 | 684 | 118 | 4 | 184 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | | 20.0 | 54.0 | 54.0 | 34.0 | 34.0 | |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 28.0% | | 26.7% | 72.0% | 72.0% | 45.3% | 45.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 55.9 | |
| Natural Cycle: 55 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 57 | 53 | 250 | 30 | 84 | 4 | 244 | 684 | 118 | 4 | 184 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1618 | 1680 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1812 | 1836 |
| Adj Flow Rate, veh/h | 59 | 55 | 217 | 31 | 87 | 4 | 252 | 705 | 110 | 4 | 190 | 29 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 255 | 196 | 338 | 154 | 322 | 13 | 731 | 928 | 813 | 84 | 409 | 62 |
| Arrive On Green | 0.21 | 0.24 | 0.24 | 0.21 | 0.24 | 0.21 | 0.18 | 0.54 | 0.54 | 0.25 | 0.27 | 0.25 |
| Sat Flow, veh/h | 564 | 830 | 1428 | 229 | 1370 | 54 | 1500 | 1713 | 1499 | 9 | 1516 | 228 |
| Grp Volume(v), veh/h | 114 | 0 | 217 | 122 | 0 | 0 | 252 | 705 | 110 | 223 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1393 | 0 | 1428 | 1653 | 0 | 0 | 1500 | 1713 | 1499 | 1754 | 0 | 0 |
| Q Serve(g_s), s | 0.2 | 0.0 | 6.2 | 0.0 | 0.0 | 0.0 | 4.5 | 14.4 | 1.6 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 2.7 | 0.0 | 6.2 | 2.5 | 0.0 | 0.0 | 4.5 | 14.4 | 1.6 | 4.8 | 0.0 | 0.0 |
| Prop In Lane | 0.52 | | 1.00 | 0.25 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.13 |
| Lane Grp Cap(c), veh/h | 420 | 0 | 338 | 452 | 0 | 0 | 731 | 928 | 813 | 516 | 0 | 0 |
| V/C Ratio(X) | 0.27 | 0.00 | 0.64 | 0.27 | 0.00 | 0.00 | 0.34 | 0.76 | 0.14 | 0.43 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 577 | 0 | 508 | 638 | 0 | 0 | 991 | 1865 | 1633 | 1159 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 14.4 | 0.0 | 15.6 | 14.3 | 0.0 | 0.0 | 6.6 | 8.1 | 5.1 | 13.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 2.0 | 0.3 | 0.0 | 0.0 | 0.3 | 1.3 | 0.1 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.3 | 0.0 | 4.8 | 2.4 | 0.0 | 0.0 | 3.4 | 11.4 | 1.2 | 4.5 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 14.8 | 0.0 | 17.8 | 14.6 | 0.0 | 0.0 | 6.9 | 9.4 | 5.2 | 14.5 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | A | A | B | | |
| Approach Vol, veh/h | | 331 | | | 122 | | | 1067 | | | 223 | |
| Approach Delay, s/veh | | 16.8 | | | 14.6 | | | 8.4 | | | 14.5 | |
| Approach LOS | | B | | | B | | | A | | | B | |

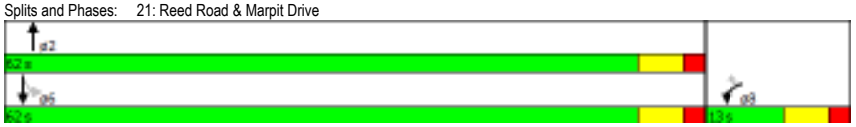
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 29.4 | | 15.6 | 12.2 | 17.2 | | 15.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 48.0 | | 15.0 | 15.0 | 28.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 16.9 | | 8.7 | 7.0 | 6.8 | | 4.5 |
| Green Ext Time (p_c), s | | 4.7 | | 1.0 | 0.5 | 4.4 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.2 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 76 | 28 | 1014 | 212 | 42 | 214 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 50% | 14% | 1% | 6% | 19% | 7% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 13.0 | 13.0 | 62.0 | | 62.0 | 62.0 |
| Total Split (%) | 17.3% | 17.3% | 82.7% | | 82.7% | 82.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75.1 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 76 | 28 | 1014 | 212 | 42 | 214 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1200 | 1579 | 1767 | 1800 | 1513 | 1682 |
| Adj Flow Rate, veh/h | 80 | 26 | 1067 | 212 | 44 | 225 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 50 | 14 | 1 | 1 | 19 | 7 |
| Cap, veh/h | 118 | 138 | 1109 | 203 | 119 | 1284 |
| Arrive On Green | 0.10 | 0.10 | 0.76 | 0.75 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1143 | 1342 | 1432 | 285 | 350 | 1682 |
| Grp Volume(v), veh/h | 80 | 26 | 0 | 1279 | 44 | 225 |
| Grp Sat Flow(s),veh/h/ln | 1143 | 1342 | 0 | 1717 | 350 | 1682 |
| Q Serve(g_s), s | 5.0 | 1.3 | 0.0 | 51.8 | 5.7 | 2.7 |
| Cycle Q Clear(g_c), s | 5.0 | 1.3 | 0.0 | 51.8 | 57.0 | 2.7 |
| Prop In Lane | 1.00 | 1.00 | | 0.17 | 1.00 | |
| Lane Grp Cap(c), veh/h | 118 | 138 | 0 | 1312 | 119 | 1284 |
| V/C Ratio(X) | 0.68 | 0.19 | 0.00 | 0.97 | 0.37 | 0.18 |
| Avail Cap(c_a), veh/h | 122 | 144 | 0 | 1310 | 123 | 1284 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.3 | 30.6 | 0.0 | 8.4 | 35.9 | 2.4 |
| Incr Delay (d2), s/veh | 13.5 | 0.6 | 0.0 | 19.0 | 1.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.6 | 0.9 | 0.0 | 40.2 | 1.7 | 2.3 |
| LnGrp Delay(d),s/veh | 45.8 | 31.3 | 0.0 | 28.1 | 37.8 | 2.5 |
| LnGrp LOS | D | C | | C | D | A |
| Approach Vol, veh/h | 106 | | 1279 | | | 269 |
| Approach Delay, s/veh | 42.2 | | 28.1 | | | 8.3 |
| Approach LOS | D | | C | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.0 | | | | 62.0 | | 12.7 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 56.0 | | | | 56.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | | 53.8 | | | | 59.5 | | 7.5 |
| Green Ext Time (p_c), s | | 1.7 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.8 |
| HCM 2010 LOS | C |

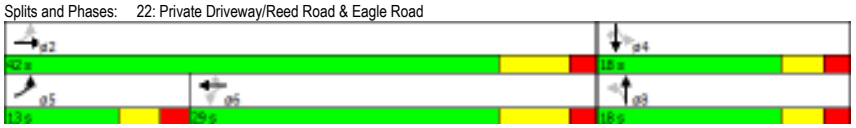
## 22: Private Driveway/Reed Road & Eagle Road
## 2014 EXISTING CONDITIONS

Timing Plan: AM PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 413 | 137 | 2 | 2 | 397 | 811 | 5 | 3 | 3 | 219 | 3 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 13.0 | 42.0 | | 29.0 | 29.0 | 29.0 | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 |
| Total Split (%) | 21.7% | 70.0% | | 48.3% | 48.3% | 48.3% | 30.0% | 30.0% | | 30.0% | 30.0% | 30.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.4 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road






## 22: Private Driveway/Reed Road & Eagle Road
## 2014 EXISTING CONDITIONS

Timing Plan: AM PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 413 | 137 | 2 | 2 | 397 | 811 | 5 | 3 | 3 | 219 | 3 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1773 | 1645 | 1790 |
| Adj Flow Rate, veh/h | 439 | 146 | 2 | 2 | 422 | 769 | 5 | 3 | 3 | 233 | 3 | 57 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 66 | 66 | 3 |
| Cap, veh/h | 419 | 1054 | 14 | 61 | 649 | 558 | 87 | 41 | 15 | 314 | 3 | 355 |
| Arrive On Green | 0.15 | 0.60 | 0.58 | 0.37 | 0.38 | 0.38 | 0.22 | 0.23 | 0.22 | 0.22 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1782 | 1756 | 24 | 1 | 1693 | 1455 | 0 | 175 | 66 | 837 | 11 | 1522 |
| Grp Volume(v), veh/h | 439 | 0 | 148 | 424 | 0 | 769 | 11 | 0 | 0 | 236 | 0 | 57 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 241 | 0 | 0 | 848 | 0 | 1522 |
| Q Serve(g_s), s | 8.3 | 0.0 | 2.2 | 0.0 | 0.0 | 23.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 |
| Cycle Q Clear(g_c), s | 8.3 | 0.0 | 2.2 | 12.5 | 0.0 | 23.0 | 13.0 | 0.0 | 0.0 | 13.0 | 0.0 | 1.8 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 0.99 | | 1.00 |
| Lane Grp Cap(c), veh/h | 419 | 0 | 1068 | 682 | 0 | 558 | 140 | 0 | 0 | 303 | 0 | 355 |
| V/C Ratio(X) | 1.05 | 0.00 | 0.14 | 0.62 | 0.00 | 1.38 | 0.08 | 0.00 | 0.00 | 0.78 | 0.00 | 0.16 |
| Avail Cap(c_a), veh/h | 473 | 0 | 1068 | 682 | 0 | 558 | 140 | 0 | 0 | 303 | 0 | 355 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.2 | 0.0 | 5.2 | 15.3 | 0.0 | 18.5 | 19.0 | 0.0 | 0.0 | 24.5 | 0.0 | 18.3 |
| Incr Delay (d2), s/veh | 54.5 | 0.0 | 0.1 | 2.2 | 0.0 | 181.5 | 0.2 | 0.0 | 0.0 | 12.2 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 28.8 | 0.0 | 2.0 | 10.5 | 0.0 | 70.1 | 0.3 | 0.0 | 0.0 | 8.6 | 0.0 | 1.4 |
| LnGrp Delay(d),s/veh | 108.7 | 0.0 | 5.3 | 17.5 | 0.0 | 213.9 | 19.3 | 0.0 | 0.0 | 36.8 | 0.0 | 18.5 |
| LnGrp LOS | F | | A | B | | F | B | | | D | | B |
| Approach Vol, veh/h | | 587 | | | 1193 | | | 11 | | | 293 | |
| Approach Delay, s/veh | | 82.7 | | | 144.1 | | | 19.3 | | | 33.2 | |
| Approach LOS | | F | | | F | | | B | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.0 | | 18.0 | 13.0 | 29.0 | | 18.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 35.0 | | 13.0 | 8.0 | 22.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | | 4.2 | | 15.0 | 10.8 | 25.5 | | 15.0 |
| Green Ext Time (p_c), s | | 13.7 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 110.5 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 26 | 33 | 57 | 2106 | 1044 | 33 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 488 | 187 | |
| Travel Time (s) | 28.2 | | | 8.3 | 3.2 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 26 | 33 | 57 | 2106 | 1044 | 33 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 27 | 34 | 58 | 2149 | 1065 | 34 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2273 | 549 | 1099 | 0 | - | 0 |
| Stage 1 | 1082 | - | - | - | - | - |
| Stage 2 | 1191 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *42 | *766 | 940 | - | - | - |
| Stage 1 | *821 | - | - | - | - | - |
| Stage 2 | *276 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *39 | *766 | 940 | - | - | - |
| Mov Cap-2 Maneuver | *39 | - | - | - | - | - |
| Stage 1 | *821 | - | - | - | - | - |
| Stage 2 | *259 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 120.7 | 0.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 940 | - | 83 | - | - |
| HCM Lane V/C Ratio | 0.062 | - | 0.725 | - | - |
| HCM Control Delay (s) | 9.1 | - | 120.7 | - | - |
| HCM Lane LOS | A | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 3.5 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 0 | 6 | 0 | 0 | 0 | 17 | 2106 | 21 | 6 | 1147 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 1 | | 1 | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 6% | 4% | 10% | 17% | 5% | 50% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 0 | 6 | 0 | 0 | 0 | 17 | 2106 | 21 | 6 | 1147 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 17 | 5 | 50 |
| Mvmt Flow | 4 | 0 | 6 | 0 | 0 | 0 | 18 | 2194 | 22 | 6 | 1195 | 2 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2339 | 3458 | 598 | 2850 | 3447 | 1108 | 1195 | 0 | 0 | 2216 | 0 | 0 |
| Stage 1 | 1207 | 1207 | - | 2240 | 2240 | - | - | - | - | - | - | - |
| Stage 2 | 1132 | 2251 | - | 610 | 1207 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.8 | 7.2 | 7.8 | 5.9 | 6.9 | 4 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.9 | 4 | 2.9 | 2.5 | - | - | 2.6 | - | - |
| Pot Cap-1 Maneuver | *51 | *0 | *704 | *49 | *0 | *267 | *818 | - | - | *298 | - | - |
| Stage 1 | *730 | *511 | - | *267 | *194 | - | - | - | - | - | - | - |
| Stage 2 | *276 | *194 | - | *705 | *511 | - | - | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *49 | *0 | *704 | *47 | *0 | *267 | *817 | - | - | *298 | - | - |
| Mov Cap-2 Maneuver | *49 | *0 | - | *47 | *0 | - | - | - | - | - | - | - |
| Stage 1 | *714 | *501 | - | *261 | *189 | - | - | - | - | - | - | - |
| Stage 2 | *270 | *189 | - | *684 | *501 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 8.1 | 0 | 0.1 | 0.1 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 817 | - | - | 1173 | - | * 298 | - | - |
| HCM Lane V/C Ratio | 0.022 | - | - | 0.009 | - | 0.021 | - | - |
| HCM Control Delay (s) | 9.5 | - | - | 8.1 | 0 | 17.3 | - | - |
| HCM Lane LOS | A | - | - | A | A | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - | 0.1 | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 0 | 0 | 2057 | 1313 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 263 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 4% | 6% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 2057 | 1313 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 4 | 6 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 2212 | 1412 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2518 | 706 | 1412 | 0 | - | 0 |
| Stage 1 | 1412 | - | - | - | - | - |
| Stage 2 | 1106 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *36 | *617 | *746 | - | - | - |
| Stage 1 | *639 | - | - | - | - | - |
| Stage 2 | *276 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *36 | *617 | *746 | - | - | - |
| Mov Cap-2 Maneuver | *190 | - | - | - | - | - |
| Stage 1 | *639 | - | - | - | - | - |
| Stage 2 | *276 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 746 | - | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 46 | 2104 | 54 | 64 | 1103 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 46 | 2104 | 54 | 64 | 1103 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 51 | 2338 | 60 | 71 | 1226 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3123 | 1199 | 0 | 0 | 2398 | 0 |
| Stage 1 | 2368 | - | - | - | - | - |
| Stage 2 | 755 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | *0 | *250 | - | - | 265 | - |
| Stage 1 | *253 | - | - | - | - | - |
| Stage 2 | *775 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *0 | *250 | - | - | 265 | - |
| Mov Cap-2 Maneuver | *0 | - | - | - | - | - |
| Stage 1 | *253 | - | - | - | - | - |
| Stage 2 | *124 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 23.1 | 0 | 9.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 250 | 265 | - |
| HCM Lane V/C Ratio | - | - | 0.204 | 0.268 | - |
| HCM Control Delay (s) | - | - | 23.1 | 23.5 | 8.8 |
| HCM Lane LOS | - | - | C | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 1.1 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 42 | 47 | 57 | 727 | 430 | 397 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 42 | 47 | 57 | 727 | 430 | 397 |
| Conflicting Peds, #/hr | 0 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 11 | 2 | 4 | 5 | 5 |
| Mvmt Flow | 43 | 48 | 59 | 749 | 443 | 409 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1515 | 649 | 853 | 0 | - | 0 |
| Stage 1 | 648 | - | - | - | - | - |
| Stage 2 | 867 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.31 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.2 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *143 | 567 | 523 | - | - | - |
| Stage 1 | *634 | - | - | - | - | - |
| Stage 2 | *504 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *115 | 567 | 523 | - | - | - |
| Mov Cap-2 Maneuver | *115 | - | - | - | - | - |
| Stage 1 | *634 | - | - | - | - | - |
| Stage 2 | *407 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 37.7 | 0.9 | 0 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 523 | - | 199 | - | - |
| HCM Lane V/C Ratio | 0.112 | - | 0.461 | - | - |
| HCM Control Delay (s) | 12.8 | 0 | 37.7 | - | - |
| HCM Lane LOS | B | A | E | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 2.2 | - | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 122 | 364 | 309 | 55 | 25 | 60 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 404 | 326 | | 533 | |
| Travel Time (s) | | 7.9 | 6.4 | | 14.5 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 5% | 8% | 17% | 0% | 10% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 122 | 364 | 309 | 55 | 25 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 5 | 8 | 17 | 0 | 10 |
| Mvmt Flow | 130 | 387 | 329 | 59 | 27 | 64 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 388 | 0 | - | 0 | 812 | 359 |
| Stage 1 | - | - | - | - | 359 | - |
| Stage 2 | - | - | - | - | 453 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1118 | - | - | - | 319 | 712 |
| Stage 1 | - | - | - | - | 786 | - |
| Stage 2 | - | - | - | - | 657 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1118 | - | - | - | 271 | 711 |
| Mov Cap-2 Maneuver | - | - | - | - | 271 | - |
| Stage 1 | - | - | - | - | 785 | - |
| Stage 2 | - | - | - | - | 559 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.5 | 0 | 14.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1118 | - | - | - | 481 |
| HCM Lane V/C Ratio | 0.116 | - | - | - | 0.188 |
| HCM Control Delay (s) | 8.6 | 0.4 | - | - | 14.2 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.7 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 45 | 371 | 365 | 60 | 39 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 326 | 284 | | 215 | |
| Travel Time (s) | | 6.4 | 5.5 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 2 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 6% | 9% | 5% | 3% | 8% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 45 | 371 | 365 | 60 | 39 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 2 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 6 | 9 | 5 | 3 | 8 |
| Mvmt Flow | 48 | 399 | 392 | 65 | 42 | 13 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 459 | 0 | - | 0 | 723 | 427 |
| Stage 1 | - | - | - | - | 427 | - |
| Stage 2 | - | - | - | - | 296 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.6 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1059 | - | - | - | 373 | 652 |
| Stage 1 | - | - | - | - | 716 | - |
| Stage 2 | - | - | - | - | 830 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1059 | - | - | - | 350 | 651 |
| Mov Cap-2 Maneuver | - | - | - | - | 350 | - |
| Stage 1 | - | - | - | - | 715 | - |
| Stage 2 | - | - | - | - | 781 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 15.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1059 | - | - | - | 393 |
| HCM Lane V/C Ratio | 0.046 | - | - | - | 0.14 |
| HCM Control Delay (s) | 8.6 | 0.2 | - | - | 15.6 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 4 | 96 | 963 | 27 | 182 | 274 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 96 | 963 | 27 | 182 | 274 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 4 | 98 | 983 | 28 | 186 | 280 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1634 | 983 | 0 | 0 | 983 | 0 |
| Stage 1 | 983 | - | - | - | - | - |
| Stage 2 | 651 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 133 | 300 | - | - | 577 | - |
| Stage 1 | 427 | - | - | - | - | - |
| Stage 2 | 609 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 82 | 300 | - | - | 577 | - |
| Mov Cap-2 Maneuver | 220 | - | - | - | - | - |
| Stage 1 | 427 | - | - | - | - | - |
| Stage 2 | 376 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 23.4 | 0 | 5.7 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 296 | 577 | - |
| HCM Lane V/C Ratio | - | - | 0.345 | 0.322 | - |
| HCM Control Delay (s) | - | - | 23.4 | 14.2 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 1.5 | 1.4 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 52 | 203 | 678 | 134 | 52 | 96 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Heavy Vehicles (%) | 15% | 8% | 3% | 8% | 19% | 17% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 13.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 52 | 203 | 678 | 134 | 52 | 96 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 15 | 8 | 3 | 8 | 19 | 17 |
| Mvmt Flow | 70 | 274 | 916 | 181 | 70 | 130 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1097 | 0 | - | 0 | 1422 | 549 |
| Stage 1 | - | - | - | - | 1007 | - |
| Stage 2 | - | - | - | - | 415 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.4 | 7.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.2 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 644 | - | - | - | 110 | 479 |
| Stage 1 | - | - | - | - | 280 | - |
| Stage 2 | - | - | - | - | 695 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 644 | - | - | - | 98 | 479 |
| Mov Cap-2 Maneuver | - | - | - | - | 98 | - |
| Stage 1 | - | - | - | - | 280 | - |
| Stage 2 | - | - | - | - | 619 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.3 | 0 | 109.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 644 | - | - | - | 202 |
| HCM Lane V/C Ratio | 0.109 | - | - | - | 0.99 |
| HCM Control Delay (s) | 11.3 | - | - | - | 109.7 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 8.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 56 | 16 | 32 | 18 | 21 | 28 | 48 | 616 | 2 | 18 | 172 | 52 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 143 | | | 204 | | | 415 | | | 569 | |
| Travel Time (s) | | 3.9 | | | 5.6 | | | 11.3 | | | 15.5 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 34.4 |
| Intersection LOS | D |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 56 | 16 | 32 | 0 | 18 | 21 | 28 | 0 | 48 | 616 | 2 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 16 | 13 | 13 | 2 | 6 | 0 | 0 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 0 | 60 | 17 | 34 | 0 | 19 | 22 | 30 | 0 | 51 | 655 | 2 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.3 | 10.7 | 48.5 |
| HCM LOS | B | B | E |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 7% | 78% | 0% | 27% | 7% |
| Vol Thru, % | 92% | 22% | 0% | 31% | 71% |
| Vol Right, % | 0% | 0% | 100% | 42% | 21% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 666 | 72 | 32 | 67 | 242 |
| LT Vol | 48 | 56 | 0 | 18 | 18 |
| Through Vol | 616 | 16 | 0 | 21 | 172 |
| RT Vol | 2 | 0 | 32 | 28 | 52 |
| Lane Flow Rate | 709 | 77 | 34 | 71 | 257 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.971 | 0.165 | 0.062 | 0.132 | 0.392 |
| Departure Headway (Hd) | 4.934 | 7.747 | 6.58 | 6.648 | 5.484 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 737 | 462 | 542 | 537 | 654 |
| Service Time | 2.969 | 5.511 | 4.343 | 4.718 | 3.534 |
| HCM Lane V/C Ratio | 0.962 | 0.167 | 0.063 | 0.132 | 0.393 |
| HCM Control Delay | 48.5 | 12 | 9.8 | 10.7 | 12.1 |
| HCM Lane LOS | E | B | A | B | B |
| HCM 95th-tile Q | 15 | 0.6 | 0.2 | 0.5 | 1.9 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 172 | 52 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 19 | 183 | 55 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 12.1 |
| HCM LOS | B |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 235 | 27 | 42 | 437 | 240 | 314 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1366 | | | 666 | 444 | |
| Travel Time (s) | 31.0 | | | 15.1 | 10.1 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 58.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 235 | 27 | 42 | 437 | 240 | 314 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 6 | 0 | 2 | 4 | 4 | 1 |
| Mvmt Flow | 270 | 31 | 48 | 502 | 276 | 361 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 271 | 0 | 870 | 271 |
| Stage 1 | - | - | - | - | 271 | - |
| Stage 2 | - | - | - | - | 599 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.84 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.84 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 970 | - | ~ 199 | 745 |
| Stage 1 | - | - | - | - | 743 | - |
| Stage 2 | - | - | - | - | 414 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 970 | - | ~ 185 | 744 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 185 | - |
| Stage 1 | - | - | - | - | 742 | - |
| Stage 2 | - | - | - | - | 385 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 135.4 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 185 | 744 | - | - | 970 | - |
| HCM Lane V/C Ratio | 1.491 | 0.485 | - | - | 0.05 | - |
| HCM Control Delay (s) | 293.9 | 14.3 | - | - | 8.9 | 0 |
| HCM Lane LOS | F | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 17.3 | 2.7 | - | - | 0.2 | - |

**Notes**

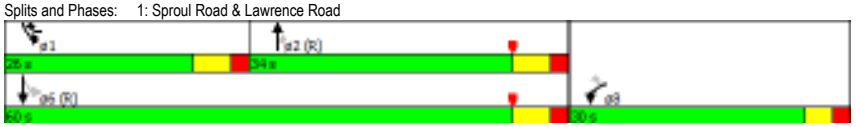
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 375 | 511 | 1010 | 292 | 472 | 1385 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 30.0 | 26.0 | 34.0 | 34.0 | 26.0 | 60.0 |
| Total Split (%) | 33.3% | 28.9% | 37.8% | 37.8% | 28.9% | 66.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 87 (97%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 375 | 511 | 1010 | 292 | 472 | 1385 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 391 | 470 | 1052 | 220 | 492 | 1443 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 461 | 765 | 1115 | 516 | 500 | 2220 |
| Arrive On Green | 0.28 | 0.28 | 0.34 | 0.34 | 0.23 | 0.62 |
| Sat Flow, veh/h | 1663 | 1485 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 391 | 470 | 1052 | 220 | 492 | 1443 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 20.0 | 20.5 | 27.1 | 9.8 | 19.4 | 22.7 |
| Cycle Q Clear(g_c), s | 20.0 | 20.5 | 27.1 | 9.8 | 19.4 | 22.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 461 | 765 | 1115 | 516 | 500 | 2220 |
| V/C Ratio(X) | 0.85 | 0.61 | 0.94 | 0.43 | 0.98 | 0.65 |
| Avail Cap(c_a), veh/h | 481 | 775 | 1132 | 527 | 515 | 2245 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.41 | 0.41 | 0.72 | 0.72 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.1 | 15.5 | 29.4 | 23.6 | 26.8 | 11.0 |
| Incr Delay (d2), s/veh | 5.9 | 0.6 | 12.8 | 1.8 | 35.0 | 1.5 |
| Initial Q Delay(d3),s/veh | 2.0 | 0.0 | 0.9 | 0.0 | 28.7 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.0 | 11.4 | 20.3 | 7.5 | 28.0 | 17.3 |
| LnGrp Delay(d),s/veh | 39.0 | 16.1 | 43.1 | 25.4 | 90.5 | 12.5 |
| LnGrp LOS | D | B | D | C | F | B |
| Approach Vol, veh/h | 861 | | 1272 | | | 1935 |
| Approach Delay, s/veh | 26.5 | | 40.1 | | | 32.3 |
| Approach LOS | C | | D | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 26.0 | 35.2 | | | | 61.2 | | 28.8 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 20.0 | 28.0 | | | | 54.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 21.9 | 29.6 | | | | 25.2 | | 23.0 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 16.9 | | 0.8 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 33.5 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 22 | 20 | 25 | 245 | 13 | 209 | 18 | 1047 | 125 | 185 | 1698 | 19 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | 13.0 | 13.0 | 40.0 | 40.0 | 13.0 | 40.0 | |
| Total Split (%) | 33.8% | 33.8% | | 33.8% | 33.8% | 16.3% | 16.3% | 50.0% | 50.0% | 16.3% | 50.0% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 74 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 22 | 20 | 25 | 245 | 13 | 209 | 18 | 1047 | 125 | 185 | 1698 | 19 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1773 | 1800 | 1764 | 1764 | 1747 | 1764 | 1747 | 1835 | 1800 | 1782 | 1800 |
| Adj Flow Rate, veh/h | 22 | 20 | 25 | 250 | 13 | 195 | 18 | 1068 | 0 | 189 | 1733 | 18 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 60 | 55 | 33 | 261 | 9 | 553 | 139 | 1488 | 699 | 354 | 1806 | 17 |
| Arrive On Green | 0.26 | 0.28 | 0.26 | 0.26 | 0.28 | 0.28 | 0.02 | 0.45 | 0.00 | 0.10 | 0.53 | 0.51 |
| Sat Flow, veh/h | 0 | 200 | 119 | 630 | 33 | 1462 | 1680 | 3318 | 1559 | 1714 | 3434 | 36 |
| Grp Volume(v), veh/h | 67 | 0 | 0 | 263 | 0 | 195 | 18 | 1068 | 0 | 189 | 854 | 897 |
| Grp Sat Flow(s),veh/h/ln | 319 | 0 | 0 | 663 | 0 | 1462 | 1680 | 1659 | 1559 | 1714 | 1693 | 1776 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.8 | 0.5 | 20.7 | 0.0 | 4.2 | 38.6 | 38.8 |
| Cycle Q Clear(g_c), s | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 7.8 | 0.5 | 20.7 | 0.0 | 4.2 | 38.6 | 38.8 |
| Prop In Lane | 0.33 | | 0.37 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 144 | 0 | 0 | 262 | 0 | 553 | 139 | 1488 | 699 | 354 | 889 | 933 |
| V/C Ratio(X) | 0.47 | 0.00 | 0.00 | 1.00 | 0.00 | 0.35 | 0.13 | 0.72 | 0.00 | 0.53 | 0.96 | 0.96 |
| Avail Cap(c_a), veh/h | 144 | 0 | 0 | 262 | 0 | 544 | 290 | 1509 | 709 | 382 | 889 | 933 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.73 | 0.73 | 0.00 | 0.66 | 0.66 | 0.66 |
| Uniform Delay (d), s/veh | 24.0 | 0.0 | 0.0 | 32.6 | 0.0 | 17.9 | 18.7 | 18.0 | 0.0 | 13.4 | 18.4 | 18.4 |
| Incr Delay (d2), s/veh | 2.3 | 0.0 | 0.0 | 56.8 | 0.0 | 0.4 | 0.3 | 2.2 | 0.0 | 0.8 | 16.7 | 16.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.9 | 0.9 |
| %ile BackOfQ(95%),veh/ln | 2.2 | 0.0 | 0.0 | 7.4 | 0.0 | 5.6 | 0.4 | 14.3 | 0.0 | 3.9 | 28.8 | 30.0 |
| LnGrp Delay(d),s/veh | 26.4 | 0.0 | 0.0 | 89.4 | 0.0 | 18.3 | 19.0 | 20.2 | 0.0 | 14.7 | 36.0 | 35.7 |
| LnGrp LOS | C | | | F | | B | B | C | | B | D | D |
| Approach Vol, veh/h | | 67 | | | 458 | | | 1086 | | | 1940 | |
| Approach Delay, s/veh | | 26.4 | | | 59.1 | | | 20.1 | | | 33.8 | |
| Approach LOS | | C | | | E | | | C | | | C | |

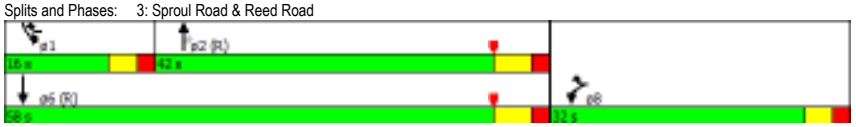
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.6 | 41.4 | | 27.0 | 6.0 | 47.0 | | 27.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 34.0 | | 21.0 | 8.0 | 34.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 6.7 | 23.2 | | 23.0 | 3.0 | 41.1 | | 23.0 |
| Green Ext Time (p_c), s | 0.1 | 8.5 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 32.7 |
| HCM 2010 LOS | | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 302 | 150 | 1012 | 238 | 256 | 1602 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 413 | | 187 | | | 884 |
| Travel Time (s) | 8.0 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 32.0 | | 42.0 | 42.0 | 16.0 | 58.0 |
| Total Split (%) | 35.6% | | 46.7% | 46.7% | 17.8% | 64.4% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 90 | |
| Actuated Cycle Length: 90 | |
| Offset: 41 (46%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 302 | 150 | 1012 | 238 | 256 | 1602 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 3 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1747 | 1818 | 1818 |
| Adj Flow Rate, veh/h | 325 | 161 | 1088 | 182 | 275 | 1723 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 399 | 568 | 1631 | 730 | 231 | 2312 |
| Arrive On Green | 0.23 | 0.23 | 0.49 | 0.49 | 0.13 | 0.67 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1485 | 1731 | 3545 |
| Grp Volume(v), veh/h | 325 | 161 | 1088 | 182 | 275 | 1723 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1485 | 1731 | 1727 |
| Q Serve(g_s), s | 16.0 | 6.6 | 22.3 | 6.4 | 12.0 | 29.6 |
| Cycle Q Clear(g_c), s | 16.0 | 6.6 | 22.3 | 6.4 | 12.0 | 29.6 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 399 | 568 | 1631 | 730 | 231 | 2312 |
| V/C Ratio(X) | 0.81 | 0.28 | 0.67 | 0.25 | 1.19 | 0.75 |
| Avail Cap(c_a), veh/h | 539 | 694 | 1631 | 730 | 231 | 2312 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.35 | 0.35 |
| Uniform Delay (d), s/veh | 32.8 | 20.3 | 17.3 | 13.3 | 39.0 | 9.9 |
| Incr Delay (d2), s/veh | 6.9 | 0.3 | 2.2 | 0.8 | 100.7 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 38.3 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.2 | 5.2 | 16.0 | 5.0 | 24.9 | 17.9 |
| LnGrp Delay(d),s/veh | 39.7 | 20.6 | 19.5 | 14.1 | 177.9 | 10.7 |
| LnGrp LOS | D | C | B | B | F | B |
| Approach Vol, veh/h | 486 | | 1270 | | | 1998 |
| Approach Delay, s/veh | 33.3 | | 18.7 | | | 33.7 |
| Approach LOS | C | | B | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 16.0 | 49.2 | | | | 65.2 | | 24.8 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 11.0 | 36.0 | | | | 52.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 14.5 | 24.8 | | | | 32.1 | | 18.5 |
| Green Ext Time (p_c), s | 0.0 | 9.2 | | | | 14.8 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.6 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 472 | 946 | 6 | 679 | 1473 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 487 | 981 | 0 | 700 | 1519 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 47.0 | 33.0 | | 47.0 | 80.0 |
| Total Split (%) | | 58.8% | 41.3% | | 58.8% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | | 9.0 | 8.0 | | 9.0 | 8.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 36.9 | 26.1 | | 36.9 | 80.0 |
| Actuated g/C Ratio | | 0.46 | 0.33 | | 0.46 | 1.00 |
| v/c Ratio | | 0.41 | 0.88 | | 0.93 | 0.90 |
| Control Delay | | 17.0 | 22.8 | | 41.2 | 9.4 |
| Queue Delay | | 0.0 | 0.0 | | 47.3 | 0.0 |
| Total Delay | | 17.0 | 22.8 | | 88.5 | 9.4 |
| LOS | | B | C | | F | A |
| Approach Delay | | | 22.8 | | | 34.3 |
| Approach LOS | | | C | | | C |
| Queue Length 50th (ft) | | 114 | 212 | | 307 | 0 |
| Queue Length 95th (ft) | | 157 | m#327 | | #533 | #69 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1224 | 1120 | | 777 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 143 | 0 |



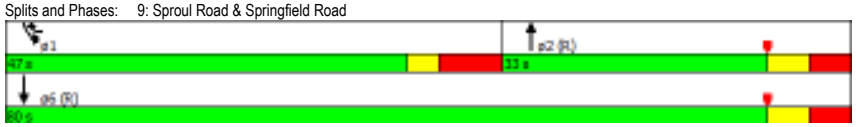


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.40 | 0.88 | | 1.10 | 0.90 |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 29.0 — Intersection LOS: C
Intersection Capacity Utilization 88.5% — ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

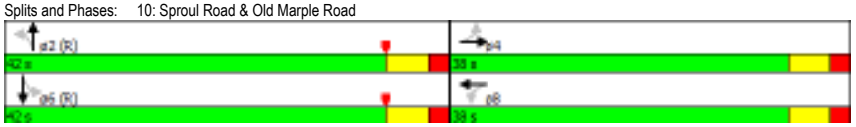
Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 149 | 161 | 53 | 148 | 138 | 12 | 71 | 821 | 59 | 4 | 1108 | 142 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 38.0 | 38.0 | | 38.0 | 38.0 | | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Total Split (%) | 47.5% | 47.5% | | 47.5% | 47.5% | | 52.5% | 52.5% | | 52.5% | 52.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 149 | 161 | 53 | 148 | 138 | 12 | 71 | 821 | 59 | 4 | 1108 | 142 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1882 | 1818 | 1782 | 1756 | 1782 | 1773 | 1749 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 155 | 168 | 43 | 154 | 144 | 9 | 74 | 855 | 49 | 4 | 1154 | 119 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 235 | 222 | 52 | 235 | 195 | 11 | 78 | 1134 | 69 | 46 | 1706 | 176 |
| Arrive On Green | 0.30 | 0.32 | 0.30 | 0.30 | 0.32 | 0.30 | 0.55 | 0.56 | 0.55 | 0.55 | 0.56 | 0.55 |
| Sat Flow, veh/h | 542 | 704 | 166 | 531 | 619 | 35 | 97 | 2291 | 143 | 2 | 3077 | 316 |
| Grp Volume(v), veh/h | 366 | 0 | 0 | 307 | 0 | 0 | 440 | 0 | 538 | 678 | 0 | 599 |
| Grp Sat Flow(s),veh/h/ln | 1411 | 0 | 0 | 1185 | 0 | 0 | 963 | 0 | 1567 | 1805 | 0 | 1590 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 12.1 | 0.0 | 18.5 | 0.0 | 0.0 | 21.4 |
| Cycle Q Clear(g_c), s | 19.9 | 0.0 | 0.0 | 20.2 | 0.0 | 0.0 | 33.4 | 0.0 | 18.5 | 21.4 | 0.0 | 21.4 |
| Prop In Lane | 0.42 | | 0.12 | 0.50 | | 0.03 | 0.17 | | 0.09 | 0.01 | | 0.20 |
| Lane Grp Cap(c), veh/h | 492 | 0 | 0 | 427 | 0 | 0 | 94 | 0 | 878 | 1030 | 0 | 890 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.00 | 0.72 | 0.00 | 0.00 | 4.68 | 0.00 | 0.61 | 0.66 | 0.00 | 0.67 |
| Avail Cap(c_a), veh/h | 639 | 0 | 0 | 557 | 0 | 0 | 579 | 0 | 876 | 1032 | 0 | 890 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.5 | 0.0 | 0.0 | 25.5 | 0.0 | 0.0 | 32.4 | 0.0 | 13.8 | 12.6 | 0.0 | 12.6 |
| Incr Delay (d2), s/veh | 3.4 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 1682.2 | 0.0 | 3.2 | 3.3 | 0.0 | 4.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.9 | 0.0 | 0.0 | 11.2 | 0.0 | 0.0 | 82.7 | 0.0 | 18.3 | 17.5 | 0.0 | 15.7 |
| LnGrp Delay(d),s/veh | 28.9 | 0.0 | 0.0 | 28.6 | 0.0 | 0.0 | 1714.5 | 0.0 | 17.0 | 15.9 | 0.0 | 16.6 |
| LnGrp LOS | C | | | C | | | F | | B | B | | B |
| Approach Vol, veh/h | | 366 | | | 307 | | | 978 | | | 1277 | |
| Approach Delay, s/veh | | 28.9 | | | 28.6 | | | 780.1 | | | 16.2 | |
| Approach LOS | | C | | | C | | | F | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.7 | | 30.3 | | 49.7 | | 30.3 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 32.0 | | 36.0 | | 32.0 |
| Max Q Clear Time (g_c+I1), s | | 35.4 | | 21.9 | | 23.4 | | 22.2 |
| Green Ext Time (p_c), s | | 0.5 | | 2.1 | | 8.0 | | 2.0 |

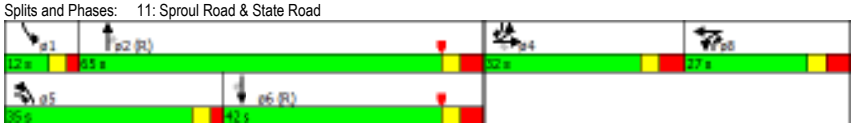
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 274.2 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 285 | 83 | 711 | 304 | 151 | 28 | 307 | 644 | 308 | 35 | 975 | 377 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 36% | | | 21% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 32.0 | 32.0 | 35.0 | 27.0 | 27.0 | | 35.0 | 65.0 | 27.0 | 12.0 | 42.0 | 32.0 |
| Total Split (%) | 23.5% | 23.5% | 25.7% | 19.9% | 19.9% | | 25.7% | 47.8% | 19.9% | 8.8% | 30.9% | 23.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 136
Actuated Cycle Length: 136
Offset: 34 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 285 | 83 | 711 | 304 | 151 | 28 | 307 | 644 | 308 | 35 | 975 | 377 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1812 | 1844 | 1872 | 1851 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 190 | 232 | 0 | 234 | 266 | 0 | 316 | 664 | 0 | 36 | 1005 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 274 | 304 | 591 | 275 | 286 | 0 | 355 | 1666 | 970 | 62 | 960 | 719 |
| Arrive On Green | 0.16 | 0.16 | 0.00 | 0.15 | 0.15 | 0.00 | 0.21 | 0.49 | 0.00 | 0.04 | 0.32 | 0.00 |
| Sat Flow, veh/h | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 190 | 232 | 0 | 234 | 266 | 0 | 316 | 664 | 0 | 36 | 1005 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 13.9 | 16.9 | 0.0 | 17.4 | 19.3 | 0.0 | 24.6 | 16.8 | 0.0 | 2.8 | 39.1 | 0.0 |
| Cycle Q Clear(g_c), s | 13.9 | 16.9 | 0.0 | 17.4 | 19.3 | 0.0 | 24.6 | 16.8 | 0.0 | 2.8 | 39.1 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 274 | 304 | 591 | 275 | 286 | 0 | 355 | 1666 | 970 | 62 | 960 | 719 |
| V/C Ratio(X) | 0.69 | 0.76 | 0.00 | 0.85 | 0.93 | 0.00 | 0.89 | 0.40 | 0.00 | 0.58 | 1.05 | 0.00 |
| Avail Cap(c_a), veh/h | 336 | 346 | 627 | 275 | 286 | 0 | 387 | 1667 | 989 | 101 | 1082 | 719 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 54.4 | 54.1 | 0.0 | 56.0 | 56.8 | 0.0 | 52.3 | 21.9 | 0.0 | 64.5 | 48.7 | 0.0 |
| Incr Delay (d2), s/veh | 4.6 | 8.5 | 0.0 | 21.5 | 35.3 | 0.0 | 20.7 | 0.7 | 0.0 | 8.1 | 42.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.2 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.7 | 14.0 | 0.0 | 15.5 | 18.5 | 0.0 | 19.6 | 12.9 | 0.0 | 2.6 | 45.5 | 0.0 |
| LnGrp Delay(d),s/veh | 59.3 | 62.6 | 0.0 | 77.5 | 92.1 | 0.0 | 73.0 | 22.7 | 0.0 | 72.6 | 112.0 | 0.0 |
| LnGrp LOS | E | E | | E | F | | E | C | | E | F | |
| Approach Vol, veh/h | | 422 | | | 500 | | | 980 | | | 1041 | |
| Approach Delay, s/veh | | 61.1 | | | 85.2 | | | 38.9 | | | 110.6 | |
| Approach LOS | | E | | | F | | | D | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.0 | 72.9 | | 27.1 | 32.4 | 49.5 | | 27.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 7.0 | 58.0 | | 25.0 | 30.0 | 35.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | 5.3 | 19.3 | | 19.4 | 27.1 | 41.6 | | 21.8 |
| Green Ext Time (p_c), s | 0.0 | 9.2 | | 0.7 | 0.3 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 75.3
HCM 2010 LOS E

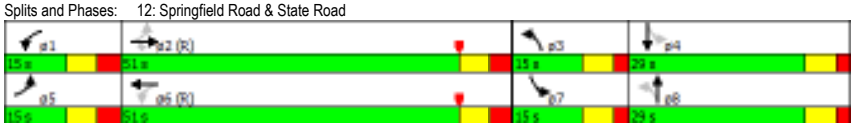
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 176 | 1335 | 513 | 36 | 1143 | 72 | 348 | 337 | 41 | 215 | 371 | 59 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 15.0 | 51.0 | 51.0 | 15.0 | 51.0 | | 15.0 | 29.0 | | 15.0 | 29.0 | |
| Total Split (%) | 13.6% | 46.4% | 46.4% | 13.6% | 46.4% | | 13.6% | 26.4% | | 13.6% | 26.4% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 110 | |
| Actuated Cycle Length: 110 | |
| Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 176 | 1335 | 513 | 36 | 1143 | 72 | 348 | 337 | 41 | 215 | 371 | 59 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1806 | 1827 |
| Adj Flow Rate, veh/h | 178 | 1348 | 0 | 36 | 1155 | 0 | 352 | 340 | 0 | 217 | 375 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 229 | 1598 | 715 | 143 | 1344 | 0 | 221 | 391 | 0 | 230 | 394 | 0 |
| Arrive On Green | 0.08 | 0.46 | 0.00 | 0.03 | 0.41 | 0.00 | 0.09 | 0.22 | 0.00 | 0.09 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1806 | 0 |
| Grp Volume(v), veh/h | 178 | 1348 | 0 | 36 | 1155 | 0 | 352 | 340 | 0 | 217 | 375 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1806 | 0 |
| Q Serve(g_s), s | 6.1 | 37.6 | 0.0 | 1.4 | 35.3 | 0.0 | 10.0 | 20.1 | 0.0 | 10.0 | 22.5 | 0.0 |
| Cycle Q Clear(g_c), s | 6.1 | 37.6 | 0.0 | 1.4 | 35.3 | 0.0 | 10.0 | 20.1 | 0.0 | 10.0 | 22.5 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 229 | 1598 | 715 | 143 | 1344 | 0 | 221 | 391 | 0 | 230 | 394 | 0 |
| V/C Ratio(X) | 0.78 | 0.84 | 0.00 | 0.25 | 0.86 | 0.00 | 1.60 | 0.87 | 0.00 | 0.95 | 0.95 | 0.00 |
| Avail Cap(c_a), veh/h | 251 | 1598 | 715 | 240 | 1344 | 0 | 233 | 391 | 0 | 258 | 394 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 28.1 | 26.5 | 0.0 | 24.4 | 29.7 | 0.0 | 34.6 | 41.7 | 0.0 | 34.4 | 42.7 | 0.0 |
| Incr Delay (d2), s/veh | 13.3 | 5.6 | 0.0 | 0.9 | 7.3 | 0.0 | 288.6 | 18.5 | 0.0 | 39.3 | 33.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 10.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 20.1 | 1.4 | 0.0 | 2.5 | 3.8 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.1 | 26.8 | 0.0 | 1.2 | 24.2 | 0.0 | 33.8 | 18.1 | 0.0 | 9.0 | 21.9 | 0.0 |
| LnGrp Delay(d),s/veh | 51.4 | 32.3 | 0.0 | 25.3 | 37.1 | 0.0 | 343.3 | 61.6 | 0.0 | 76.2 | 79.4 | 0.0 |
| LnGrp LOS | D | C | | C | D | | F | E | | E | E | |
| Approach Vol, veh/h | | 1526 | | | 1191 | | | 692 | | | 592 | |
| Approach Delay, s/veh | | 34.5 | | | 36.7 | | | 204.9 | | | 78.3 | |
| Approach LOS | | C | | | D | | | F | | | E | |

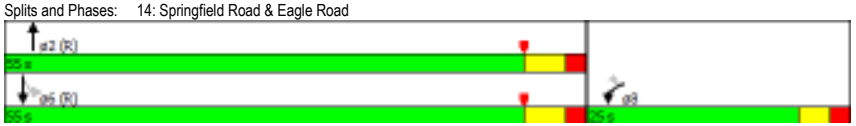
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.6 | 56.4 | 15.0 | 29.0 | 15.0 | 51.0 | 15.0 | 29.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 44.0 | 9.0 | 23.0 | 8.0 | 44.0 | 9.0 | 23.0 |
| Max Q Clear Time (g_c+I1), s | 3.9 | 40.1 | 12.5 | 25.0 | 8.6 | 37.8 | 12.5 | 22.6 |
| Green Ext Time (p_c), s | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 71.1 |
| HCM 2010 LOS | E |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 369 | 54 | 316 | 358 | 153 | 441 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 25.0 | 25.0 | 55.0 | | 55.0 | 55.0 |
| Total Split (%) | 31.3% | 31.3% | 68.8% | | 68.8% | 68.8% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 40 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 369 | 54 | 316 | 358 | 153 | 441 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1809 | 1809 | 1774 | 1791 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 388 | 39 | 333 | 330 | 161 | 464 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 1 | 1 |
| Cap, veh/h | 448 | 400 | 514 | 510 | 180 | 475 |
| Arrive On Green | 0.26 | 0.26 | 0.63 | 0.62 | 0.62 | 0.63 |
| Sat Flow, veh/h | 1723 | 1537 | 819 | 812 | 196 | 757 |
| Grp Volume(v), veh/h | 388 | 39 | 0 | 663 | 625 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1723 | 1537 | 0 | 1631 | 953 | 0 |
| Q Serve(g_s), s | 17.2 | 1.5 | 0.0 | 20.6 | 28.6 | 0.0 |
| Cycle Q Clear(g_c), s | 17.2 | 1.5 | 0.0 | 20.6 | 49.2 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.50 | 0.26 | |
| Lane Grp Cap(c), veh/h | 448 | 400 | 0 | 1024 | 643 | 0 |
| V/C Ratio(X) | 0.87 | 0.10 | 0.00 | 0.65 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 452 | 404 | 0 | 1024 | 643 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.25 | 0.00 |
| Uniform Delay (d), s/veh | 28.4 | 22.5 | 0.0 | 9.5 | 20.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.0 | 0.1 | 0.0 | 3.2 | 12.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.6 | 1.2 | 0.0 | 15.2 | 19.4 | 0.0 |
| LnGrp Delay(d),s/veh | 44.7 | 22.6 | 0.0 | 12.7 | 32.5 | 0.0 |
| LnGrp LOS | D | C | | B | C | |
| Approach Vol, veh/h | 427 | | 663 | | 625 | |
| Approach Delay, s/veh | 42.7 | | 12.7 | | 32.5 | |
| Approach LOS | D | | B | | C | |

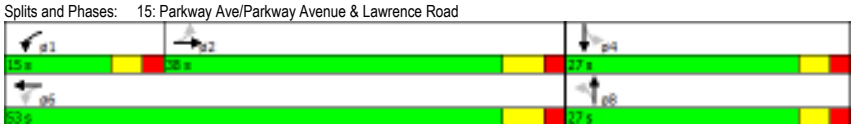
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 55.2 | | | | 55.2 | | 24.8 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 49.0 | | | | 49.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | | 22.6 | | | | 51.2 | | 19.7 |
| Green Ext Time (p_c), s | | 7.5 | | | | 0.0 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.4 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 7 | 458 | 223 | 359 | 626 | 5 | 255 | 22 | 224 | 6 | 38 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 586 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.0 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 38.0 | 38.0 | | 15.0 | 53.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (%) | 47.5% | 47.5% | | 18.8% | 66.3% | | 33.8% | 33.8% | | 33.8% | 33.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 71 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 458 | 223 | 359 | 626 | 5 | 255 | 22 | 224 | 6 | 38 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1811 | 1827 |
| Adj Flow Rate, veh/h | 7 | 472 | 221 | 370 | 645 | 5 | 263 | 23 | 136 | 6 | 39 | 4 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 53 | 1398 | 643 | 97 | 1007 | 8 | 418 | 54 | 321 | 76 | 373 | 35 |
| Arrive On Green | 0.62 | 0.63 | 0.62 | 0.62 | 0.63 | 0.62 | 0.25 | 0.25 | 0.23 | 0.23 | 0.25 | 0.23 |
| Sat Flow, veh/h | 8 | 2207 | 1016 | 3 | 1590 | 12 | 1280 | 219 | 1294 | 92 | 1504 | 142 |
| Grp Volume(v), veh/h | 384 | 0 | 316 | 370 | 0 | 650 | 263 | 0 | 159 | 49 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1780 | 0 | 1451 | 3 | 0 | 1602 | 1280 | 0 | 1513 | 1738 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 7.9 | 50.0 | 0.0 | 19.0 | 13.2 | 0.0 | 6.8 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.6 | 0.0 | 7.9 | 50.0 | 0.0 | 19.0 | 14.3 | 0.0 | 6.8 | 1.6 | 0.0 | 0.0 |
| Prop In Lane | 0.02 | | 0.70 | 1.00 | | 0.01 | 1.00 | | 0.86 | 0.12 | | 0.08 |
| Lane Grp Cap(c), veh/h | 1153 | 0 | 919 | 0 | 0 | 1015 | 418 | 0 | 375 | 461 | 0 | 0 |
| V/C Ratio(X) | 0.33 | 0.00 | 0.34 | 0.00 | 0.00 | 0.64 | 0.63 | 0.00 | 0.42 | 0.11 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1153 | 0 | 919 | 0 | 0 | 1015 | 489 | 0 | 459 | 555 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.5 | 0.0 | 6.7 | 0.0 | 0.0 | 8.6 | 26.7 | 0.0 | 24.3 | 22.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 1.4 | 2.0 | 0.0 | 0.8 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.0 | 0.0 | 5.7 | 0.0 | 0.0 | 13.5 | 9.2 | 0.0 | 5.2 | 1.5 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 6.7 | 0.0 | 6.9 | 0.0 | 0.0 | 9.9 | 28.7 | 0.0 | 25.1 | 22.2 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | A | C | | C | C | | |
| Approach Vol, veh/h | | 700 | | | 1020 | | | 422 | | | 49 | |
| Approach Delay, s/veh | | 6.8 | | | 6.3 | | | 27.3 | | | 22.2 | |
| Approach LOS | | A | | | A | | | C | | | C | |

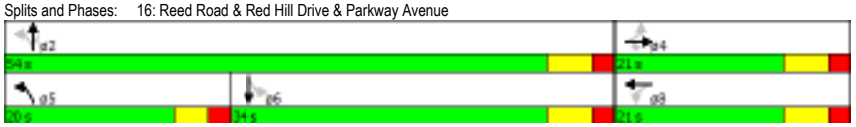
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 53.0 | | 22.8 | | 53.0 | | 22.8 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | 22.0 | | 47.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 9.9 | | 3.6 | | 52.0 | | 16.8 |
| Green Ext Time (p_c), s | | 9.0 | | 1.9 | | 0.0 | | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 36 | 116 | 297 | 36 | 42 | 10 | 314 | 403 | 62 | 5 | 588 | 43 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 287 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.6 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | | 20.0 | 54.0 | 54.0 | 34.0 | 34.0 | |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 28.0% | | 26.7% | 72.0% | 72.0% | 45.3% | 45.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 73.2 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 36 | 116 | 297 | 36 | 42 | 10 | 314 | 403 | 62 | 5 | 588 | 43 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1751 | 1729 | 1836 | 1794 | 1836 | 1713 | 1764 | 1680 | 1836 | 1905 | 1836 |
| Adj Flow Rate, veh/h | 38 | 122 | 251 | 38 | 44 | 10 | 331 | 424 | 59 | 5 | 619 | 41 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 121 | 313 | 324 | 146 | 150 | 27 | 521 | 1109 | 898 | 56 | 719 | 45 |
| Arrive On Green | 0.21 | 0.22 | 0.22 | 0.21 | 0.22 | 0.21 | 0.16 | 0.63 | 0.63 | 0.39 | 0.41 | 0.39 |
| Sat Flow, veh/h | 246 | 1416 | 1463 | 331 | 702 | 126 | 1631 | 1764 | 1428 | 4 | 1761 | 116 |
| Grp Volume(v), veh/h | 160 | 0 | 251 | 92 | 0 | 0 | 331 | 424 | 59 | 665 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1662 | 0 | 1463 | 1159 | 0 | 0 | 1631 | 1764 | 1428 | 1881 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 10.7 | 0.4 | 0.0 | 0.0 | 6.6 | 7.8 | 1.1 | 2.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.3 | 0.0 | 10.7 | 5.6 | 0.0 | 0.0 | 6.6 | 7.8 | 1.1 | 22.0 | 0.0 | 0.0 |
| Prop In Lane | 0.24 | | 1.00 | 0.41 | | 0.11 | 1.00 | | 1.00 | 0.01 | | 0.06 |
| Lane Grp Cap(c), veh/h | 409 | 0 | 324 | 306 | 0 | 0 | 521 | 1109 | 898 | 791 | 0 | 0 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.78 | 0.30 | 0.00 | 0.00 | 0.64 | 0.38 | 0.07 | 0.84 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 442 | 0 | 353 | 342 | 0 | 0 | 656 | 1304 | 1056 | 849 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.3 | 0.0 | 24.6 | 21.7 | 0.0 | 0.0 | 7.7 | 6.0 | 4.8 | 18.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 9.6 | 0.5 | 0.0 | 0.0 | 1.3 | 0.2 | 0.0 | 7.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.7 | 0.0 | 9.3 | 2.8 | 0.0 | 0.0 | 5.5 | 6.9 | 0.8 | 19.3 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 23.0 | 0.0 | 35.4 | 22.2 | 0.0 | 0.0 | 9.0 | 6.3 | 4.8 | 25.9 | 0.0 | 0.0 |
| LnGrp LOS | C | | D | C | | | A | A | A | C | | |
| Approach Vol, veh/h | | 411 | | | 92 | | | 814 | | | 665 | |
| Approach Delay, s/veh | | 30.5 | | | 22.2 | | | 7.3 | | | 25.9 | |
| Approach LOS | | C | | | C | | | A | | | C | |

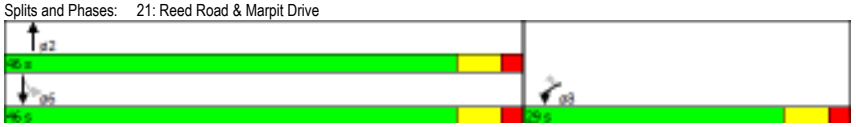
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.7 | | 19.6 | 14.7 | 31.9 | | 19.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 48.0 | | 15.0 | 15.0 | 28.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 10.3 | | 13.2 | 9.1 | 24.0 | | 7.6 |
| Green Ext Time (p_c), s | | 5.4 | | 0.4 | 0.6 | 1.9 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.0 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 290 | 84 | 409 | 115 | 39 | 775 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 1% | 15% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 29.0 | 29.0 | 46.0 | | 46.0 | 46.0 |
| Total Split (%) | 38.7% | 38.7% | 61.3% | | 61.3% | 61.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 61.4 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 290 | 84 | 409 | 115 | 39 | 775 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1731 | 1782 | 1769 | 1800 | 1565 | 1782 |
| Adj Flow Rate, veh/h | 305 | 81 | 431 | 113 | 41 | 816 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 4 | 1 | 2 | 2 | 15 | 1 |
| Cap, veh/h | 421 | 387 | 752 | 197 | 393 | 991 |
| Arrive On Green | 0.26 | 0.26 | 0.56 | 0.54 | 0.56 | 0.56 |
| Sat Flow, veh/h | 1648 | 1515 | 1352 | 354 | 722 | 1782 |
| Grp Volume(v), veh/h | 305 | 81 | 0 | 544 | 41 | 816 |
| Grp Sat Flow(s),veh/h/ln | 1648 | 1515 | 0 | 1706 | 722 | 1782 |
| Q Serve(g_s), s | 9.0 | 2.2 | 0.0 | 11.1 | 2.1 | 19.9 |
| Cycle Q Clear(g_c), s | 9.0 | 2.2 | 0.0 | 11.1 | 12.6 | 19.9 |
| Prop In Lane | 1.00 | 1.00 | | 0.21 | 1.00 | |
| Lane Grp Cap(c), veh/h | 421 | 387 | 0 | 949 | 393 | 991 |
| V/C Ratio(X) | 0.72 | 0.21 | 0.00 | 0.57 | 0.10 | 0.82 |
| Avail Cap(c_a), veh/h | 746 | 685 | 0 | 1318 | 549 | 1377 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.1 | 15.5 | 0.0 | 7.8 | 11.6 | 9.6 |
| Incr Delay (d2), s/veh | 2.4 | 0.3 | 0.0 | 0.5 | 0.1 | 2.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.8 | 1.7 | 0.0 | 9.1 | 0.8 | 15.6 |
| LnGrp Delay(d),s/veh | 20.4 | 15.8 | 0.0 | 8.3 | 11.8 | 12.6 |
| LnGrp LOS | C | B | | A | B | B |
| Approach Vol, veh/h | 386 | | 544 | | | 857 |
| Approach Delay, s/veh | 19.5 | | 8.3 | | | 12.5 |
| Approach LOS | B | | A | | | B |

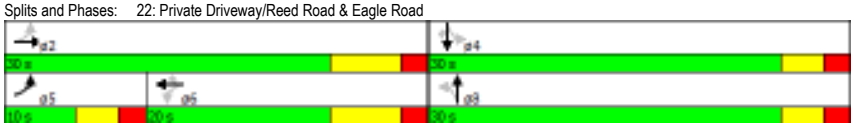
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 34.5 | | | | 34.5 | | 18.6 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 40.0 | | | | 40.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | | 13.1 | | | | 22.4 | | 11.5 |
| Green Ext Time (p_c), s | | 7.0 | | | | 6.1 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.7 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 131 | 361 | 0 | 1 | 269 | 395 | 0 | 0 | 0 | 613 | 1 | 411 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | | | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 10.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 30.0 | 30.0 | | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 16.7% | 50.0% | | 33.3% | 33.3% | 33.3% | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.4 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 131 | 361 | 0 | 1 | 269 | 395 | 0 | 0 | 0 | 613 | 1 | 411 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1844 |
| Adj Flow Rate, veh/h | 136 | 376 | 0 | 1 | 280 | 326 | 0 | 0 | 0 | 639 | 1 | 393 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cap, veh/h | 368 | 756 | 0 | 60 | 403 | 342 | 0 | 823 | 0 | 649 | 84 | 679 |
| Arrive On Green | 0.10 | 0.40 | 0.00 | 0.22 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.42 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1726 | 1466 | 0 | 1900 | 0 | 1302 | 2 | 1567 |
| Grp Volume(v), veh/h | 136 | 376 | 0 | 281 | 0 | 326 | 0 | 0 | 0 | 640 | 0 | 393 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1304 | 0 | 1567 |
| Q Serve(g_s), s | 3.1 | 8.9 | 0.0 | 0.0 | 0.0 | 13.2 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 11.4 |
| Cycle Q Clear(g_c), s | 3.1 | 8.9 | 0.0 | 9.1 | 0.0 | 13.2 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 11.4 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 368 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 669 | 0 | 679 |
| V/C Ratio(X) | 0.37 | 0.50 | 0.00 | 0.65 | 0.00 | 0.95 | 0.00 | 0.00 | 0.00 | 0.96 | 0.00 | 0.58 |
| Avail Cap(c_a), veh/h | 372 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 663 | 0 | 679 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.1 | 13.5 | 0.0 | 21.2 | 0.0 | 22.8 | 0.0 | 0.0 | 0.0 | 19.2 | 0.0 | 12.9 |
| Incr Delay (d2), s/veh | 0.6 | 0.9 | 0.0 | 4.1 | 0.0 | 36.7 | 0.0 | 0.0 | 0.0 | 24.6 | 0.0 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 5.2 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.9 | 8.4 | 0.0 | 8.7 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 22.1 | 0.0 | 8.9 |
| LnGrp Delay(d),s/veh | 15.1 | 14.4 | 0.0 | 25.4 | 0.0 | 64.7 | 0.0 | 0.0 | 0.0 | 45.3 | 0.0 | 14.1 |
| LnGrp LOS | B | B | | C | | E | | | | D | | B |
| Approach Vol, veh/h | | 512 | | | 607 | | | 0 | | | 1033 | |
| Approach Delay, s/veh | | 14.5 | | | 46.5 | | | 0.0 | | | 33.4 | |
| Approach LOS | | B | | | D | | | | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.0 | | 30.0 | 10.0 | 20.0 | | 30.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 23.0 | | 25.0 | 5.0 | 13.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 11.4 | | 27.0 | 5.6 | 15.7 | | 0.0 |
| Green Ext Time (p_c), s | | 5.2 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.6 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 16 | 48 | 46 | 1302 | 2159 | 104 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 501 | 187 | |
| Travel Time (s) | 28.2 | | | 8.5 | 3.2 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 27.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 16 | 48 | 46 | 1302 | 2159 | 104 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 17 | 50 | 48 | 1356 | 2249 | 108 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3077 | 1179 | 2357 | 0 | - | 0 |
| Stage 1 | 2303 | - | - | - | - | - |
| Stage 2 | 774 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 6 | *302 | 269 | - | - | - |
| Stage 1 | *233 | - | - | - | - | - |
| Stage 2 | *685 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 5 | *302 | 269 | - | - | - |
| Mov Cap-2 Maneuver | *~ 5 | - | - | - | - | - |
| Stage 1 | *233 | - | - | - | - | - |
| Stage 2 | *562 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 1545 | 0.7 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 269 | - | 19 | - | - |
| HCM Lane V/C Ratio | 0.178 | - | 3.509 | - | - |
| HCM Control Delay (s) | 21.3 | - | $ 1545 | - | - |
| HCM Lane LOS | C | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | 8.8 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 3 | 22 | 0 | 21 | 1 | 1318 | 5 | 3 | 2206 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 491 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.4 | |
| Confl. Peds. (#/hr) | | | | 2 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 8.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 0 | 3 | 22 | 0 | 21 | 1 | 1318 | 5 | 3 | 2206 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 1 | 0 | 3 | 22 | 0 | 21 | 1 | 1345 | 5 | 3 | 2251 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2933 | 3611 | 1126 | 2483 | 3608 | 677 | 2251 | 0 | 0 | 1352 | 0 | 0 |
| Stage 1 | 2257 | 2257 | - | 1351 | 1351 | - | - | - | - | - | - | - |
| Stage 2 | 676 | 1354 | - | 1132 | 2257 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.5 | 7.2 | 7.8 | 5.9 | 7 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *3 | *5 | *180 | *~ 13 | *10 | *617 | *218 | - | - | *746 | - | - |
| Stage 1 | *187 | *131 | - | *639 | *448 | - | - | - | - | - | - | - |
| Stage 2 | *639 | *448 | - | *187 | *131 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *3 | *5 | *180 | *~ 13 | *10 | *616 | *218 | - | - | *746 | - | - |
| Mov Cap-2 Maneuver | *3 | *5 | - | *~ 13 | *10 | - | - | - | - | - | - | - |
| Stage 1 | *186 | *130 | - | *635 | *445 | - | - | - | - | - | - | - |
| Stage 2 | *614 | *445 | - | *183 | *130 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 417.2 | $ 696.5 | 0 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 218 | - | - | 12 | 25 | * 746 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | - | 0.34 | 1.755 | 0.004 | - | - |
| HCM Control Delay (s) | 21.6 | - | - | $ 417.2 | $ 696.5 | 9.8 | - | - |
| HCM Lane LOS | C | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.8 | 5.4 | 0 | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 9 | 0 | 1354 | 2100 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 238 | | | 870 | 546 | |
| Travel Time (s) | 6.5 | | | 14.8 | 9.3 | |
| Confl. Peds. (#/hr) | 2 | 2 | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

**Intersection Summary**

Area Type: Other





**Intersection**

Int Delay, s/veh 0.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 9 | 0 | 1354 | 2100 | 0 |
| Conflicting Peds, #/hr | 2 | 2 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 1 | 9 | 0 | 1410 | 2188 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2895 | 1096 | 2190 | 0 | - | 0 |
| Stage 1 | 2190 | - | - | - | - | - |
| Stage 2 | 705 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *7 | *258 | *312 | - | - | - |
| Stage 1 | *267 | - | - | - | - | - |
| Stage 2 | *639 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *7 | *258 | *312 | - | - | - |
| Mov Cap-2 Maneuver | *174 | - | - | - | - | - |
| Stage 1 | *267 | - | - | - | - | - |
| Stage 2 | *638 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.1 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 312 | - | 174 | 258 | - | - |
| HCM Lane V/C Ratio | - | - | 0.006 | 0.036 | - | - |
| HCM Control Delay (s) | 0 | - | 25.8 | 19.5 | - | - |
| HCM Lane LOS | A | - | D | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0.1 | - | - |

**Notes**

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 25 | 1290 | 3 | 70 | 2236 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 25 | 1290 | 3 | 70 | 2236 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 26 | 1330 | 3 | 72 | 2305 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2628 | 666 | 0 | 0 | 1333 | 0 |
| Stage 1 | 1331 | - | - | - | - | - |
| Stage 2 | 1297 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.6 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *15 | *661 | - | - | *799 | - |
| Stage 1 | *685 | - | - | - | - | - |
| Stage 2 | *187 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *15 | *661 | - | - | *799 | - |
| Mov Cap-2 Maneuver | *15 | - | - | - | - | - |
| Stage 1 | *685 | - | - | - | - | - |
| Stage 2 | *187 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.7 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 661 | * 799 | - |
| HCM Lane V/C Ratio | - | - | 0.039 | 0.09 | - |
| HCM Control Delay (s) | - | - | 10.7 | 10 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.3 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 117 | 100 | 25 | 538 | 615 | 268 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 10.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 117 | 100 | 25 | 538 | 615 | 268 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 1 | 0 | 1 | 0 | 1 | 1 |
| Mvmt Flow | 119 | 102 | 26 | 549 | 628 | 273 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1364 | 764 | 901 | 0 | - | 0 |
| Stage 1 | 764 | - | - | - | - | - |
| Stage 2 | 600 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *177 | 557 | 473 | - | - | - |
| Stage 1 | *580 | - | - | - | - | - |
| Stage 2 | *701 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *163 | 557 | 473 | - | - | - |
| Mov Cap-2 Maneuver | *163 | - | - | - | - | - |
| Stage 1 | *580 | - | - | - | - | - |
| Stage 2 | *646 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 81.3 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 473 | - | 242 | - | - |
| HCM Lane V/C Ratio | 0.054 | - | 0.915 | - | - |
| HCM Control Delay (s) | 13 | 0 | 81.3 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 7.9 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 111 | 405 | 347 | 24 | 11 | 52 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 413 | 339 | | 601 | |
| Travel Time (s) | | 8.0 | 6.6 | | 16.4 | |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 0% | 0% |
| Parking (#/hr) | | | | 0 | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 111 | 405 | 347 | 24 | 11 | 52 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 126 | 460 | 394 | 27 | 12 | 59 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 422 | 0 | - | 0 | 890 | 408 |
| Stage 1 | - | - | - | - | 408 | - |
| Stage 2 | - | - | - | - | 482 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1089 | - | - | - | 279 | 697 |
| Stage 1 | - | - | - | - | 735 | - |
| Stage 2 | - | - | - | - | 629 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1089 | - | - | - | 236 | 697 |
| Mov Cap-2 Maneuver | - | - | - | - | 236 | - |
| Stage 1 | - | - | - | - | 735 | - |
| Stage 2 | - | - | - | - | 532 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.2 | 0 | 13 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1089 | - | - | - | 520 |
| HCM Lane V/C Ratio | 0.116 | - | - | - | 0.138 |
| HCM Control Delay (s) | 8.7 | 0.4 | - | - | 13 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.5 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 24 | 399 | 375 | 34 | 75 | 48 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 339 | 275 | | 216 | |
| Travel Time (s) | | 6.6 | 5.4 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 3 | 3 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 3% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 24 | 399 | 375 | 34 | 75 | 48 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 3 | 3 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 4 | 3 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 27 | 448 | 421 | 38 | 84 | 54 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 463 | 0 | - | 0 | 721 | 443 |
| Stage 1 | - | - | - | - | 443 | - |
| Stage 2 | - | - | - | - | 278 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1056 | - | - | - | 374 | 663 |
| Stage 1 | - | - | - | - | 700 | - |
| Stage 2 | - | - | - | - | 852 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1056 | - | - | - | 359 | 661 |
| Mov Cap-2 Maneuver | - | - | - | - | 359 | - |
| Stage 1 | - | - | - | - | 698 | - |
| Stage 2 | - | - | - | - | 821 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 17 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1056 | - | - | - | 437 |
| HCM Lane V/C Ratio | 0.026 | - | - | - | 0.316 |
| HCM Control Delay (s) | 8.5 | 0.1 | - | - | 17 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.3 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 44 | 292 | 491 | 29 | 181 | 744 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 9.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 44 | 292 | 491 | 29 | 181 | 744 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 48 | 317 | 534 | 32 | 197 | 809 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1736 | 534 | 0 | 0 | 534 | 0 |
| Stage 1 | 534 | - | - | - | - | - |
| Stage 2 | 1202 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 125 | 595 | - | - | 786 | - |
| Stage 1 | 706 | - | - | - | - | - |
| Stage 2 | 355 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 68 | 595 | - | - | 786 | - |
| Mov Cap-2 Maneuver | 157 | - | - | - | - | - |
| Stage 1 | 706 | - | - | - | - | - |
| Stage 2 | 193 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 43.4 | 0 | 2.2 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 436 | 786 | - |
| HCM Lane V/C Ratio | - | - | 0.838 | 0.25 | - |
| HCM Control Delay (s) | - | - | 43.4 | 11.1 | 0 |
| HCM Lane LOS | - | - | E | B | A |
| HCM 95th %tile Q(veh) | - | - | 8.1 | 1 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 14 | 446 | 351 | 24 | 78 | 50 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 14 | 446 | 351 | 24 | 78 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 1 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 15 | 474 | 373 | 26 | 83 | 53 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 400 | 0 | - | 0 | 891 | 200 |
| Stage 1 | - | - | - | - | 387 | - |
| Stage 2 | - | - | - | - | 504 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.1 | 7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.9 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1108 | - | - | - | 307 | 911 |
| Stage 1 | - | - | - | - | 756 | - |
| Stage 2 | - | - | - | - | 680 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1108 | - | - | - | 302 | 910 |
| Mov Cap-2 Maneuver | - | - | - | - | 302 | - |
| Stage 1 | - | - | - | - | 755 | - |
| Stage 2 | - | - | - | - | 670 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 18.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1108 | - | - | - | 409 |
| HCM Lane V/C Ratio | 0.013 | - | - | - | 0.333 |
| HCM Control Delay (s) | 8.3 | - | - | - | 18.1 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.4 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 104 | 67 | 119 | 19 | 29 | 18 | 63 | 364 | 4 | 22 | 470 | 94 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 217 | | | 204 | | | 398 | | | 586 | |
| Travel Time (s) | | 5.9 | | | 5.6 | | | 10.9 | | | 16.0 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 39.8 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 104 | 67 | 119 | 0 | 19 | 29 | 18 | 0 | 63 | 364 | 4 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 25 |
| Mvmt Flow | 0 | 111 | 71 | 127 | 0 | 20 | 31 | 19 | 0 | 67 | 387 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.3 | 12.5 | 31.5 |
| HCM LOS | B | B | D |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 15% | 61% | 0% | 29% | 4% |
| Vol Thru, % | 84% | 39% | 0% | 44% | 80% |
| Vol Right, % | 1% | 0% | 100% | 27% | 16% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 431 | 171 | 119 | 66 | 586 |
| LT Vol | 63 | 104 | 0 | 19 | 22 |
| Through Vol | 364 | 67 | 0 | 29 | 470 |
| RT Vol | 4 | 0 | 119 | 18 | 94 |
| Lane Flow Rate | 459 | 182 | 127 | 70 | 623 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.813 | 0.405 | 0.245 | 0.157 | 1 |
| Departure Headway (Hd) | 6.387 | 8.013 | 6.978 | 8.031 | 6.129 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 569 | 453 | 518 | 448 | 598 |
| Service Time | 4.411 | 5.681 | 4.677 | 6.054 | 4.129 |
| HCM Lane V/C Ratio | 0.807 | 0.402 | 0.245 | 0.156 | 1.042 |
| HCM Control Delay | 31.5 | 16 | 11.9 | 12.5 | 61.6 |
| HCM Lane LOS | D | C | B | B | F |
| HCM 95th-tile Q | 8.1 | 1.9 | 1 | 0.6 | 14.8 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 22 | 470 | 94 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 23 | 500 | 100 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 61.6 |
| HCM LOS | F |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 339 | 167 | 349 | 315 | 40 | 92 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1381 | | | 651 | 472 | |
| Travel Time (s) | 31.4 | | | 14.8 | 10.7 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 15 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 339 | 167 | 349 | 315 | 40 | 92 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Mvmt Flow | 346 | 170 | 356 | 321 | 41 | 94 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 346 | 0 | 1380 | 346 |
| Stage 1 | - | - | - | - | 346 | - |
| Stage 2 | - | - | - | - | 1034 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 914 | - | 69 | 659 |
| Stage 1 | - | - | - | - | 653 | - |
| Stage 2 | - | - | - | - | 191 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 914 | - | ~ 36 | 659 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 36 | - |
| Stage 1 | - | - | - | - | 653 | - |
| Stage 2 | - | - | - | - | 100 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 6 | 117.9 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 36 | 659 | - | - | 914 | - |
| HCM Lane V/C Ratio | 1.134 | 0.142 | - | - | 0.39 | - |
| HCM Control Delay (s) | $ 363 | 11.4 | - | - | 11.4 | 0 |
| HCM Lane LOS | F | B | - | - | B | A |
| HCM 95th %tile Q(veh) | 4.2 | 0.5 | - | - | 1.9 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 305 | 463 | 1186 | 343 | 313 | 1035 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 30.0 | 14.0 | 36.0 | 36.0 | 14.0 | 50.0 |
| Total Split (%) | 37.5% | 17.5% | 45.0% | 45.0% | 17.5% | 62.5% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 49 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 305 | 463 | 1186 | 343 | 313 | 1035 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 311 | 355 | 1210 | 282 | 319 | 1056 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 431 | 552 | 1512 | 711 | 293 | 2257 |
| Arrive On Green | 0.26 | 0.26 | 0.45 | 0.45 | 0.11 | 0.63 |
| Sat Flow, veh/h | 1663 | 1485 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 311 | 355 | 1210 | 282 | 319 | 1056 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 13.6 | 15.8 | 24.9 | 9.6 | 7.7 | 12.4 |
| Cycle Q Clear(g_c), s | 13.6 | 15.8 | 24.9 | 9.6 | 7.7 | 12.4 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 431 | 552 | 1512 | 711 | 293 | 2257 |
| V/C Ratio(X) | 0.72 | 0.64 | 0.80 | 0.40 | 1.09 | 0.47 |
| Avail Cap(c_a), veh/h | 541 | 649 | 1512 | 711 | 343 | 2257 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.73 | 0.73 | 0.30 | 0.30 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.0 | 20.8 | 18.8 | 14.6 | 24.2 | 7.8 |
| Incr Delay (d2), s/veh | 2.6 | 1.2 | 1.4 | 0.5 | 76.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 54.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.1 | 10.2 | 15.0 | 6.1 | 27.7 | 10.3 |
| LnGrp Delay(d),s/veh | 29.6 | 22.0 | 20.3 | 15.1 | 154.7 | 8.5 |
| LnGrp LOS | C | C | C | B | F | A |
| Approach Vol, veh/h | 666 | | 1492 | | | 1375 |
| Approach Delay, s/veh | 25.5 | | 19.3 | | | 42.4 |
| Approach LOS | C | | B | | | D |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.0 | 41.3 | | | | 55.3 | | 24.7 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 30.0 | | | | 44.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 27.4 | | | | 14.9 | | 18.3 |
| Green Ext Time (p_c), s | 0.0 | 2.3 | | | | 15.5 | | 1.4 |

**Intersection Summary**

HCM 2010 Ctrl Delay 29.5
HCM 2010 LOS C

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 18 | 17 | 16 | 235 | 13 | 233 | 18 | 1252 | 171 | 175 | 1200 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | 13.0 | 13.0 | 30.0 | 30.0 | 13.0 | 30.0 | |
| Total Split (%) | 38.6% | 38.6% | | 38.6% | 38.6% | 18.6% | 18.6% | 42.9% | 42.9% | 18.6% | 42.9% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 1 (1%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 17 | 16 | 235 | 13 | 233 | 18 | 1252 | 171 | 175 | 1200 | 12 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1794 | 1800 | 1764 | 1764 | 1764 | 1764 | 1729 | 1816 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 19 | 18 | 10 | 250 | 14 | 204 | 19 | 1332 | 0 | 186 | 1277 | 12 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cap, veh/h | 72 | 60 | 16 | 330 | 13 | 641 | 190 | 1174 | 575 | 288 | 1591 | 15 |
| Arrive On Green | 0.30 | 0.31 | 0.30 | 0.30 | 0.31 | 0.31 | 0.03 | 0.38 | 0.00 | 0.11 | 0.46 | 0.44 |
| Sat Flow, veh/h | 0 | 190 | 51 | 732 | 41 | 1499 | 1680 | 3286 | 1544 | 1714 | 3472 | 33 |
| Grp Volume(v), veh/h | 47 | 0 | 0 | 264 | 0 | 204 | 19 | 1332 | 0 | 186 | 629 | 660 |
| Grp Sat Flow(s),veh/h/ln | 242 | 0 | 0 | 773 | 0 | 1499 | 1680 | 1643 | 1544 | 1714 | 1710 | 1794 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.4 | 0.5 | 26.5 | 0.0 | 4.1 | 22.1 | 22.1 |
| Cycle Q Clear(g_c), s | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 6.4 | 0.5 | 26.5 | 0.0 | 4.1 | 22.1 | 22.1 |
| Prop In Lane | 0.40 | | 0.21 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 145 | 0 | 0 | 332 | 0 | 641 | 190 | 1174 | 575 | 288 | 784 | 822 |
| V/C Ratio(X) | 0.32 | 0.00 | 0.00 | 0.79 | 0.00 | 0.32 | 0.10 | 1.14 | 0.00 | 0.65 | 0.80 | 0.80 |
| Avail Cap(c_a), veh/h | 145 | 0 | 0 | 332 | 0 | 631 | 377 | 1245 | 585 | 323 | 784 | 822 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.68 | 0.68 | 0.00 | 0.84 | 0.84 | 0.84 |
| Uniform Delay (d), s/veh | 19.5 | 0.0 | 0.0 | 25.4 | 0.0 | 13.3 | 15.5 | 22.5 | 0.0 | 15.2 | 16.4 | 16.4 |
| Incr Delay (d2), s/veh | 1.3 | 0.0 | 0.0 | 12.6 | 0.0 | 0.3 | 0.2 | 68.5 | 0.0 | 3.1 | 7.2 | 6.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.7 | 0.0 | 1.0 | 0.1 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 1.3 | 0.0 | 0.0 | 8.4 | 0.0 | 4.8 | 0.4 | 42.4 | 0.0 | 4.3 | 17.3 | 17.9 |
| LnGrp Delay(d),s/veh | 20.8 | 0.0 | 0.0 | 37.9 | 0.0 | 13.6 | 15.6 | 101.8 | 0.0 | 19.3 | 23.7 | 23.4 |
| LnGrp LOS | C | | | D | | B | B | F | | B | C | C |
| Approach Vol, veh/h | | 47 | | | 468 | | | 1351 | | | 1475 | |
| Approach Delay, s/veh | | 20.8 | | | 27.3 | | | 100.6 | | | 23.0 | |
| Approach LOS | | C | | | C | | | F | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.5 | 31.5 | | 27.0 | 5.9 | 37.1 | | 27.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 24.0 | | 21.0 | 8.0 | 24.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 6.6 | 29.0 | | 23.0 | 3.0 | 24.6 | | 23.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |

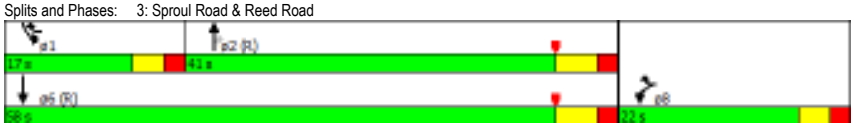
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 54.9 |
| HCM 2010 LOS | D |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 246 | 138 | 1130 | 272 | 264 | 1222 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 417 | | 187 | | | 884 |
| Travel Time (s) | 8.1 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 2% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 22.0 | | 41.0 | 41.0 | 17.0 | 58.0 |
| Total Split (%) | 27.5% | | 51.3% | 51.3% | 21.3% | 72.5% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 32 (40%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 246 | 138 | 1130 | 272 | 264 | 1222 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1729 | 1836 | 1818 |
| Adj Flow Rate, veh/h | 251 | 141 | 1153 | 77 | 269 | 1247 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 2 | 0 | 1 |
| Cap, veh/h | 325 | 547 | 1616 | 716 | 284 | 2416 |
| Arrive On Green | 0.19 | 0.19 | 0.49 | 0.49 | 0.16 | 0.70 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1470 | 1749 | 3545 |
| Grp Volume(v), veh/h | 251 | 141 | 1153 | 77 | 269 | 1247 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1470 | 1749 | 1727 |
| Q Serve(g_s), s | 11.0 | 5.2 | 21.8 | 2.3 | 12.2 | 13.6 |
| Cycle Q Clear(g_c), s | 11.0 | 5.2 | 21.8 | 2.3 | 12.2 | 13.6 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 325 | 547 | 1616 | 716 | 284 | 2416 |
| V/C Ratio(X) | 0.77 | 0.26 | 0.71 | 0.11 | 0.95 | 0.52 |
| Avail Cap(c_a), veh/h | 390 | 605 | 1616 | 716 | 284 | 2416 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.66 | 0.66 |
| Uniform Delay (d), s/veh | 30.9 | 18.6 | 16.1 | 11.1 | 33.2 | 5.7 |
| Incr Delay (d2), s/veh | 7.7 | 0.2 | 2.7 | 0.3 | 30.3 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.9 | 4.1 | 15.9 | 1.8 | 12.0 | 10.1 |
| LnGrp Delay(d),s/veh | 38.5 | 18.8 | 18.8 | 11.4 | 63.4 | 6.2 |
| LnGrp LOS | D | B | B | B | E | A |
| Approach Vol, veh/h | 392 | | 1230 | | | 1516 |
| Approach Delay, s/veh | 31.4 | | 18.4 | | | 16.4 |
| Approach LOS | C | | B | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 44.0 | | | | 61.0 | | 19.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 35.0 | | | | 52.0 | | 17.0 |
| Max Q Clear Time (g_c+I1), s | 14.7 | 24.3 | | | | 16.1 | | 13.5 |
| Green Ext Time (p_c), s | 0.0 | 7.8 | | | | 16.7 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.0 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 437 | 899 | 3 | 444 | 950 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 451 | 930 | 0 | 458 | 979 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 43.0 | 37.0 | | 43.0 | 80.0 |
| Total Split (%) | | 53.8% | 46.3% | | 53.8% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | | 9.0 | 8.0 | | 9.0 | 8.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 28.1 | 34.9 | | 28.1 | 80.0 |
| Actuated g/C Ratio | | 0.35 | 0.44 | | 0.35 | 1.00 |
| v/c Ratio | | 0.50 | 0.61 | | 0.80 | 0.57 |
| Control Delay | | 17.5 | 7.4 | | 29.0 | 2.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.1 | 0.0 |
| Total Delay | | 17.5 | 7.4 | | 29.1 | 2.2 |
| LOS | | B | A | | C | A |
| Approach Delay | | | 7.4 | | | 10.8 |
| Approach LOS | | | A | | | B |
| Queue Length 50th (ft) | | 113 | 47 | | 195 | 27 |
| Queue Length 95th (ft) | | 142 | m88 | | 283 | 47 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1095 | 1527 | | 695 | 1706 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 14 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.41 | 0.61 | | 0.67 | 0.57 |

**Intersection Summary**

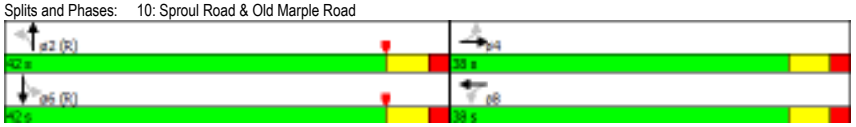
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 10.7 — Intersection LOS: B
Intersection Capacity Utilization 66.5% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 158 | 100 | 53 | 174 | 135 | 10 | 65 | 1173 | 69 | 3 | 884 | 109 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 38.0 | 38.0 | | 38.0 | 38.0 | | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Total Split (%) | 47.5% | 47.5% | | 47.5% | 47.5% | | 52.5% | 52.5% | | 52.5% | 52.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 158 | 100 | 53 | 174 | 135 | 10 | 65 | 1173 | 69 | 3 | 884 | 109 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1878 | 1818 | 1782 | 1746 | 1782 | 1773 | 1750 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 168 | 106 | 43 | 185 | 144 | 4 | 69 | 1248 | 68 | 3 | 940 | 102 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 281 | 162 | 59 | 279 | 185 | 5 | 100 | 1501 | 83 | 46 | 1711 | 186 |
| Arrive On Green | 0.30 | 0.31 | 0.30 | 0.30 | 0.31 | 0.30 | 0.55 | 0.56 | 0.55 | 0.55 | 0.56 | 0.55 |
| Sat Flow, veh/h | 676 | 517 | 187 | 667 | 589 | 15 | 91 | 2671 | 151 | 2 | 3058 | 331 |
| Grp Volume(v), veh/h | 317 | 0 | 0 | 333 | 0 | 0 | 679 | 0 | 706 | 556 | 0 | 489 |
| Grp Sat Flow(s),veh/h/ln | 1380 | 0 | 0 | 1271 | 0 | 0 | 1347 | 0 | 1566 | 1803 | 0 | 1587 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 | 21.4 | 0.0 | 28.9 | 0.0 | 0.0 | 15.7 |
| Cycle Q Clear(g_c), s | 16.7 | 0.0 | 0.0 | 20.2 | 0.0 | 0.0 | 37.2 | 0.0 | 28.9 | 15.7 | 0.0 | 15.7 |
| Prop In Lane | 0.53 | | 0.14 | 0.56 | | 0.01 | 0.10 | | 0.10 | 0.01 | | 0.21 |
| Lane Grp Cap(c), veh/h | 485 | 0 | 0 | 453 | 0 | 0 | 790 | 0 | 878 | 1030 | 0 | 890 |
| V/C Ratio(X) | 0.65 | 0.00 | 0.00 | 0.73 | 0.00 | 0.00 | 0.86 | 0.00 | 0.80 | 0.54 | 0.00 | 0.55 |
| Avail Cap(c_a), veh/h | 628 | 0 | 0 | 587 | 0 | 0 | 788 | 0 | 878 | 1034 | 0 | 890 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.6 | 0.0 | 0.0 | 26.0 | 0.0 | 0.0 | 15.7 | 0.0 | 14.2 | 11.2 | 0.0 | 11.2 |
| Incr Delay (d2), s/veh | 1.5 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 | 11.8 | 0.0 | 7.7 | 2.0 | 0.0 | 2.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.9 | 0.0 | 0.0 | 12.1 | 0.0 | 0.0 | 23.4 | 0.0 | 20.6 | 13.3 | 0.0 | 11.9 |
| LnGrp Delay(d),s/veh | 26.2 | 0.0 | 0.0 | 29.4 | 0.0 | 0.0 | 27.6 | 0.0 | 21.9 | 13.2 | 0.0 | 13.7 |
| LnGrp LOS | C | | | C | | | C | | C | B | | B |
| Approach Vol, veh/h | | 317 | | | 333 | | | 1385 | | | 1045 | |
| Approach Delay, s/veh | | 26.2 | | | 29.4 | | | 24.7 | | | 13.4 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.9 | | 30.1 | | 49.9 | | 30.1 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 32.0 | | 36.0 | | 32.0 |
| Max Q Clear Time (g_c+I1), s | | 39.2 | | 18.7 | | 17.7 | | 22.2 |
| Green Ext Time (p_c), s | | 0.0 | | 2.2 | | 10.8 | | 2.0 |

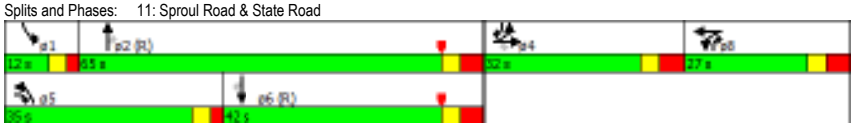
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.5 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 452 | 57 | 453 | 268 | 239 | 50 | 381 | 839 | 313 | 28 | 684 | 425 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 44% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 32.0 | 32.0 | 35.0 | 27.0 | 27.0 | | 35.0 | 65.0 | 27.0 | 12.0 | 42.0 | 32.0 |
| Total Split (%) | 23.5% | 23.5% | 25.7% | 19.9% | 19.9% | | 25.7% | 47.8% | 19.9% | 8.8% | 30.9% | 23.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 136
Actuated Cycle Length: 136
Offset: 34 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 452 | 57 | 453 | 268 | 239 | 50 | 381 | 839 | 313 | 28 | 684 | 425 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1828 | 1826 | 1872 | 1858 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 519 | 0 | 0 | 267 | 273 | 0 | 401 | 883 | 0 | 29 | 720 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 622 | 0 | 645 | 275 | 287 | 0 | 387 | 1576 | 939 | 53 | 908 | 691 |
| Arrive On Green | 0.17 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.23 | 0.48 | 0.00 | 0.03 | 0.28 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 519 | 0 | 0 | 267 | 273 | 0 | 401 | 883 | 0 | 29 | 720 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 19.5 | 0.0 | 0.0 | 20.3 | 19.8 | 0.0 | 31.0 | 25.0 | 0.0 | 2.3 | 26.4 | 0.0 |
| Cycle Q Clear(g_c), s | 19.5 | 0.0 | 0.0 | 20.3 | 19.8 | 0.0 | 31.0 | 25.0 | 0.0 | 2.3 | 26.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 622 | 0 | 645 | 275 | 287 | 0 | 387 | 1576 | 939 | 53 | 908 | 691 |
| V/C Ratio(X) | 0.83 | 0.00 | 0.00 | 0.97 | 0.95 | 0.00 | 1.04 | 0.56 | 0.00 | 0.55 | 0.79 | 0.00 |
| Avail Cap(c_a), veh/h | 672 | 0 | 651 | 275 | 287 | 0 | 387 | 1622 | 960 | 101 | 954 | 691 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 54.5 | 0.0 | 0.0 | 57.5 | 57.5 | 0.0 | 52.5 | 26.3 | 0.0 | 65.0 | 46.3 | 0.0 |
| Incr Delay (d2), s/veh | 8.4 | 0.0 | 0.0 | 45.8 | 40.1 | 0.0 | 55.5 | 1.4 | 0.0 | 8.7 | 7.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 5.5 | 0.0 | 0.0 | 25.7 | 28.4 | 0.0 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 16.6 | 0.0 | 0.0 | 21.9 | 22.3 | 0.0 | 38.9 | 18.0 | 0.0 | 2.2 | 19.4 | 0.0 |
| LnGrp Delay(d),s/veh | 68.4 | 0.0 | 0.0 | 129.0 | 126.0 | 0.0 | 125.8 | 27.7 | 0.0 | 73.7 | 53.3 | 0.0 |
| LnGrp LOS | E | | | F | F | | F | C | | E | D | |
| Approach Vol, veh/h | | 519 | | | 540 | | | 1284 | | | 749 | |
| Approach Delay, s/veh | | 68.4 | | | 127.5 | | | 58.4 | | | 54.1 | |
| Approach LOS | | E | | | F | | | E | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.2 | 71.2 | | 29.7 | 35.0 | 44.3 | | 27.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 7.0 | 58.0 | | 25.0 | 30.0 | 35.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 27.5 | | 22.0 | 33.5 | 28.9 | | 22.8 |
| Green Ext Time (p_c), s | 0.0 | 8.3 | | 0.7 | 0.0 | 3.6 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 71.1
HCM 2010 LOS E

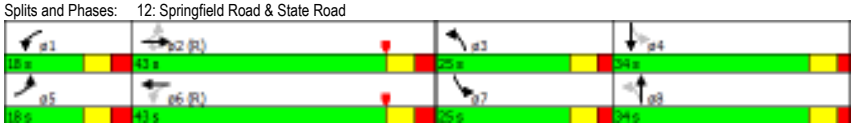
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 226 | 1366 | 446 | 40 | 1241 | 123 | 380 | 331 | 43 | 148 | 304 | 37 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 18.0 | 43.0 | 43.0 | 18.0 | 43.0 | | 25.0 | 34.0 | | 25.0 | 34.0 | |
| Total Split (%) | 15.0% | 35.8% | 35.8% | 15.0% | 35.8% | | 20.8% | 28.3% | | 20.8% | 28.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 226 | 1366 | 446 | 40 | 1241 | 123 | 380 | 331 | 43 | 148 | 304 | 37 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1730 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 238 | 1438 | 0 | 42 | 1306 | 0 | 400 | 348 | 0 | 156 | 320 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 235 | 1432 | 640 | 120 | 1140 | 0 | 374 | 486 | 0 | 252 | 368 | 0 |
| Arrive On Green | 0.10 | 0.41 | 0.00 | 0.04 | 0.35 | 0.00 | 0.17 | 0.27 | 0.00 | 0.10 | 0.20 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3374 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 238 | 1438 | 0 | 42 | 1306 | 0 | 400 | 348 | 0 | 156 | 320 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 12.0 | 49.0 | 0.0 | 1.9 | 41.4 | 0.0 | 20.0 | 21.1 | 0.0 | 8.3 | 20.5 | 0.0 |
| Cycle Q Clear(g_c), s | 12.0 | 49.0 | 0.0 | 1.9 | 41.4 | 0.0 | 20.0 | 21.1 | 0.0 | 8.3 | 20.5 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 235 | 1432 | 640 | 120 | 1140 | 0 | 374 | 486 | 0 | 252 | 368 | 0 |
| V/C Ratio(X) | 1.01 | 1.00 | 0.00 | 0.35 | 1.15 | 0.00 | 1.07 | 0.72 | 0.00 | 0.62 | 0.87 | 0.00 |
| Avail Cap(c_a), veh/h | 235 | 1425 | 638 | 226 | 1134 | 0 | 376 | 486 | 0 | 443 | 437 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 36.1 | 35.4 | 0.0 | 30.7 | 39.2 | 0.0 | 32.0 | 39.7 | 0.0 | 34.1 | 46.2 | 0.0 |
| Incr Delay (d2), s/veh | 62.2 | 24.8 | 0.0 | 1.7 | 76.1 | 0.0 | 66.7 | 5.0 | 0.0 | 2.5 | 15.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 45.0 | 24.7 | 0.0 | 0.0 | 27.1 | 0.0 | 52.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 24.3 | 56.5 | 0.0 | 1.7 | 60.6 | 0.0 | 23.8 | 16.8 | 0.0 | 7.4 | 17.5 | 0.0 |
| LnGrp Delay(d),s/veh | 143.4 | 84.8 | 0.0 | 32.4 | 142.3 | 0.0 | 151.0 | 44.8 | 0.0 | 36.6 | 61.3 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | D | | D | E | |
| Approach Vol, veh/h | | 1676 | | | 1348 | | | 748 | | | 476 | |
| Approach Delay, s/veh | | 93.1 | | | 138.9 | | | 101.6 | | | 53.2 | |
| Approach LOS | | F | | | F | | | F | | | D | |

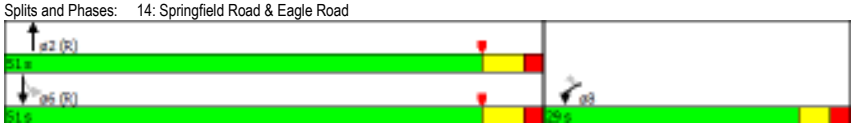
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.4 | 55.0 | 25.0 | 29.6 | 18.0 | 47.4 | 17.0 | 37.6 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 11.0 | 36.0 | 19.0 | 28.0 | 11.0 | 36.0 | 19.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.4 | 51.5 | 22.5 | 23.0 | 14.5 | 43.9 | 10.8 | 23.6 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 104.7 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 353 | 74 | 448 | 190 | 48 | 342 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 29.0 | 29.0 | 51.0 | | 51.0 | 51.0 |
| Total Split (%) | 36.3% | 36.3% | 63.8% | | 63.8% | 63.8% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Offset: 40 (50%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 353 | 74 | 448 | 190 | 48 | 342 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1693 | 1773 | 1791 | 1809 | 1793 |
| Adj Flow Rate, veh/h | 384 | 29 | 487 | 202 | 52 | 372 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 455 | 377 | 746 | 309 | 118 | 794 |
| Arrive On Green | 0.26 | 0.26 | 0.63 | 0.61 | 0.61 | 0.63 |
| Sat Flow, veh/h | 1740 | 1439 | 1192 | 494 | 107 | 1269 |
| Grp Volume(v), veh/h | 384 | 29 | 0 | 689 | 424 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1439 | 0 | 1686 | 1376 | 0 |
| Q Serve(g_s), s | 16.7 | 1.2 | 0.0 | 20.8 | 2.8 | 0.0 |
| Cycle Q Clear(g_c), s | 16.7 | 1.2 | 0.0 | 20.8 | 23.6 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.29 | 0.12 | |
| Lane Grp Cap(c), veh/h | 455 | 377 | 0 | 1055 | 894 | 0 |
| V/C Ratio(X) | 0.84 | 0.08 | 0.00 | 0.65 | 0.47 | 0.00 |
| Avail Cap(c_a), veh/h | 544 | 450 | 0 | 1055 | 894 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.50 | 0.00 |
| Uniform Delay (d), s/veh | 28.0 | 22.2 | 0.0 | 9.6 | 7.8 | 0.0 |
| Incr Delay (d2), s/veh | 10.0 | 0.1 | 0.0 | 3.1 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.3 | 0.9 | 0.0 | 15.8 | 7.6 | 0.0 |
| LnGrp Delay(d),s/veh | 38.0 | 22.3 | 0.0 | 12.7 | 8.7 | 0.0 |
| LnGrp LOS | D | C | | B | A | |
| Approach Vol, veh/h | 413 | | 689 | | | 424 |
| Approach Delay, s/veh | 36.9 | | 12.7 | | | 8.7 |
| Approach LOS | D | | B | | | A |

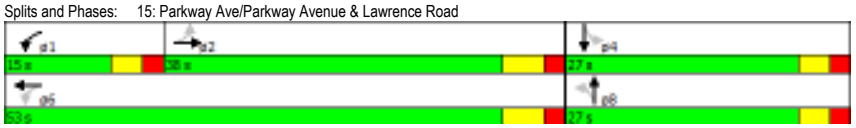
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 55.1 | | | | 55.1 | | 24.9 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 45.0 | | | | 45.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 22.8 | | | | 25.6 | | 19.2 |
| Green Ext Time (p_c), s | | 5.4 | | | | 5.2 | | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.2 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 480 | 130 | 178 | 543 | 9 | 203 | 25 | 291 | 6 | 14 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 586 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.0 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 38.0 | 38.0 | | 15.0 | 53.0 | | 27.0 | 27.0 | | 27.0 | 27.0 | |
| Total Split (%) | 47.5% | 47.5% | | 18.8% | 66.3% | | 33.8% | 33.8% | | 33.8% | 33.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 61.4 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 4 | 480 | 130 | 178 | 543 | 9 | 203 | 25 | 291 | 6 | 14 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1773 | 1791 | 1791 | 1761 | 1791 | 1755 | 1773 | 1773 | 1827 | 1775 | 1827 |
| Adj Flow Rate, veh/h | 4 | 522 | 137 | 193 | 590 | 9 | 221 | 27 | 228 | 7 | 15 | 12 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 67 | 1442 | 372 | 105 | 914 | 17 | 446 | 46 | 387 | 117 | 214 | 138 |
| Arrive On Green | 0.54 | 0.56 | 0.54 | 0.54 | 0.56 | 0.54 | 0.28 | 0.28 | 0.26 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 4 | 2588 | 672 | 3 | 1644 | 30 | 1298 | 162 | 1369 | 138 | 758 | 489 |
| Grp Volume(v), veh/h | 358 | 0 | 305 | 320 | 0 | 472 | 221 | 0 | 255 | 34 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1769 | 0 | 1495 | 80 | 0 | 1597 | 1298 | 0 | 1531 | 1384 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 6.4 | 20.2 | 0.0 | 10.4 | 3.1 | 0.0 | 8.1 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.3 | 0.0 | 6.4 | 20.2 | 0.0 | 10.4 | 10.8 | 0.0 | 8.1 | 8.1 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.45 | 0.60 | | 0.02 | 1.00 | | 0.89 | 0.21 | | 0.35 |
| Lane Grp Cap(c), veh/h | 1018 | 0 | 832 | 0 | 0 | 889 | 446 | 0 | 433 | 444 | 0 | 0 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.37 | 0.00 | 0.00 | 0.53 | 0.50 | 0.00 | 0.59 | 0.08 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1080 | 0 | 885 | 0 | 0 | 1375 | 615 | 0 | 632 | 637 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.9 | 0.0 | 7.1 | 0.0 | 0.0 | 7.8 | 18.6 | 0.0 | 17.7 | 14.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.3 | 0.0 | 0.0 | 0.5 | 0.9 | 0.0 | 1.3 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.1 | 0.0 | 4.9 | 0.0 | 0.0 | 8.1 | 5.7 | 0.0 | 6.3 | 0.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 7.2 | 0.0 | 7.4 | 0.0 | 0.0 | 8.3 | 19.5 | 0.0 | 19.0 | 15.0 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | A | B | | B | B | | |
| Approach Vol, veh/h | | 663 | | | 792 | | | 476 | | | 34 | |
| Approach Delay, s/veh | | 7.3 | | | 5.0 | | | 19.2 | | | 15.0 | |
| Approach LOS | | A | | | A | | | B | | | B | |

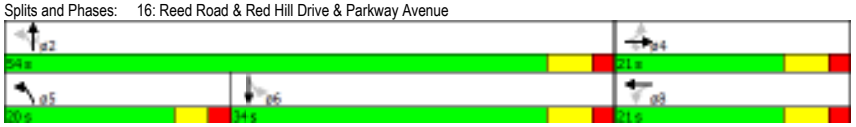
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.0 | | 19.7 | | 36.0 | | 19.7 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | 22.0 | | 47.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 8.4 | | 10.1 | | 22.2 | | 13.3 |
| Green Ext Time (p_c), s | | 6.6 | | 1.7 | | 6.6 | | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.4 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 104 | 78 | 237 | 22 | 80 | 3 | 237 | 332 | 27 | 4 | 284 | 54 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 309 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 6.0 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | | 20.0 | 54.0 | 54.0 | 34.0 | 34.0 | |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 28.0% | | 26.7% | 72.0% | 72.0% | 45.3% | 45.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 59.5 | |
| Natural Cycle: 55 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 104 | 78 | 237 | 22 | 80 | 3 | 237 | 332 | 27 | 4 | 284 | 54 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1737 | 1747 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1864 | 1836 |
| Adj Flow Rate, veh/h | 109 | 82 | 207 | 23 | 84 | 2 | 249 | 349 | 26 | 4 | 299 | 42 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 299 | 177 | 339 | 136 | 332 | 7 | 708 | 962 | 826 | 82 | 466 | 65 |
| Arrive On Green | 0.21 | 0.23 | 0.23 | 0.21 | 0.23 | 0.21 | 0.17 | 0.55 | 0.55 | 0.27 | 0.29 | 0.27 |
| Sat Flow, veh/h | 766 | 779 | 1485 | 173 | 1458 | 30 | 1647 | 1747 | 1499 | 6 | 1592 | 222 |
| Grp Volume(v), veh/h | 191 | 0 | 207 | 109 | 0 | 0 | 249 | 349 | 26 | 345 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1544 | 0 | 1485 | 1662 | 0 | 0 | 1647 | 1747 | 1499 | 1820 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 3.9 | 5.1 | 0.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 5.6 | 4.5 | 0.0 | 0.0 | 3.9 | 5.1 | 0.4 | 7.6 | 0.0 | 0.0 |
| Prop In Lane | 0.57 | | 1.00 | 0.21 | | 0.02 | 1.00 | | 1.00 | 0.01 | | 0.12 |
| Lane Grp Cap(c), veh/h | 443 | 0 | 339 | 438 | 0 | 0 | 708 | 962 | 826 | 573 | 0 | 0 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.61 | 0.25 | 0.00 | 0.00 | 0.35 | 0.36 | 0.03 | 0.60 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 620 | 0 | 526 | 640 | 0 | 0 | 1012 | 1895 | 1627 | 1204 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.5 | 0.0 | 15.7 | 14.4 | 0.0 | 0.0 | 6.2 | 5.7 | 4.6 | 14.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 1.8 | 0.3 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 1.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.0 | 0.0 | 4.4 | 2.1 | 0.0 | 0.0 | 3.3 | 4.5 | 0.3 | 7.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 16.1 | 0.0 | 17.5 | 14.7 | 0.0 | 0.0 | 6.6 | 5.9 | 4.7 | 15.1 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | A | A | B | | |
| Approach Vol, veh/h | | 398 | | | 109 | | | 624 | | | 345 | |
| Approach Delay, s/veh | | 16.8 | | | 14.7 | | | 6.1 | | | 15.1 | |
| Approach LOS | | B | | | B | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 29.8 | | 15.3 | 11.6 | 18.2 | | 15.3 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 48.0 | | 15.0 | 15.0 | 28.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 7.6 | | 8.1 | 6.4 | 9.6 | | 6.5 |
| Green Ext Time (p_c), s | | 2.9 | | 1.2 | 0.5 | 2.6 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.7 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 195 | 70 | 341 | 135 | 79 | 427 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 3% | 4% | 1% | 3% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 32.0 | 32.0 | 43.0 | | 43.0 | 43.0 |
| Total Split (%) | 42.7% | 42.7% | 57.3% | | 57.3% | 57.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 44.4 | |
| Natural Cycle: 40 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 195 | 70 | 341 | 135 | 79 | 427 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1748 | 1731 | 1772 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 210 | 26 | 367 | 122 | 85 | 459 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 3 | 4 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 358 | 316 | 633 | 210 | 472 | 885 |
| Arrive On Green | 0.21 | 0.21 | 0.50 | 0.47 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1664 | 1471 | 1274 | 424 | 864 | 1782 |
| Grp Volume(v), veh/h | 210 | 26 | 0 | 489 | 85 | 459 |
| Grp Sat Flow(s),veh/h/ln | 1664 | 1471 | 0 | 1698 | 864 | 1782 |
| Q Serve(g_s), s | 3.9 | 0.5 | 0.0 | 7.1 | 2.6 | 6.1 |
| Cycle Q Clear(g_c), s | 3.9 | 0.5 | 0.0 | 7.1 | 9.2 | 6.1 |
| Prop In Lane | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Lane Grp Cap(c), veh/h | 358 | 316 | 0 | 843 | 472 | 885 |
| V/C Ratio(X) | 0.59 | 0.08 | 0.00 | 0.58 | 0.18 | 0.52 |
| Avail Cap(c_a), veh/h | 1296 | 1145 | 0 | 1860 | 990 | 1953 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.2 | 10.9 | 0.0 | 6.3 | 9.3 | 5.9 |
| Incr Delay (d2), s/veh | 1.5 | 0.1 | 0.0 | 0.6 | 0.2 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.5 | 0.4 | 0.0 | 6.2 | 1.1 | 5.5 |
| LnGrp Delay(d),s/veh | 13.8 | 11.0 | 0.0 | 6.9 | 9.4 | 6.4 |
| LnGrp LOS | B | B | | A | A | A |
| Approach Vol, veh/h | 236 | | 489 | | | 544 |
| Approach Delay, s/veh | 13.5 | | 6.9 | | | 6.9 |
| Approach LOS | B | | A | | | A |

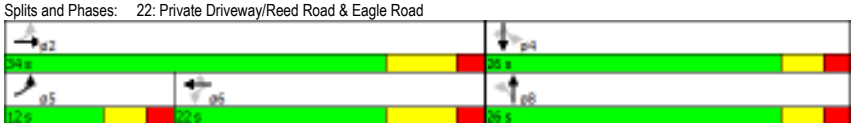
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 22.2 | | | | 22.2 | | 12.4 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 37.0 | | | | 37.0 | | 26.0 |
| Max Q Clear Time (g_c+I1), s | | 9.1 | | | | 11.7 | | 6.4 |
| Green Ext Time (p_c), s | | 4.6 | | | | 4.5 | | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.1 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 143 | 198 | 0 | 0 | 281 | 337 | 1 | 0 | 1 | 450 | 0 | 171 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 34.0 | | 22.0 | 22.0 | 22.0 | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 |
| Total Split (%) | 20.0% | 56.7% | | 36.7% | 36.7% | 36.7% | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 57.6 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 143 | 198 | 0 | 0 | 281 | 337 | 1 | 0 | 1 | 450 | 0 | 171 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1808 |
| Adj Flow Rate, veh/h | 154 | 213 | 0 | 0 | 302 | 190 | 1 | 0 | 1 | 484 | 0 | 173 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cap, veh/h | 424 | 837 | 0 | 0 | 470 | 403 | 92 | 31 | 31 | 448 | 0 | 574 |
| Arrive On Green | 0.11 | 0.45 | 0.00 | 0.00 | 0.27 | 0.27 | 0.36 | 0.00 | 0.36 | 0.36 | 0.00 | 0.38 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 83 | 83 | 893 | 0 | 1537 |
| Grp Volume(v), veh/h | 154 | 213 | 0 | 0 | 302 | 190 | 2 | 0 | 0 | 484 | 0 | 173 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 166 | 0 | 0 | 893 | 0 | 1537 |
| Q Serve(g_s), s | 3.2 | 4.2 | 0.0 | 0.0 | 8.9 | 6.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.6 |
| Cycle Q Clear(g_c), s | 3.2 | 4.2 | 0.0 | 0.0 | 8.9 | 6.3 | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 4.6 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 424 | 837 | 0 | 0 | 470 | 403 | 151 | 0 | 0 | 433 | 0 | 574 |
| V/C Ratio(X) | 0.36 | 0.25 | 0.00 | 0.00 | 0.64 | 0.47 | 0.01 | 0.00 | 0.00 | 1.12 | 0.00 | 0.30 |
| Avail Cap(c_a), veh/h | 478 | 882 | 0 | 0 | 475 | 404 | 153 | 0 | 0 | 446 | 0 | 580 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.0 | 9.8 | 0.0 | 0.0 | 18.9 | 17.7 | 14.9 | 0.0 | 0.0 | 22.1 | 0.0 | 13.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.3 | 0.0 | 0.0 | 3.6 | 1.5 | 0.0 | 0.0 | 0.0 | 79.7 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.9 | 3.9 | 0.0 | 0.0 | 8.4 | 5.0 | 0.0 | 0.0 | 0.0 | 30.2 | 0.0 | 3.6 |
| LnGrp Delay(d),s/veh | 12.6 | 10.1 | 0.0 | 0.0 | 22.6 | 19.2 | 15.0 | 0.0 | 0.0 | 101.8 | 0.0 | 13.3 |
| LnGrp LOS | B | B | | | C | B | B | | | F | | B |
| Approach Vol, veh/h | | 367 | | | 492 | | | 2 | | | 657 | |
| Approach Delay, s/veh | | 11.1 | | | 21.3 | | | 15.0 | | | 78.5 | |
| Approach LOS | | B | | | C | | | B | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.3 | | 26.0 | 10.3 | 22.0 | | 26.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 21.0 | 7.0 | 15.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 6.7 | | 23.0 | 5.7 | 11.4 | | 23.0 |
| Green Ext Time (p_c), s | | 4.8 | | 0.0 | 0.1 | 1.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 43.6 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 17 | 23 | 54 | 1754 | 1442 | 59 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 519 | 187 | |
| Travel Time (s) | 28.2 | | | 8.8 | 3.2 | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 4% | 4% | 2% | 1% | 2% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 17 | 23 | 54 | 1754 | 1442 | 59 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 0 | 4 | 4 | 2 | 1 | 2 |
| Mvmt Flow | 17 | 23 | 55 | 1772 | 1457 | 60 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2481 | 758 | 1516 | 0 | - | 0 |
| Stage 1 | 1486 | - | - | - | - | - |
| Stage 2 | 995 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *39 | *634 | 712 | - | - | - |
| Stage 1 | *623 | - | - | - | - | - |
| Stage 2 | *458 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *36 | *634 | 712 | - | - | - |
| Mov Cap-2 Maneuver | *36 | - | - | - | - | - |
| Stage 1 | *623 | - | - | - | - | - |
| Stage 2 | *422 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 90.9 | 0.3 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 712 | - | 79 | - | - |
| HCM Lane V/C Ratio | 0.077 | - | 0.511 | - | - |
| HCM Control Delay (s) | 10.5 | - | 90.9 | - | - |
| HCM Lane LOS | B | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 2.2 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 0 | 133 | 2 | 0 | 1 | 28 | 1244 | 0 | 13 | 1279 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 473 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.1 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 19 | 0 | 133 | 2 | 0 | 1 | 28 | 1244 | 0 | 13 | 1279 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 20 | 0 | 143 | 2 | 0 | 1 | 30 | 1338 | 0 | 14 | 1375 | 1 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2132 | 2801 | 688 | 2114 | 2801 | 669 | 1375 | 0 | 0 | 1338 | 0 | 0 |
| Stage 1 | 1403 | 1403 | - | 1398 | 1398 | - | - | - | - | - | - | - |
| Stage 2 | 729 | 1398 | - | 716 | 1403 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.5 | 6.5 | 7.2 | 7.8 | 5.9 | 6.9 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *77 | *12 | *661 | *100 | *18 | *661 | *799 | - | - | *799 | - | - |
| Stage 1 | *680 | *478 | - | *685 | *479 | - | - | - | - | - | - | - |
| Stage 2 | *685 | *479 | - | *685 | *478 | - | - | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *73 | *11 | *661 | *75 | *17 | *661 | *799 | - | - | *799 | - | - |
| Mov Cap-2 Maneuver | *73 | *11 | - | *75 | *17 | - | - | - | - | - | - | - |
| Stage 1 | *655 | *469 | - | *659 | *461 | - | - | - | - | - | - | - |
| Stage 2 | *658 | *461 | - | *527 | *470 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.5 | 40 | 0.2 | 0.1 |
| HCM LOS | B | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 799 | - | - | 584 | 106 | * 799 | - | - |
| HCM Lane V/C Ratio | 0.038 | - | - | 0.28 | 0.03 | 0.017 | - | - |
| HCM Control Delay (s) | 9.7 | - | - | 13.5 | 40 | 9.6 | - | - |
| HCM Lane LOS | A | - | - | B | E | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.1 | 0.1 | 0.1 | - | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 12 | 68 | 0 | 1384 | 1335 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 265 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Confl. Peds. (#/hr) | 1 | 1 | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

**Intersection Summary**

Area Type: Other





**Intersection**

Int Delay, s/veh 0.4

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 12 | 68 | 0 | 1384 | 1335 | 0 |
| Conflicting Peds, #/hr | 1 | 1 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 13 | 73 | 0 | 1488 | 1435 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2180 | 719 | 1436 | 0 | - | 0 |
| Stage 1 | 1436 | - | - | - | - | - |
| Stage 2 | 744 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *248 | *577 | *746 | - | - | - |
| Stage 1 | *596 | - | - | - | - | - |
| Stage 2 | *596 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *248 | *576 | *746 | - | - | - |
| Mov Cap-2 Maneuver | *385 | - | - | - | - | - |
| Stage 1 | *596 | - | - | - | - | - |
| Stage 2 | *596 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.6 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 746 | - | 385 | 576 | - | - |
| HCM Lane V/C Ratio | - | - | 0.034 | 0.127 | - | - |
| HCM Control Delay (s) | 0 | - | 14.7 | 12.2 | - | - |
| HCM Lane LOS | A | - | B | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | 0.4 | - | - |

**Notes**

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 25 | 1387 | 5 | 24 | 1458 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 25 | 1387 | 5 | 24 | 1458 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 26 | 1415 | 5 | 24 | 1488 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2211 | 712 | 0 | 0 | 1420 | 0 |
| Stage 1 | 1418 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *104 | *617 | - | - | *746 | - |
| Stage 1 | *639 | - | - | - | - | - |
| Stage 2 | *594 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *84 | *616 | - | - | *745 | - |
| Mov Cap-2 Maneuver | *84 | - | - | - | - | - |
| Stage 1 | *639 | - | - | - | - | - |
| Stage 2 | *483 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.1 | 0 | 1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 616 | * 745 | - |
| HCM Lane V/C Ratio | - | - | 0.041 | 0.033 | - |
| HCM Control Delay (s) | - | - | 11.1 | 10 | 0.9 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 76 | 104 | 72 | 578 | 432 | 252 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 10.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 76 | 104 | 72 | 578 | 432 | 252 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 0 | 0 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 87 | 120 | 83 | 664 | 497 | 290 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1471 | 641 | 786 | 0 | - | 0 |
| Stage 1 | 641 | - | - | - | - | - |
| Stage 2 | 830 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | 152 | 597 | 688 | - | - | - |
| Stage 1 | 641 | - | - | - | - | - |
| Stage 2 | 487 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | 123 | 597 | 688 | - | - | - |
| Mov Cap-2 Maneuver | 123 | - | - | - | - | - |
| Stage 1 | 641 | - | - | - | - | - |
| Stage 2 | 394 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 84 | 1.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 688 | - | 227 | - | - |
| HCM Lane V/C Ratio | 0.12 | - | 0.911 | - | - |
| HCM Control Delay (s) | 10.9 | 0 | 84 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 7.6 | - | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 243 | 308 | 321 | 91 | 48 | 142 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 417 | 303 | | 589 | |
| Travel Time (s) | | 8.1 | 5.9 | | 16.1 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 2% | 1% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 6.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 243 | 308 | 321 | 91 | 48 | 142 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 1 | 2 | 1 | 0 | 2 | 1 |
| Mvmt Flow | 256 | 324 | 338 | 96 | 51 | 149 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 434 | 0 | - | 0 | 1060 | 386 |
| Stage 1 | - | - | - | - | 386 | - |
| Stage 2 | - | - | - | - | 674 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1079 | - | - | - | 199 | 680 |
| Stage 1 | - | - | - | - | 714 | - |
| Stage 2 | - | - | - | - | 447 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1079 | - | - | - | 141 | 680 |
| Mov Cap-2 Maneuver | - | - | - | - | 141 | - |
| Stage 1 | - | - | - | - | 714 | - |
| Stage 2 | - | - | - | - | 318 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 4.4 | 0 | 28.7 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1079 | - | - | - | 346 |
| HCM Lane V/C Ratio | 0.237 | - | - | - | 0.578 |
| HCM Control Delay (s) | 9.4 | 0.5 | - | - | 28.7 |
| HCM Lane LOS | A | A | - | - | D |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 3.5 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 34 | 338 | 345 | 61 | 79 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 303 | 285 | | 309 | |
| Travel Time (s) | | 5.9 | 5.6 | | 8.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 1% | 1% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 34 | 338 | 345 | 61 | 79 | 39 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 1 | 1 | 0 | 1 | 0 |
| Mvmt Flow | 36 | 360 | 367 | 65 | 84 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 432 | 0 | - | 0 | 651 | 399 |
| Stage 1 | - | - | - | - | 399 | - |
| Stage 2 | - | - | - | - | 252 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1081 | - | - | - | 401 | 668 |
| Stage 1 | - | - | - | - | 702 | - |
| Stage 2 | - | - | - | - | 832 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1081 | - | - | - | 384 | 668 |
| Mov Cap-2 Maneuver | - | - | - | - | 384 | - |
| Stage 1 | - | - | - | - | 702 | - |
| Stage 2 | - | - | - | - | 797 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 16.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1081 | - | - | - | 447 |
| HCM Lane V/C Ratio | 0.033 | - | - | - | 0.281 |
| HCM Control Delay (s) | 8.4 | 0.1 | - | - | 16.2 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.1 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 36 | 215 | 405 | 16 | 142 | 481 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 36 | 215 | 405 | 16 | 142 | 481 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 38 | 229 | 431 | 17 | 151 | 512 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1245 | 431 | 0 | 0 | 431 | 0 |
| Stage 1 | 431 | - | - | - | - | - |
| Stage 2 | 814 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 240 | 676 | - | - | 854 | - |
| Stage 1 | 782 | - | - | - | - | - |
| Stage 2 | 530 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 181 | 676 | - | - | 854 | - |
| Mov Cap-2 Maneuver | 311 | - | - | - | - | - |
| Stage 1 | 782 | - | - | - | - | - |
| Stage 2 | 399 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 16.4 | 0 | 2.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 579 | 854 | - |
| HCM Lane V/C Ratio | - | - | 0.461 | 0.177 | - |
| HCM Control Delay (s) | - | - | 16.4 | 10.1 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.4 | 0.6 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 205 | 362 | 9 | 23 | 50 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 5 | 5 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 11% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 205 | 362 | 9 | 23 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 5 | 5 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 0 | 1 | 1 | 11 | 0 | 0 |
| Mvmt Flow | 6 | 263 | 464 | 12 | 29 | 64 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 481 | 0 | - | 0 | 751 | 243 |
| Stage 1 | - | - | - | - | 475 | - |
| Stage 2 | - | - | - | - | 276 | - |
| Critical Hdwy | 4.3 | - | - | - | 6.2 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5 | - |
| Follow-up Hdwy | 3 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 820 | - | - | - | 443 | 819 |
| Stage 1 | - | - | - | - | 713 | - |
| Stage 2 | - | - | - | - | 916 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 820 | - | - | - | 435 | 814 |
| Mov Cap-2 Maneuver | - | - | - | - | 435 | - |
| Stage 1 | - | - | - | - | 709 | - |
| Stage 2 | - | - | - | - | 904 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 11.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 820 | - | - | - | 639 |
| HCM Lane V/C Ratio | 0.008 | - | - | - | 0.146 |
| HCM Control Delay (s) | 9.4 | - | - | - | 11.6 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 123 | 52 | 161 | 9 | 41 | 21 | 108 | 290 | 4 | 23 | 175 | 118 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 207 | | | 199 | | | 398 | | | 586 | |
| Travel Time (s) | | 5.6 | | | 5.4 | | | 10.9 | | | 16.0 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16.8 |
| Intersection LOS | C |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 123 | 52 | 161 | 0 | 9 | 41 | 21 | 0 | 108 | 290 | 4 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 0 | 1 | 2 | 11 | 0 | 5 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 0 | 132 | 56 | 173 | 0 | 10 | 44 | 23 | 0 | 116 | 312 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 13 | 11.5 | 21.8 |
| HCM LOS | B | B | C |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 27% | 70% | 0% | 13% | 7% |
| Vol Thru, % | 72% | 30% | 0% | 58% | 55% |
| Vol Right, % | 1% | 0% | 100% | 30% | 37% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 402 | 175 | 161 | 71 | 316 |
| LT Vol | 108 | 123 | 0 | 9 | 23 |
| Through Vol | 290 | 52 | 0 | 41 | 175 |
| RT Vol | 4 | 0 | 161 | 21 | 118 |
| Lane Flow Rate | 432 | 188 | 173 | 76 | 340 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.702 | 0.381 | 0.294 | 0.153 | 0.545 |
| Departure Headway (Hd) | 5.955 | 7.28 | 6.208 | 7.21 | 5.888 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 609 | 497 | 582 | 500 | 615 |
| Service Time | 3.955 | 4.984 | 3.908 | 5.217 | 3.888 |
| HCM Lane V/C Ratio | 0.709 | 0.378 | 0.297 | 0.152 | 0.553 |
| HCM Control Delay | 21.8 | 14.4 | 11.5 | 11.5 | 15.7 |
| HCM Lane LOS | C | B | B | B | C |
| HCM 95th-tile Q | 5.6 | 1.8 | 1.2 | 0.5 | 3.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 23 | 175 | 118 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 25 | 188 | 127 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 15.7 |
| HCM LOS | C |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 195 | 43 | 121 | 294 | 69 | 123 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1388 | | | 644 | 482 | |
| Travel Time (s) | 31.5 | | | 14.6 | 11.0 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 195 | 43 | 121 | 294 | 69 | 123 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 207 | 46 | 129 | 313 | 73 | 131 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 207 | 0 | 777 | 207 |
| Stage 1 | - | - | - | - | 207 | - |
| Stage 2 | - | - | - | - | 570 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 1020 | - | 244 | 828 |
| Stage 1 | - | - | - | - | 834 | - |
| Stage 2 | - | - | - | - | 438 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1020 | - | 207 | 828 |
| Mov Cap-2 Maneuver | - | - | - | - | 207 | - |
| Stage 1 | - | - | - | - | 834 | - |
| Stage 2 | - | - | - | - | 371 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.6 | 17.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 207 | 828 | - | - | 1020 | - |
| HCM Lane V/C Ratio | 0.355 | 0.158 | - | - | 0.126 | - |
| HCM Control Delay (s) | 31.7 | 10.2 | - | - | 9 | 0 |
| HCM Lane LOS | D | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.5 | 0.6 | - | - | 0.4 | - |

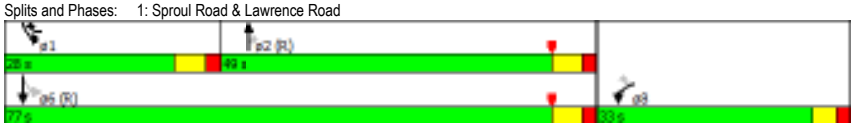
# *2020 BASE CONDITIONS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 281 | 649 | 1217 | 365 | 407 | 760 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 33.0 | 28.0 | 49.0 | 49.0 | 28.0 | 77.0 |
| Total Split (%) | 30.0% | 25.5% | 44.5% | 44.5% | 25.5% | 70.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 281 | 649 | 1217 | 365 | 407 | 760 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1713 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 287 | 594 | 1242 | 280 | 415 | 776 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 418 | 688 | 1296 | 609 | 446 | 2262 |
| Arrive On Green | 0.26 | 0.26 | 0.53 | 0.53 | 0.21 | 0.65 |
| Sat Flow, veh/h | 1585 | 1456 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 287 | 594 | 1242 | 280 | 415 | 776 |
| Grp Sat Flow(s),veh/h/ln | 1585 | 1456 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 17.9 | 29.0 | 40.2 | 12.5 | 20.2 | 11.0 |
| Cycle Q Clear(g_c), s | 17.9 | 29.0 | 40.2 | 12.5 | 20.2 | 11.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 418 | 688 | 1296 | 609 | 446 | 2262 |
| V/C Ratio(X) | 0.69 | 0.86 | 0.96 | 0.46 | 0.93 | 0.34 |
| Avail Cap(c_a), veh/h | 418 | 688 | 1296 | 609 | 450 | 2262 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.45 | 0.45 | 0.68 | 0.68 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.8 | 25.8 | 25.2 | 18.4 | 33.9 | 8.5 |
| Incr Delay (d2), s/veh | 2.1 | 5.4 | 12.8 | 1.7 | 26.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 1.2 | 0.0 | 2.6 | 0.0 | 2.1 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.9 | 21.6 | 27.3 | 8.7 | 22.6 | 9.1 |
| LnGrp Delay(d),s/veh | 40.1 | 31.2 | 40.6 | 20.1 | 61.9 | 8.9 |
| LnGrp LOS | D | C | D | C | E | A |
| Approach Vol, veh/h | 881 | | 1522 | | | 1191 |
| Approach Delay, s/veh | 34.1 | | 36.8 | | | 27.4 |
| Approach LOS | C | | D | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.0 | 49.0 | | | | 77.0 | | 33.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 22.0 | 43.0 | | | | 71.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | 22.7 | 42.7 | | | | 13.5 | | 31.5 |
| Green Ext Time (p_c), s | 0.0 | 0.2 | | | | 16.6 | | 0.0 |

**Intersection Summary**

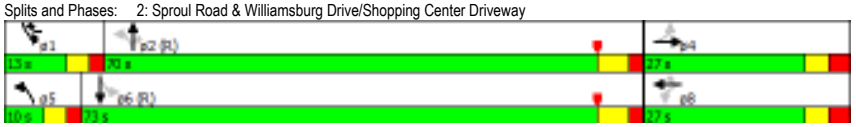
| | |
|---|---|
| HCM 2010 Ctrl Delay | 33.0 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 40 | 15 | 26 | 72 | 6 | 79 | 21 | 1518 | 81 | 84 | 1102 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | 13.0 | 10.0 | 70.0 | 70.0 | 13.0 | 73.0 | |
| Total Split (%) | 24.5% | 24.5% | | 24.5% | 24.5% | 11.8% | 9.1% | 63.6% | 63.6% | 11.8% | 66.4% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 101 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 40 | 15 | 26 | 72 | 6 | 79 | 21 | 1518 | 81 | 84 | 1102 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1712 | 1800 | 1764 | 1739 | 1696 | 1764 | 1696 | 1781 | 1748 | 1712 | 1800 |
| Adj Flow Rate, veh/h | 42 | 16 | 26 | 75 | 6 | 75 | 22 | 1581 | 0 | 88 | 1148 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 3 | 3 | 5 | 5 |
| Cap, veh/h | 93 | 38 | 37 | 202 | 14 | 275 | 404 | 2198 | 1033 | 341 | 2311 | 34 |
| Arrive On Green | 0.14 | 0.15 | 0.14 | 0.14 | 0.15 | 0.15 | 0.04 | 1.00 | 0.00 | 0.06 | 0.94 | 0.92 |
| Sat Flow, veh/h | 303 | 263 | 254 | 952 | 95 | 1442 | 1680 | 3223 | 1514 | 1664 | 3282 | 49 |
| Grp Volume(v), veh/h | 84 | 0 | 0 | 81 | 0 | 75 | 22 | 1581 | 0 | 88 | 569 | 596 |
| Grp Sat Flow(s),veh/h/ln | 820 | 0 | 0 | 1047 | 0 | 1442 | 1680 | 1611 | 1514 | 1664 | 1627 | 1704 |
| Q Serve(g_s), s | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.4 | 0.0 | 0.0 | 1.6 | 4.6 | 4.6 |
| Cycle Q Clear(g_c), s | 12.6 | 0.0 | 0.0 | 8.3 | 0.0 | 4.9 | 0.4 | 0.0 | 0.0 | 1.6 | 4.6 | 4.6 |
| Prop In Lane | 0.50 | | 0.31 | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 161 | 0 | 0 | 206 | 0 | 275 | 404 | 2198 | 1033 | 341 | 1146 | 1200 |
| V/C Ratio(X) | 0.52 | 0.00 | 0.00 | 0.39 | 0.00 | 0.27 | 0.05 | 0.72 | 0.00 | 0.26 | 0.50 | 0.50 |
| Avail Cap(c_a), veh/h | 234 | 0 | 0 | 276 | 0 | 353 | 458 | 2198 | 1033 | 408 | 1146 | 1200 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.39 | 0.39 | 0.00 | 0.89 | 0.89 | 0.89 |
| Uniform Delay (d), s/veh | 46.6 | 0.0 | 0.0 | 44.0 | 0.0 | 38.0 | 4.8 | 0.0 | 0.0 | 4.7 | 1.2 | 1.2 |
| Incr Delay (d2), s/veh | 2.6 | 0.0 | 0.0 | 1.2 | 0.0 | 0.5 | 0.0 | 0.8 | 0.0 | 0.4 | 1.4 | 1.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.7 | 0.0 | 0.0 | 4.3 | 0.0 | 3.6 | 0.4 | 0.5 | 0.0 | 1.4 | 4.1 | 4.2 |
| LnGrp Delay(d),s/veh | 49.2 | 0.0 | 0.0 | 45.3 | 0.0 | 38.5 | 4.8 | 0.9 | 0.0 | 5.0 | 2.5 | 2.5 |
| LnGrp LOS | D | | | D | | D | A | A | | A | A | A |
| Approach Vol, veh/h | | 84 | | | 156 | | | 1603 | | | 1253 | |
| Approach Delay, s/veh | | 49.2 | | | 42.0 | | | 0.9 | | | 2.7 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.9 | 80.0 | | 21.1 | 6.5 | 82.5 | | 21.1 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 64.0 | | 21.0 | 5.0 | 67.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 4.1 | 2.5 | | 14.6 | 2.9 | 7.1 | | 10.3 |
| Green Ext Time (p_c), s | 0.1 | 23.1 | | 0.5 | 0.0 | 23.0 | | 0.6 |

**Intersection Summary**

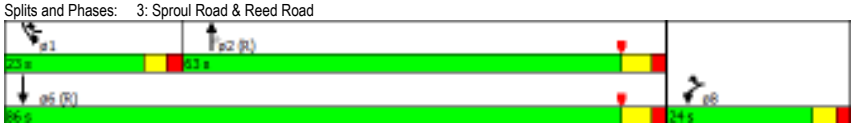
HCM 2010 Ctrl Delay 5.0
HCM 2010 LOS A

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 176 | 168 | 1549 | 272 | 160 | 1057 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 404 | | 187 | | | 884 |
| Travel Time (s) | 7.9 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 8% | 10% | 3% | 3% | 6% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 24.0 | | 63.0 | 63.0 | 23.0 | 86.0 |
| Total Split (%) | 21.8% | | 57.3% | 57.3% | 20.9% | 78.2% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 176 | 168 | 1549 | 272 | 160 | 1057 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 1 | 3 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1700 | 1669 | 1713 | 1713 | 1732 | 1765 |
| Adj Flow Rate, veh/h | 193 | 185 | 1702 | 255 | 176 | 1162 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 8 | 10 | 3 | 3 | 6 | 4 |
| Cap, veh/h | 247 | 404 | 1936 | 868 | 219 | 2566 |
| Arrive On Green | 0.15 | 0.15 | 0.60 | 0.60 | 0.27 | 1.00 |
| Sat Flow, veh/h | 1619 | 1419 | 3340 | 1456 | 1650 | 3443 |
| Grp Volume(v), veh/h | 193 | 185 | 1702 | 255 | 176 | 1162 |
| Grp Sat Flow(s),veh/h/ln | 1619 | 1419 | 1627 | 1456 | 1650 | 1677 |
| Q Serve(g_s), s | 12.6 | 11.8 | 48.6 | 9.4 | 11.0 | 0.0 |
| Cycle Q Clear(g_c), s | 12.6 | 11.8 | 48.6 | 9.4 | 11.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 247 | 404 | 1936 | 868 | 219 | 2566 |
| V/C Ratio(X) | 0.78 | 0.46 | 0.88 | 0.29 | 0.80 | 0.45 |
| Avail Cap(c_a), veh/h | 294 | 446 | 1944 | 870 | 285 | 2571 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 |
| Uniform Delay (d), s/veh | 44.9 | 32.5 | 19.1 | 10.9 | 39.1 | 0.0 |
| Incr Delay (d2), s/veh | 10.7 | 0.8 | 6.1 | 0.9 | 10.6 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.5 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.7 | 8.5 | 31.7 | 7.2 | 9.3 | 0.3 |
| LnGrp Delay(d),s/veh | 56.2 | 33.4 | 25.3 | 11.7 | 49.7 | 0.5 |
| LnGrp LOS | E | C | C | B | D | A |
| Approach Vol, veh/h | 378 | | 1957 | | | 1338 |
| Approach Delay, s/veh | 45.0 | | 23.6 | | | 7.0 |
| Approach LOS | D | | C | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 18.6 | 70.7 | | | | 89.3 | | 20.7 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 18.0 | 57.0 | | | | 80.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | 13.5 | 51.1 | | | | 2.5 | | 15.1 |
| Green Ext Time (p_c), s | 0.2 | 5.3 | | | | 34.4 | | 0.6 |

**Intersection Summary**

HCM 2010 Ctrl Delay 19.7
HCM 2010 LOS B

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 797 | 1233 | 0 | 312 | 794 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 839 | 1298 | 0 | 328 | 836 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 52.0 | 68.0 | | 52.0 | 120.0 |
| Total Split (%) | | 43.3% | 56.7% | | 43.3% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 42.9 | 62.1 | | 42.9 | 120.0 |
| Actuated g/C Ratio | | 0.36 | 0.52 | | 0.36 | 1.00 |
| v/c Ratio | | 0.91 | 0.73 | | 0.57 | 0.50 |
| Control Delay | | 44.7 | 27.8 | | 35.3 | 1.1 |
| Queue Delay | | 10.9 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 55.6 | 27.8 | | 35.3 | 1.1 |
| LOS | | E | C | | D | A |
| Approach Delay | | | 27.8 | | | 10.7 |
| Approach LOS | | | C | | | B |
| Queue Length 50th (ft) | | 385 | 337 | | 200 | 0 |
| Queue Length 95th (ft) | | m343 | m296 | | 296 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 944 | 1773 | | 594 | 1672 |
| Starvation Cap Reductn | | 98 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



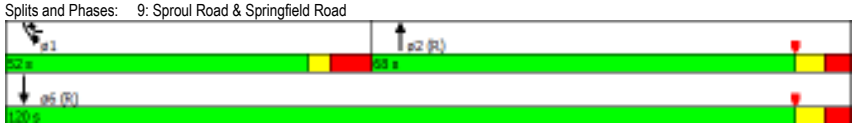


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.99 | 0.73 | | 0.55 | 0.50 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 28.8 — Intersection LOS: C
Intersection Capacity Utilization 77.9% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

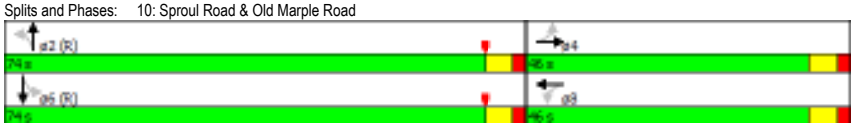
Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 106 | 74 | 38 | 217 | 238 | 1 | 169 | 1060 | 40 | 1 | 731 | 131 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 46.0 | 46.0 | | 46.0 | 46.0 | | 74.0 | 74.0 | | 74.0 | 74.0 | |
| Total Split (%) | 38.3% | 38.3% | | 38.3% | 38.3% | | 61.7% | 61.7% | | 61.7% | 61.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 106 | 74 | 38 | 217 | 238 | 1 | 169 | 1060 | 40 | 1 | 731 | 131 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1801 | 1818 | 1782 | 1714 | 1782 | 1773 | 1718 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 113 | 79 | 35 | 231 | 253 | 1 | 180 | 1128 | 34 | 1 | 778 | 110 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 |
| Cap, veh/h | 233 | 157 | 63 | 256 | 232 | 1 | 175 | 1253 | 38 | 30 | 1619 | 233 |
| Arrive On Green | 0.33 | 0.34 | 0.33 | 0.33 | 0.34 | 0.33 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h | 550 | 460 | 184 | 621 | 680 | 3 | 244 | 2014 | 67 | 0 | 2880 | 407 |
| Grp Volume(v), veh/h | 227 | 0 | 0 | 485 | 0 | 0 | 555 | 0 | 787 | 475 | 0 | 414 |
| Grp Sat Flow(s),veh/h/ln | 1194 | 0 | 0 | 1303 | 0 | 0 | 773 | 0 | 1552 | 1758 | 0 | 1529 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 21.9 | 0.0 | 0.0 | 49.0 | 0.0 | 52.6 | 0.0 | 0.0 | 19.0 |
| Cycle Q Clear(g_c), s | 18.1 | 0.0 | 0.0 | 40.0 | 0.0 | 0.0 | 68.0 | 0.0 | 52.6 | 19.0 | 0.0 | 19.0 |
| Prop In Lane | 0.50 | | 0.15 | 0.48 | | 0.00 | 0.32 | | 0.04 | 0.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 443 | 0 | 0 | 479 | 0 | 0 | 486 | 0 | 892 | 989 | 0 | 879 |
| V/C Ratio(X) | 0.51 | 0.00 | 0.00 | 1.01 | 0.00 | 0.00 | 1.14 | 0.00 | 0.88 | 0.48 | 0.00 | 0.47 |
| Avail Cap(c_a), veh/h | 443 | 0 | 0 | 479 | 0 | 0 | 478 | 0 | 892 | 1026 | 0 | 879 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.9 | 0.0 | 0.0 | 42.0 | 0.0 | 0.0 | 35.9 | 0.0 | 22.2 | 14.9 | 0.0 | 15.0 |
| Incr Delay (d2), s/veh | 1.0 | 0.0 | 0.0 | 44.4 | 0.0 | 0.0 | 85.4 | 0.0 | 12.3 | 1.7 | 0.0 | 1.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.5 | 0.0 | 0.0 | 39.4 | 0.0 | 0.0 | 50.9 | 0.0 | 33.9 | 14.8 | 0.0 | 13.2 |
| LnGrp Delay(d),s/veh | 32.9 | 0.0 | 0.0 | 86.5 | 0.0 | 0.0 | 127.8 | 0.0 | 34.5 | 16.6 | 0.0 | 16.8 |
| LnGrp LOS | C | | | F | | | F | | C | B | | B |
| Approach Vol, veh/h | | 227 | | | 485 | | | 1342 | | | 889 | |
| Approach Delay, s/veh | | 32.9 | | | 86.5 | | | 73.1 | | | 16.7 | |
| Approach LOS | | C | | | F | | | E | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 74.0 | | 46.0 | | 74.0 | | 46.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 68.0 | | 40.0 | | 68.0 | | 40.0 |
| Max Q Clear Time (g_c+I1), s | | 70.0 | | 20.1 | | 21.0 | | 42.0 |
| Green Ext Time (p_c), s | | 0.0 | | 2.9 | | 15.6 | | 0.0 |

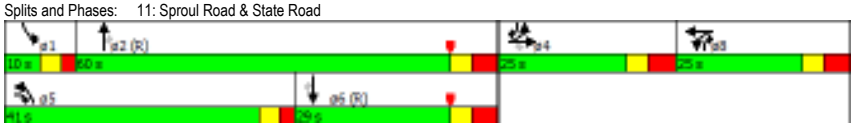
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 55.1 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 264 | 15 | 312 | 165 | 72 | 37 | 477 | 1109 | 324 | 5 | 549 | 388 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 47% | | | 17% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 25.0 | 25.0 | 41.0 | 25.0 | 25.0 | | 41.0 | 60.0 | 25.0 | 10.0 | 29.0 | 25.0 |
| Total Split (%) | 20.8% | 20.8% | 34.2% | 20.8% | 20.8% | | 34.2% | 50.0% | 20.8% | 8.3% | 24.2% | 20.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 264 | 15 | 312 | 165 | 72 | 37 | 477 | 1109 | 324 | 5 | 549 | 388 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1793 | 1844 | 1872 | 1815 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 286 | 0 | 0 | 124 | 143 | 0 | 497 | 1155 | 0 | 5 | 572 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 395 | 0 | 660 | 194 | 198 | 0 | 523 | 1974 | 1038 | 21 | 952 | 599 |
| Arrive On Green | 0.11 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.31 | 0.58 | 0.00 | 0.01 | 0.29 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1815 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 286 | 0 | 0 | 124 | 143 | 0 | 497 | 1155 | 0 | 5 | 572 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1815 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 9.4 | 0.0 | 0.0 | 8.0 | 9.1 | 0.0 | 34.4 | 25.9 | 0.0 | 0.3 | 17.8 | 0.0 |
| Cycle Q Clear(g_c), s | 9.4 | 0.0 | 0.0 | 8.0 | 9.1 | 0.0 | 34.4 | 25.9 | 0.0 | 0.3 | 17.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 395 | 0 | 660 | 194 | 198 | 0 | 523 | 1974 | 1038 | 21 | 952 | 599 |
| V/C Ratio(X) | 0.72 | 0.00 | 0.00 | 0.64 | 0.72 | 0.00 | 0.95 | 0.59 | 0.00 | 0.24 | 0.60 | 0.00 |
| Avail Cap(c_a), veh/h | 556 | 0 | 732 | 282 | 287 | 0 | 523 | 1974 | 1038 | 86 | 952 | 599 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 51.4 | 0.0 | 0.0 | 51.2 | 51.7 | 0.0 | 41.4 | 15.8 | 0.0 | 58.7 | 36.9 | 0.0 |
| Incr Delay (d2), s/veh | 2.8 | 0.0 | 0.0 | 3.4 | 4.9 | 0.0 | 27.2 | 1.3 | 0.0 | 5.8 | 2.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.3 | 0.0 | 0.0 | 7.4 | 8.5 | 0.0 | 31.4 | 18.2 | 0.0 | 0.4 | 13.3 | 0.0 |
| LnGrp Delay(d),s/veh | 54.2 | 0.0 | 0.0 | 54.6 | 56.6 | 0.0 | 87.4 | 17.1 | 0.0 | 64.5 | 39.7 | 0.0 |
| LnGrp LOS | D | | | D | E | | F | B | | E | D | |
| Approach Vol, veh/h | | 286 | | | 267 | | | 1652 | | | 577 | |
| Approach Delay, s/veh | | 54.2 | | | 55.7 | | | 38.3 | | | 39.9 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 5.5 | 76.0 | | 19.5 | 41.0 | 40.4 | | 19.1 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | | 18.0 | 36.0 | 22.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 28.4 | | 11.9 | 36.9 | 20.3 | | 11.6 |
| Green Ext Time (p_c), s | 0.0 | 8.8 | | 0.6 | 0.0 | 1.2 | | 0.4 |

**Intersection Summary**

HCM 2010 Ctrl Delay 41.9
HCM 2010 LOS D

**Notes**

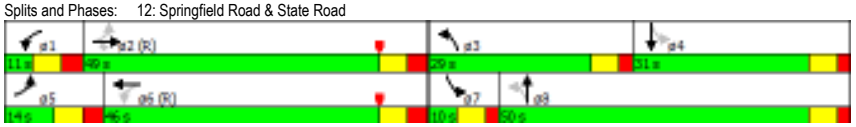
User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 212 | 1008 | 303 | 12 | 1189 | 128 | 479 | 503 | 29 | 101 | 280 | 77 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 10% | 4% | 8% | 25% | 3% | 6% | 3% | 3% | 0% | 2% | 7% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 14.0 | 49.0 | 49.0 | 11.0 | 46.0 | | 29.0 | 50.0 | | 10.0 | 31.0 | |
| Total Split (%) | 11.7% | 40.8% | 40.8% | 9.2% | 38.3% | | 24.2% | 41.7% | | 8.3% | 25.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 212 | 1008 | 303 | 12 | 1189 | 128 | 479 | 503 | 29 | 101 | 280 | 77 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 2 | 0 | 0 | 7 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1685 | 1783 | 1717 | 1397 | 1690 | 1746 | 1756 | 1759 | 1809 | 1791 | 1704 | 1827 |
| Adj Flow Rate, veh/h | 219 | 1039 | 0 | 12 | 1226 | 0 | 494 | 519 | 0 | 104 | 289 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 10 | 4 | 8 | 25 | 3 | 3 | 3 | 3 | 3 | 2 | 7 | 7 |
| Cap, veh/h | 167 | 1365 | 573 | 109 | 1071 | 0 | 395 | 627 | 0 | 164 | 335 | 0 |
| Arrive On Green | 0.07 | 0.40 | 0.00 | 0.02 | 0.35 | 0.00 | 0.20 | 0.35 | 0.00 | 0.08 | 0.39 | 0.00 |
| Sat Flow, veh/h | 1605 | 3387 | 1459 | 1330 | 3296 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Grp Volume(v), veh/h | 219 | 1039 | 0 | 12 | 1226 | 0 | 494 | 519 | 0 | 104 | 289 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1605 | 1694 | 1459 | 1330 | 1606 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Q Serve(g_s), s | 8.0 | 31.7 | 0.0 | 0.7 | 42.5 | 0.0 | 24.0 | 32.4 | 0.0 | 5.0 | 18.7 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 31.7 | 0.0 | 0.7 | 42.5 | 0.0 | 24.0 | 32.4 | 0.0 | 5.0 | 18.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 167 | 1365 | 573 | 109 | 1071 | 0 | 395 | 627 | 0 | 164 | 335 | 0 |
| V/C Ratio(X) | 1.31 | 0.76 | 0.00 | 0.11 | 1.15 | 0.00 | 1.25 | 0.83 | 0.00 | 0.63 | 0.86 | 0.00 |
| Avail Cap(c_a), veh/h | 167 | 1368 | 589 | 172 | 1137 | 0 | 435 | 660 | 0 | 202 | 369 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 30.2 | 31.0 | 0.0 | 29.7 | 40.0 | 0.0 | 35.9 | 35.7 | 0.0 | 38.8 | 35.0 | 0.0 |
| Incr Delay (d2), s/veh | 176.2 | 4.0 | 0.0 | 0.4 | 76.6 | 0.0 | 132.8 | 8.3 | 0.0 | 4.4 | 17.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 62.6 | 0.1 | 0.0 | 0.0 | 20.3 | 0.0 | 28.6 | 1.7 | 0.0 | 0.0 | 0.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 25.1 | 22.2 | 0.0 | 0.5 | 55.9 | 0.0 | 53.7 | 25.1 | 0.0 | 2.2 | 15.8 | 0.0 |
| LnGrp Delay(d),s/veh | 269.0 | 35.1 | 0.0 | 30.1 | 136.9 | 0.0 | 197.3 | 45.7 | 0.0 | 43.2 | 52.7 | 0.0 |
| LnGrp LOS | F | D | | C | F | | F | D | | D | D | |
| Approach Vol, veh/h | | 1258 | | | 1238 | | | 1013 | | | 393 | |
| Approach Delay, s/veh | | 75.8 | | | 135.9 | | | 119.6 | | | 50.2 | |
| Approach LOS | | E | | | F | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.1 | 54.4 | 29.0 | 28.5 | 14.0 | 48.5 | 10.0 | 47.5 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 42.0 | 23.0 | 25.0 | 7.0 | 39.0 | 4.0 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 34.2 | 26.5 | 21.2 | 10.5 | 45.0 | 7.5 | 34.9 |
| Green Ext Time (p_c), s | 0.0 | 5.7 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 2.3 |

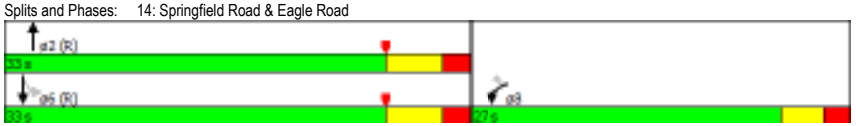
**Intersection Summary**

HCM 2010 Ctrl Delay 103.7
HCM 2010 LOS F

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 576 | 244 | 564 | 275 | 22 | 305 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 27.0 | 27.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (%) | 45.0% | 45.0% | 55.0% | | 55.0% | 55.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 59 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 576 | 244 | 564 | 275 | 22 | 305 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1757 | 1791 | 1739 | 1791 | 1809 | 1738 |
| Adj Flow Rate, veh/h | 626 | 192 | 613 | 256 | 24 | 332 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 2 | 4 | 4 |
| Cap, veh/h | 641 | 584 | 695 | 99 | 64 | 440 |
| Arrive On Green | 0.38 | 0.38 | 0.62 | 0.60 | 0.45 | 0.47 |
| Sat Flow, veh/h | 1673 | 1523 | 1166 | 487 | 0 | 943 |
| Grp Volume(v), veh/h | 626 | 192 | 0 | 869 | 356 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1673 | 1523 | 0 | 1653 | 943 | 0 |
| Q Serve(g_s), s | 22.1 | 5.3 | 0.0 | 28.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 22.1 | 5.3 | 0.0 | 28.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.29 | 0.07 | |
| Lane Grp Cap(c), veh/h | 641 | 584 | 0 | 794 | 489 | 0 |
| V/C Ratio(X) | 0.98 | 0.33 | 0.00 | 1.09 | 0.73 | 0.00 |
| Avail Cap(c_a), veh/h | 641 | 584 | 0 | 771 | 489 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.80 | 0.00 |
| Uniform Delay (d), s/veh | 18.5 | 13.1 | 0.0 | 11.5 | 13.4 | 0.0 |
| Incr Delay (d2), s/veh | 29.4 | 0.3 | 0.0 | 60.8 | 7.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 11.6 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 24.3 | 4.1 | 0.0 | 47.9 | 8.7 | 0.0 |
| LnGrp Delay(d),s/veh | 59.5 | 13.4 | 0.0 | 76.4 | 20.9 | 0.0 |
| LnGrp LOS | E | B | | F | C | |
| Approach Vol, veh/h | 818 | | 869 | | 356 | |
| Approach Delay, s/veh | 48.7 | | 76.4 | | 20.9 | |
| Approach LOS | D | | E | | C | |

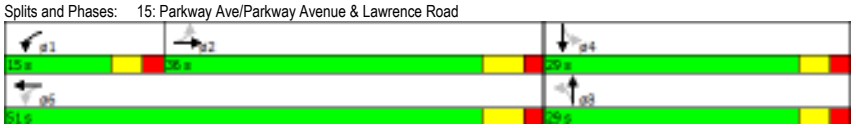
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 33.0 | | | | 33.0 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | | | 27.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 30.0 | | | | 29.0 | | 24.6 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 55.6 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 788 | 106 | 139 | 537 | 5 | 398 | 15 | 369 | 8 | 10 | 7 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 582 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 15.9 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 36.0 | 36.0 | | 15.0 | 51.0 | | 29.0 | 29.0 | | 29.0 | 29.0 | |
| Total Split (%) | 45.0% | 45.0% | | 18.8% | 63.8% | | 36.3% | 36.3% | | 36.3% | 36.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 70.6 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 788 | 106 | 139 | 537 | 5 | 398 | 15 | 369 | 8 | 10 | 7 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1716 | 1791 | 1791 | 1630 | 1791 | 1721 | 1735 | 1773 | 1827 | 1747 | 1827 |
| Adj Flow Rate, veh/h | 1 | 812 | 109 | 143 | 554 | 2 | 410 | 15 | 320 | 8 | 10 | 0 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 55 | 1372 | 184 | 86 | 756 | 3 | 466 | 174 | 532 | 156 | 165 | 0 |
| Arrive On Green | 0.47 | 0.48 | 0.47 | 0.47 | 0.48 | 0.47 | 0.38 | 0.38 | 0.36 | 0.36 | 0.38 | 0.00 |
| Sat Flow, veh/h | 0 | 2831 | 380 | 3 | 1561 | 7 | 1293 | 66 | 1418 | 286 | 539 | 0 |
| Grp Volume(v), veh/h | 493 | 0 | 429 | 259 | 0 | 440 | 410 | 0 | 335 | 18 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1716 | 0 | 1495 | 88 | 0 | 1482 | 1293 | 0 | 1485 | 824 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 13.8 | 23.1 | 0.0 | 14.3 | 12.6 | 0.0 | 12.1 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 13.9 | 0.0 | 13.8 | 23.1 | 0.0 | 14.3 | 24.3 | 0.0 | 12.1 | 12.2 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.25 | 0.55 | | 0.00 | 1.00 | | 0.96 | 0.44 | | 0.00 |
| Lane Grp Cap(c), veh/h | 860 | 0 | 724 | 0 | 0 | 718 | 466 | 0 | 564 | 312 | 0 | 0 |
| V/C Ratio(X) | 0.57 | 0.00 | 0.59 | 0.00 | 0.00 | 0.61 | 0.88 | 0.00 | 0.59 | 0.06 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 860 | 0 | 724 | 0 | 0 | 1034 | 529 | 0 | 563 | 379 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 12.3 | 0.0 | 12.4 | 0.0 | 0.0 | 12.5 | 22.9 | 0.0 | 16.9 | 14.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.9 | 0.0 | 1.3 | 0.0 | 0.0 | 0.9 | 14.4 | 0.0 | 1.7 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.3 | 0.0 | 9.9 | 0.0 | 0.0 | 9.9 | 14.3 | 0.0 | 9.0 | 0.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 13.3 | 0.0 | 13.7 | 0.0 | 0.0 | 13.3 | 37.6 | 0.0 | 18.7 | 14.6 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | B | D | | B | B | | |
| Approach Vol, veh/h | | 922 | | | 699 | | | 745 | | | 18 | |
| Approach Delay, s/veh | | 13.5 | | | 8.4 | | | 29.1 | | | 14.6 | |
| Approach LOS | | B | | | A | | | C | | | B | |

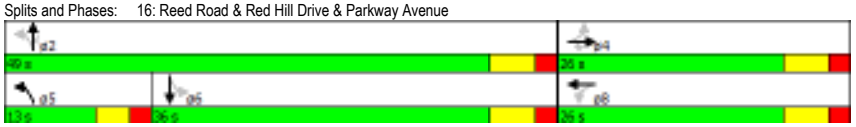
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 37.0 | | 29.0 | | 37.0 | | 29.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | 24.0 | | 45.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 15.9 | | 14.2 | | 25.1 | | 26.8 |
| Green Ext Time (p_c), s | | 6.2 | | 2.6 | | 5.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 16.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 59 | 55 | 258 | 31 | 87 | 4 | 252 | 705 | 122 | 4 | 190 | 32 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 13.0 | 49.0 | 49.0 | 36.0 | 36.0 | |
| Total Split (%) | 34.7% | 34.7% | 34.7% | 34.7% | 34.7% | | 17.3% | 65.3% | 65.3% | 48.0% | 48.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 59 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 59 | 55 | 258 | 31 | 87 | 4 | 252 | 705 | 122 | 4 | 190 | 32 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1618 | 1680 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1812 | 1836 |
| Adj Flow Rate, veh/h | 61 | 57 | 225 | 32 | 90 | 4 | 260 | 727 | 114 | 4 | 196 | 30 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 260 | 203 | 355 | 153 | 338 | 13 | 712 | 919 | 804 | 81 | 418 | 63 |
| Arrive On Green | 0.23 | 0.25 | 0.25 | 0.23 | 0.25 | 0.23 | 0.18 | 0.54 | 0.54 | 0.25 | 0.28 | 0.25 |
| Sat Flow, veh/h | 572 | 818 | 1428 | 227 | 1373 | 52 | 1500 | 1713 | 1499 | 9 | 1517 | 229 |
| Grp Volume(v), veh/h | 118 | 0 | 225 | 126 | 0 | 0 | 260 | 727 | 114 | 230 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1389 | 0 | 1428 | 1652 | 0 | 0 | 1500 | 1713 | 1499 | 1754 | 0 | 0 |
| Q Serve(g_s), s | 0.2 | 0.0 | 6.5 | 0.0 | 0.0 | 0.0 | 4.8 | 15.8 | 1.8 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 2.9 | 0.0 | 6.5 | 2.6 | 0.0 | 0.0 | 4.8 | 15.8 | 1.8 | 5.1 | 0.0 | 0.0 |
| Prop In Lane | 0.52 | | 1.00 | 0.25 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.13 |
| Lane Grp Cap(c), veh/h | 432 | 0 | 355 | 469 | 0 | 0 | 712 | 919 | 804 | 524 | 0 | 0 |
| V/C Ratio(X) | 0.27 | 0.00 | 0.63 | 0.27 | 0.00 | 0.00 | 0.37 | 0.79 | 0.14 | 0.44 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 703 | 0 | 648 | 788 | 0 | 0 | 742 | 1629 | 1426 | 1202 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 14.4 | 0.0 | 15.6 | 14.2 | 0.0 | 0.0 | 7.0 | 8.7 | 5.4 | 14.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 1.9 | 0.3 | 0.0 | 0.0 | 0.3 | 1.6 | 0.1 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.3 | 0.0 | 5.1 | 2.5 | 0.0 | 0.0 | 3.6 | 12.3 | 1.4 | 4.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 14.7 | 0.0 | 17.7 | 14.5 | 0.0 | 0.0 | 7.3 | 10.3 | 5.5 | 14.7 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | B | A | B | | |
| Approach Vol, veh/h | | 343 | | | 126 | | | 1101 | | | 230 | |
| Approach Delay, s/veh | | 16.7 | | | 14.5 | | | 9.1 | | | 14.7 | |
| Approach LOS | | B | | | B | | | A | | | B | |

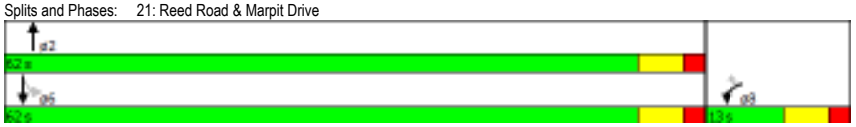
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 29.8 | | 16.4 | 12.1 | 17.7 | | 16.4 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 43.0 | | 20.0 | 8.0 | 30.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | | 18.3 | | 9.0 | 7.3 | 7.1 | | 4.6 |
| Green Ext Time (p_c), s | | 4.7 | | 1.4 | 0.1 | 4.6 | | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.6 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 78 | 29 | 1045 | 219 | 43 | 221 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 50% | 14% | 1% | 6% | 19% | 7% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 13.0 | 13.0 | 62.0 | | 62.0 | 62.0 |
| Total Split (%) | 17.3% | 17.3% | 82.7% | | 82.7% | 82.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 78.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 78 | 29 | 1045 | 219 | 43 | 221 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1200 | 1579 | 1767 | 1800 | 1513 | 1682 |
| Adj Flow Rate, veh/h | 82 | 28 | 1100 | 220 | 45 | 233 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 50 | 14 | 1 | 1 | 19 | 7 |
| Cap, veh/h | 121 | 142 | 1176 | 144 | 97 | 1280 |
| Arrive On Green | 0.11 | 0.11 | 0.76 | 0.75 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1143 | 1342 | 1430 | 286 | 336 | 1682 |
| Grp Volume(v), veh/h | 82 | 28 | 0 | 1320 | 45 | 233 |
| Grp Sat Flow(s),veh/h/ln | 1143 | 1342 | 0 | 1717 | 336 | 1682 |
| Q Serve(g_s), s | 5.2 | 1.4 | 0.0 | 57.0 | 0.5 | 2.9 |
| Cycle Q Clear(g_c), s | 5.2 | 1.4 | 0.0 | 57.0 | 57.0 | 2.9 |
| Prop In Lane | 1.00 | 1.00 | | 0.17 | 1.00 | |
| Lane Grp Cap(c), veh/h | 121 | 142 | 0 | 1319 | 97 | 1280 |
| V/C Ratio(X) | 0.68 | 0.20 | 0.00 | 1.00 | 0.46 | 0.18 |
| Avail Cap(c_a), veh/h | 122 | 143 | 0 | 1306 | 98 | 1280 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.3 | 30.6 | 0.0 | 9.0 | 37.4 | 2.5 |
| Incr Delay (d2), s/veh | 14.0 | 0.7 | 0.0 | 24.9 | 3.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.8 | 1.0 | 0.0 | 65.9 | 1.8 | 2.4 |
| LnGrp Delay(d),s/veh | 46.3 | 31.3 | 0.0 | 39.4 | 40.8 | 2.6 |
| LnGrp LOS | D | C | | F | D | A |
| Approach Vol, veh/h | 110 | | 1320 | | | 278 |
| Approach Delay, s/veh | 42.5 | | 39.4 | | | 8.7 |
| Approach LOS | D | | D | | | A |

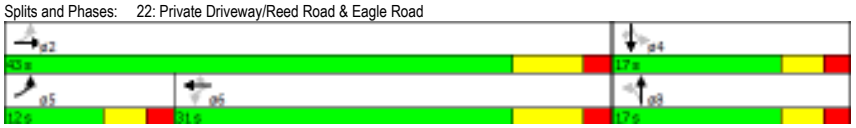
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.0 | | | | 62.0 | | 12.9 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 56.0 | | | | 56.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | | 59.0 | | | | 59.5 | | 7.7 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.6 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 426 | 141 | 2 | 2 | 409 | 836 | 5 | 3 | 3 | 226 | 3 | 64 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 43.0 | | 31.0 | 31.0 | 31.0 | 17.0 | 17.0 | | 17.0 | 17.0 | 17.0 |
| Total Split (%) | 20.0% | 71.7% | | 51.7% | 51.7% | 51.7% | 28.3% | 28.3% | | 28.3% | 28.3% | 28.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.2 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 426 | 141 | 2 | 2 | 409 | 836 | 5 | 3 | 3 | 226 | 3 | 64 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1773 | 1646 | 1790 |
| Adj Flow Rate, veh/h | 453 | 150 | 2 | 2 | 435 | 795 | 5 | 3 | 3 | 240 | 3 | 59 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 66 | 66 | 3 |
| Cap, veh/h | 395 | 1083 | 14 | 61 | 706 | 606 | 87 | 41 | 15 | 305 | 2 | 330 |
| Arrive On Green | 0.13 | 0.62 | 0.60 | 0.40 | 0.42 | 0.42 | 0.20 | 0.22 | 0.20 | 0.20 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1782 | 1757 | 23 | 1 | 1694 | 1455 | 0 | 189 | 71 | 857 | 11 | 1522 |
| Grp Volume(v), veh/h | 453 | 0 | 152 | 437 | 0 | 795 | 11 | 0 | 0 | 243 | 0 | 59 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 259 | 0 | 0 | 868 | 0 | 1522 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.1 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.1 | 12.3 | 0.0 | 25.0 | 12.0 | 0.0 | 0.0 | 12.0 | 0.0 | 1.9 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 0.99 | | 1.00 |
| Lane Grp Cap(c), veh/h | 395 | 0 | 1098 | 738 | 0 | 606 | 139 | 0 | 0 | 293 | 0 | 330 |
| V/C Ratio(X) | 1.15 | 0.00 | 0.14 | 0.59 | 0.00 | 1.31 | 0.08 | 0.00 | 0.00 | 0.83 | 0.00 | 0.18 |
| Avail Cap(c_a), veh/h | 457 | 0 | 1098 | 738 | 0 | 606 | 139 | 0 | 0 | 293 | 0 | 330 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.0 | 0.0 | 4.8 | 13.8 | 0.0 | 17.5 | 19.6 | 0.0 | 0.0 | 25.3 | 0.0 | 19.2 |
| Incr Delay (d2), s/veh | 91.3 | 0.0 | 0.1 | 1.7 | 0.0 | 151.7 | 0.2 | 0.0 | 0.0 | 17.9 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 38.7 | 0.0 | 0.0 | 0.0 | 0.0 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 34.7 | 0.0 | 2.0 | 10.3 | 0.0 | 66.9 | 0.3 | 0.0 | 0.0 | 9.4 | 0.0 | 1.5 |
| LnGrp Delay(d),s/veh | 144.0 | 0.0 | 4.9 | 15.5 | 0.0 | 182.6 | 19.9 | 0.0 | 0.0 | 43.2 | 0.0 | 19.4 |
| LnGrp LOS | F | | A | B | | F | B | | | D | | B |
| Approach Vol, veh/h | | 605 | | | 1232 | | | 11 | | | 302 | |
| Approach Delay, s/veh | | 109.1 | | | 123.3 | | | 19.9 | | | 38.5 | |
| Approach LOS | | F | | | F | | | B | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.0 | | 17.0 | 12.0 | 31.0 | | 17.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 12.0 | 7.0 | 24.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | | 4.1 | | 14.0 | 10.5 | 27.5 | | 14.0 |
| Green Ext Time (p_c), s | | 14.6 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 106.9 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 27 | 34 | 59 | 2201 | 1087 | 34 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 488 | 187 | |
| Travel Time (s) | 28.2 | | | 8.3 | 3.2 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 27 | 34 | 59 | 2201 | 1087 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 28 | 35 | 60 | 2246 | 1109 | 35 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2370 | 572 | 1144 | 0 | - | 0 |
| Stage 1 | 1127 | - | - | - | - | - |
| Stage 2 | 1243 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 22 | *772 | 883 | - | - | - |
| Stage 1 | *727 | - | - | - | - | - |
| Stage 2 | *189 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 21 | *772 | 883 | - | - | - |
| Mov Cap-2 Maneuver | *~ 21 | - | - | - | - | - |
| Stage 1 | *727 | - | - | - | - | - |
| Stage 2 | *176 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 395 | 0.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 883 | - | 46 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | 1.353 | - | - |
| HCM Control Delay (s) | 9.4 | - | $ 395 | - | - |
| HCM Lane LOS | A | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 6 | - | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 0 | 6 | 0 | 0 | 0 | 18 | 2201 | 22 | 6 | 1194 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 1 | | 1 | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 6% | 4% | 10% | 17% | 5% | 50% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 0 | 6 | 0 | 0 | 0 | 18 | 2201 | 22 | 6 | 1194 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 17 | 5 | 50 |
| Mvmt Flow | 4 | 0 | 6 | 0 | 0 | 0 | 19 | 2293 | 23 | 6 | 1244 | 2 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2440 | 3609 | 623 | 2976 | 3598 | 1158 | 1244 | 0 | 0 | 2316 | 0 | 0 |
| Stage 1 | 1256 | 1256 | - | 2342 | 2342 | - | - | - | - | - | - | - |
| Stage 2 | 1184 | 2353 | - | 634 | 1256 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.8 | 7.2 | 7.8 | 5.9 | 6.9 | 4 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.9 | 4 | 2.9 | 2.5 | - | - | 2.6 | - | - |
| Pot Cap-1 Maneuver | *10 | *4 | *691 | *5 | *10 | *183 | *803 | - | - | *204 | - | - |
| Stage 1 | *716 | *501 | - | *183 | *132 | - | - | - | - | - | - | - |
| Stage 2 | *189 | *132 | - | *692 | *501 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *10 | *4 | *690 | *5 | *9 | *183 | *802 | - | - | *204 | - | - |
| Mov Cap-2 Maneuver | *10 | *4 | - | *5 | *9 | - | - | - | - | - | - | - |
| Stage 1 | *699 | *487 | - | *178 | *129 | - | - | - | - | - | - | - |
| Stage 2 | *185 | *129 | - | *665 | *487 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 228.1 | 0 | 0.1 | 0.1 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 802 | - | - | 25 | - | * 204 | - | - |
| HCM Lane V/C Ratio | 0.023 | - | - | 0.417 | - | 0.031 | - | - |
| HCM Control Delay (s) | 9.6 | - | - | 228.1 | 0 | 23.2 | - | - |
| HCM Lane LOS | A | - | - | F | A | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.3 | - | 0.1 | - | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 0 | 0 | 2151 | 1365 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 263 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 4% | 6% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 2151 | 1365 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 4 | 6 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 2313 | 1468 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2624 | 734 | 1468 | 0 | - | 0 |
| Stage 1 | 1468 | - | - | - | - | - |
| Stage 2 | 1156 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *11 | *596 | *721 | - | - | - |
| Stage 1 | *617 | - | - | - | - | - |
| Stage 2 | *219 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *11 | *596 | *721 | - | - | - |
| Mov Cap-2 Maneuver | *151 | - | - | - | - | - |
| Stage 1 | *617 | - | - | - | - | - |
| Stage 2 | *219 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 721 | - | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 47 | 2199 | 56 | 66 | 1148 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 47 | 2199 | 56 | 66 | 1148 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 52 | 2443 | 62 | 73 | 1276 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3258 | 1253 | 0 | 0 | 2506 | 0 |
| Stage 1 | 2474 | - | - | - | - | - |
| Stage 2 | 784 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | *5 | *171 | - | - | *212 | - |
| Stage 1 | *189 | - | - | - | - | - |
| Stage 2 | *749 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *5 | *171 | - | - | *212 | - |
| Mov Cap-2 Maneuver | *5 | - | - | - | - | - |
| Stage 1 | *189 | - | - | - | - | - |
| Stage 2 | *749 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 35.1 | 0 | 14.7 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 171 | * 212 | - |
| HCM Lane V/C Ratio | - | - | 0.305 | 0.346 | - |
| HCM Control Delay (s) | - | - | 35.1 | 30.7 | 13.8 |
| HCM Lane LOS | - | - | E | D | B |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 1.5 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 43 | 48 | 59 | 762 | 446 | 409 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 43 | 48 | 59 | 762 | 446 | 409 |
| Conflicting Peds, #/hr | 0 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 11 | 2 | 4 | 5 | 5 |
| Mvmt Flow | 44 | 49 | 61 | 786 | 460 | 422 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1578 | 672 | 881 | 0 | - | 0 |
| Stage 1 | 671 | - | - | - | - | - |
| Stage 2 | 907 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.31 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.2 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 130 | 525 | 512 | - | - | - |
| Stage 1 | 599 | - | - | - | - | - |
| Stage 2 | 474 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | 103 | 525 | 512 | - | - | - |
| Mov Cap-2 Maneuver | 103 | - | - | - | - | - |
| Stage 1 | 599 | - | - | - | - | - |
| Stage 2 | 374 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 45.3 | 0.9 | 0 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 512 | - | 179 | - | - |
| HCM Lane V/C Ratio | 0.119 | - | 0.524 | - | - |
| HCM Control Delay (s) | 13 | 0 | 45.3 | - | - |
| HCM Lane LOS | B | A | E | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 2.6 | - | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 126 | 375 | 319 | 57 | 26 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 404 | 326 | | 533 | |
| Travel Time (s) | | 7.9 | 6.4 | | 14.5 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 5% | 8% | 17% | 0% | 10% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 126 | 375 | 319 | 57 | 26 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 5 | 8 | 17 | 0 | 10 |
| Mvmt Flow | 134 | 399 | 339 | 61 | 28 | 66 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 401 | 0 | - | 0 | 839 | 371 |
| Stage 1 | - | - | - | - | 371 | - |
| Stage 2 | - | - | - | - | 468 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1107 | - | - | - | 305 | 699 |
| Stage 1 | - | - | - | - | 773 | - |
| Stage 2 | - | - | - | - | 642 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1107 | - | - | - | 257 | 698 |
| Mov Cap-2 Maneuver | - | - | - | - | 257 | - |
| Stage 1 | - | - | - | - | 772 | - |
| Stage 2 | - | - | - | - | 541 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.5 | 0 | 14.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1107 | - | - | - | 463 |
| HCM Lane V/C Ratio | 0.121 | - | - | - | 0.202 |
| HCM Control Delay (s) | 8.7 | 0.4 | - | - | 14.7 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.7 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 46 | 383 | 376 | 62 | 40 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 326 | 284 | | 215 | |
| Travel Time (s) | | 6.4 | 5.5 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 2 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 6% | 9% | 5% | 3% | 8% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 46 | 383 | 376 | 62 | 40 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 2 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 6 | 9 | 5 | 3 | 8 |
| Mvmt Flow | 49 | 412 | 404 | 67 | 43 | 13 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 473 | 0 | - | 0 | 745 | 440 |
| Stage 1 | - | - | - | - | 440 | - |
| Stage 2 | - | - | - | - | 305 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.6 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1048 | - | - | - | 359 | 640 |
| Stage 1 | - | - | - | - | 703 | - |
| Stage 2 | - | - | - | - | 819 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1048 | - | - | - | 336 | 639 |
| Mov Cap-2 Maneuver | - | - | - | - | 336 | - |
| Stage 1 | - | - | - | - | 702 | - |
| Stage 2 | - | - | - | - | 768 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 16.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1048 | - | - | - | 377 |
| HCM Lane V/C Ratio | 0.047 | - | - | - | 0.148 |
| HCM Control Delay (s) | 8.6 | 0.2 | - | - | 16.2 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 4 | 99 | 993 | 28 | 188 | 282 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 99 | 993 | 28 | 188 | 282 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 4 | 101 | 1013 | 29 | 192 | 288 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1684 | 1013 | 0 | 0 | 1013 | 0 |
| Stage 1 | 1013 | - | - | - | - | - |
| Stage 2 | 671 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 124 | 289 | - | - | 565 | - |
| Stage 1 | 414 | - | - | - | - | - |
| Stage 2 | 597 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 74 | 289 | - | - | 565 | - |
| Mov Cap-2 Maneuver | 208 | - | - | - | - | - |
| Stage 1 | 414 | - | - | - | - | - |
| Stage 2 | 356 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24.8 | 0 | 5.8 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 285 | 565 | - |
| HCM Lane V/C Ratio | - | - | 0.369 | 0.34 | - |
| HCM Control Delay (s) | - | - | 24.8 | 14.6 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 1.6 | 1.5 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 54 | 209 | 699 | 138 | 54 | 99 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Heavy Vehicles (%) | 15% | 8% | 3% | 8% | 19% | 17% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 18.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 54 | 209 | 699 | 138 | 54 | 99 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 15 | 8 | 3 | 8 | 19 | 17 |
| Mvmt Flow | 73 | 282 | 945 | 186 | 73 | 134 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1131 | 0 | - | 0 | 1466 | 566 |
| Stage 1 | - | - | - | - | 1038 | - |
| Stage 2 | - | - | - | - | 428 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.4 | 7.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.2 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 627 | - | - | - | 102 | 466 |
| Stage 1 | - | - | - | - | 267 | - |
| Stage 2 | - | - | - | - | 683 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 627 | - | - | - | 90 | 466 |
| Mov Cap-2 Maneuver | - | - | - | - | 90 | - |
| Stage 1 | - | - | - | - | 267 | - |
| Stage 2 | - | - | - | - | 603 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.4 | 0 | 146.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 627 | - | - | - | 188 |
| HCM Lane V/C Ratio | 0.116 | - | - | - | 1.1 |
| HCM Control Delay (s) | 11.5 | - | - | - | 146.5 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 10.1 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 57 | 16 | 33 | 18 | 22 | 29 | 49 | 632 | 2 | 18 | 176 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 196 | | | 212 | | | 402 | | | 582 | |
| Travel Time (s) | | 5.3 | | | 5.8 | | | 11.0 | | | 15.9 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 38.8 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 57 | 16 | 33 | 0 | 18 | 22 | 29 | 0 | 49 | 632 | 2 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 16 | 13 | 13 | 2 | 6 | 0 | 0 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 0 | 61 | 17 | 35 | 0 | 19 | 23 | 31 | 0 | 52 | 672 | 2 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.3 | 10.7 | 55.5 |
| HCM LOS | B | B | F |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 7% | 78% | 0% | 26% | 7% |
| Vol Thru, % | 93% | 22% | 0% | 32% | 71% |
| Vol Right, % | 0% | 0% | 100% | 42% | 21% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 683 | 73 | 33 | 69 | 247 |
| LT Vol | 49 | 57 | 0 | 18 | 18 |
| Through Vol | 632 | 16 | 0 | 22 | 176 |
| RT Vol | 2 | 0 | 33 | 29 | 53 |
| Lane Flow Rate | 727 | 78 | 35 | 73 | 263 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 1 | 0.169 | 0.065 | 0.137 | 0.405 |
| Departure Headway (Hd) | 4.968 | 7.827 | 6.657 | 6.73 | 5.542 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 727 | 465 | 545 | 540 | 657 |
| Service Time | 3.005 | 5.455 | 4.315 | 4.673 | 3.522 |
| HCM Lane V/C Ratio | 1 | 0.168 | 0.064 | 0.135 | 0.4 |
| HCM Control Delay | 55.5 | 12 | 9.8 | 10.7 | 12.2 |
| HCM Lane LOS | F | B | A | B | B |
| HCM 95th-tile Q | 16.4 | 0.6 | 0.2 | 0.5 | 2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 176 | 53 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 19 | 187 | 56 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 12.2 |
| HCM LOS | B |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 241 | 28 | 43 | 448 | 246 | 322 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1458 | | | 574 | 519 | |
| Travel Time (s) | 33.1 | | | 13.0 | 11.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 79.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 241 | 28 | 43 | 448 | 246 | 322 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 6 | 0 | 2 | 4 | 4 | 1 |
| Mvmt Flow | 277 | 32 | 49 | 515 | 283 | 370 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 278 | 0 | 892 | 278 |
| Stage 1 | - | - | - | - | 278 | - |
| Stage 2 | - | - | - | - | 614 | - |
| Critical Hdwy | - | - | 4.12 | - | 8.84 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.84 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.536 | 3.309 |
| Pot Cap-1 Maneuver | - | - | 1285 | - | ~ 171 | 696 |
| Stage 1 | - | - | - | - | 635 | - |
| Stage 2 | - | - | - | - | 356 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1285 | - | ~ 162 | 696 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 162 | - |
| Stage 1 | - | - | - | - | 635 | - |
| Stage 2 | - | - | - | - | 337 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.7 | 185.9 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 162 | 696 | - | - | 1285 | - |
| HCM Lane V/C Ratio | 1.745 | 0.532 | - | - | 0.038 | - |
| HCM Control Delay (s) | $ 408.4 | 15.9 | - | - | 7.9 | 0 |
| HCM Lane LOS | F | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 20.3 | 3.2 | - | - | 0.1 | - |

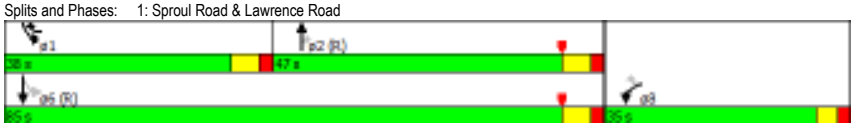
**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 437 | 587 | 1041 | 340 | 540 | 1428 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 35.0 | 38.0 | 47.0 | 47.0 | 38.0 | 85.0 |
| Total Split (%) | 29.2% | 31.7% | 39.2% | 39.2% | 31.7% | 70.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 437 | 587 | 1041 | 340 | 540 | 1428 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 455 | 549 | 1084 | 270 | 562 | 1488 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 430 | 792 | 1179 | 549 | 555 | 2395 |
| Arrive On Green | 0.26 | 0.26 | 0.70 | 0.70 | 0.28 | 0.67 |
| Sat Flow, veh/h | 1663 | 1485 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 455 | 549 | 1084 | 270 | 562 | 1488 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 31.0 | 31.0 | 32.5 | 9.5 | 30.5 | 28.3 |
| Cycle Q Clear(g_c), s | 31.0 | 31.0 | 32.5 | 9.5 | 30.5 | 28.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 430 | 792 | 1179 | 549 | 555 | 2395 |
| V/C Ratio(X) | 1.06 | 0.69 | 0.92 | 0.49 | 1.01 | 0.62 |
| Avail Cap(c_a), veh/h | 430 | 792 | 1179 | 549 | 587 | 2395 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.26 | 0.26 | 0.76 | 0.76 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.5 | 20.7 | 16.8 | 13.1 | 37.1 | 11.4 |
| Incr Delay (d2), s/veh | 39.6 | 0.7 | 10.3 | 2.4 | 40.0 | 1.2 |
| Initial Q Delay(d3),s/veh | 23.4 | 0.0 | 0.6 | 0.0 | 31.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 37.1 | 16.7 | 22.6 | 7.2 | 49.1 | 20.4 |
| LnGrp Delay(d),s/veh | 107.5 | 21.4 | 27.6 | 15.5 | 108.6 | 12.6 |
| LnGrp LOS | F | C | C | B | F | B |
| Approach Vol, veh/h | 1004 | | 1354 | | | 2050 |
| Approach Delay, s/veh | 60.5 | | 25.2 | | | 38.9 |
| Approach LOS | E | | C | | | D |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 38.0 | 47.0 | | | | 85.0 | | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 32.0 | 41.0 | | | | 79.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 33.0 | 35.0 | | | | 30.8 | | 33.5 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | | | | 23.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 39.6 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 26 | 253 | 13 | 215 | 19 | 1118 | 129 | 191 | 1801 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | 19.0 | 10.0 | 61.0 | 61.0 | 19.0 | 70.0 | |
| Total Split (%) | 33.3% | 33.3% | | 33.3% | 33.3% | 15.8% | 8.3% | 50.8% | 50.8% | 15.8% | 58.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 13 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 26 | 253 | 13 | 215 | 19 | 1118 | 129 | 191 | 1801 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1773 | 1800 | 1764 | 1764 | 1747 | 1764 | 1747 | 1835 | 1800 | 1782 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 26 | 258 | 13 | 201 | 19 | 1141 | 0 | 195 | 1838 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 40 | 37 | 22 | 229 | 9 | 571 | 175 | 1642 | 772 | 293 | 1962 | 19 |
| Arrive On Green | 0.28 | 0.29 | 0.28 | 0.28 | 0.29 | 0.29 | 0.01 | 0.17 | 0.00 | 0.17 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 126 | 74 | 583 | 29 | 1463 | 1680 | 3318 | 1559 | 1714 | 3434 | 35 |
| Grp Volume(v), veh/h | 70 | 0 | 0 | 271 | 0 | 201 | 19 | 1141 | 0 | 195 | 905 | 952 |
| Grp Sat Flow(s),veh/h/ln | 200 | 0 | 0 | 613 | 0 | 1463 | 1680 | 1659 | 1559 | 1714 | 1693 | 1776 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.9 | 0.7 | 38.7 | 0.0 | 6.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 34.0 | 0.0 | 0.0 | 34.0 | 0.0 | 11.9 | 0.7 | 38.7 | 0.0 | 6.2 | 0.0 | 0.0 |
| Prop In Lane | 0.33 | | 0.37 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 96 | 0 | 0 | 232 | 0 | 571 | 175 | 1642 | 772 | 293 | 967 | 1014 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.00 | 1.17 | 0.00 | 0.35 | 0.11 | 0.69 | 0.00 | 0.66 | 0.94 | 0.94 |
| Avail Cap(c_a), veh/h | 96 | 0 | 0 | 232 | 0 | 550 | 263 | 1687 | 793 | 362 | 967 | 1014 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.64 | 0.64 | 0.00 | 0.61 | 0.61 | 0.61 |
| Uniform Delay (d), s/veh | 35.5 | 0.0 | 0.0 | 46.9 | 0.0 | 26.0 | 18.8 | 41.7 | 0.0 | 19.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 23.6 | 0.0 | 0.0 | 111.6 | 0.0 | 0.4 | 0.2 | 1.6 | 0.0 | 2.0 | 11.8 | 11.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.5 | 0.5 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 0.0 | 0.0 | 26.9 | 0.0 | 8.3 | 0.6 | 23.9 | 0.0 | 6.3 | 5.6 | 5.7 |
| LnGrp Delay(d),s/veh | 59.1 | 0.0 | 0.0 | 158.5 | 0.0 | 26.4 | 19.0 | 43.3 | 0.0 | 22.8 | 12.3 | 12.1 |
| LnGrp LOS | E | | | F | | C | B | D | | C | B | B |
| Approach Vol, veh/h | | 70 | | | 472 | | | 1160 | | | 2052 | |
| Approach Delay, s/veh | | 59.1 | | | 102.3 | | | 42.9 | | | 13.2 | |
| Approach LOS | | E | | | F | | | D | | | B | |

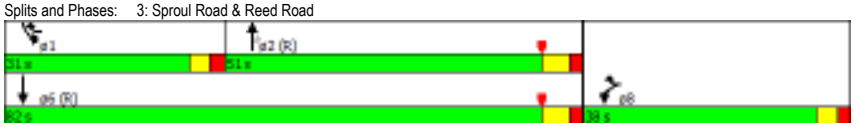
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.0 | 66.0 | | 40.0 | 6.5 | 73.5 | | 40.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 14.0 | 55.0 | | 34.0 | 5.0 | 64.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 8.7 | 41.2 | | 36.0 | 3.2 | 2.5 | | 36.0 |
| Green Ext Time (p_c), s | 0.3 | 10.9 | | 0.0 | 0.0 | 27.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.4 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 311 | 155 | 1082 | 245 | 264 | 1702 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 413 | | 187 | | | 884 |
| Travel Time (s) | 8.0 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 38.0 | | 51.0 | 51.0 | 31.0 | 82.0 |
| Total Split (%) | 31.7% | | 42.5% | 42.5% | 25.8% | 68.3% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 84 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 311 | 155 | 1082 | 245 | 264 | 1702 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 3 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1747 | 1818 | 1818 |
| Adj Flow Rate, veh/h | 334 | 167 | 1163 | 189 | 284 | 1830 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 390 | 655 | 1565 | 700 | 340 | 2417 |
| Arrive On Green | 0.23 | 0.23 | 0.47 | 0.47 | 0.13 | 0.47 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1485 | 1731 | 3545 |
| Grp Volume(v), veh/h | 334 | 167 | 1163 | 189 | 284 | 1830 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1485 | 1731 | 1727 |
| Q Serve(g_s), s | 22.2 | 8.4 | 34.1 | 9.2 | 19.3 | 52.4 |
| Cycle Q Clear(g_c), s | 22.2 | 8.4 | 34.1 | 9.2 | 19.3 | 52.4 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 390 | 655 | 1565 | 700 | 340 | 2417 |
| V/C Ratio(X) | 0.86 | 0.25 | 0.74 | 0.27 | 0.83 | 0.76 |
| Avail Cap(c_a), veh/h | 491 | 743 | 1572 | 703 | 390 | 2417 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.36 | 0.36 |
| Uniform Delay (d), s/veh | 44.6 | 22.6 | 25.8 | 19.2 | 50.6 | 23.5 |
| Incr Delay (d2), s/veh | 11.7 | 0.2 | 3.2 | 0.9 | 5.2 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 17.5 | 6.5 | 22.9 | 7.2 | 13.6 | 30.4 |
| LnGrp Delay(d),s/veh | 56.3 | 22.8 | 29.0 | 20.1 | 59.2 | 24.4 |
| LnGrp LOS | E | C | C | C | E | C |
| Approach Vol, veh/h | 501 | | 1352 | | | 2114 |
| Approach Delay, s/veh | 45.2 | | 27.8 | | | 29.0 |
| Approach LOS | D | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 27.1 | 61.8 | | | | 89.0 | | 31.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 26.0 | 45.0 | | | | 76.0 | | 33.0 |
| Max Q Clear Time (g_c+I1), s | 21.8 | 36.6 | | | | 54.9 | | 24.7 |
| Green Ext Time (p_c), s | 0.4 | 7.4 | | | | 16.4 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.6 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 500 | 1001 | 6 | 716 | 1553 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 515 | 1038 | 0 | 738 | 1601 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 39.0 | 36.0 | | 39.0 | 75.0 |
| Total Split (%) | | 52.0% | 48.0% | | 52.0% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 31.0 | 29.0 | | 31.0 | 75.0 |
| Actuated g/C Ratio | | 0.41 | 0.39 | | 0.41 | 1.00 |
| v/c Ratio | | 0.48 | 0.78 | | 1.09 | 0.95 |
| Control Delay | | 12.7 | 29.5 | | 86.8 | 15.0 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 12.7 | 29.5 | | 86.8 | 15.0 |
| LOS | | B | C | | F | B |
| Approach Delay | | | 29.5 | | | 37.7 |
| Approach LOS | | | C | | | D |
| Queue Length 50th (ft) | | 106 | 274 | | ~395 | 0 |
| Queue Length 95th (ft) | | m106 | m264 | | #597 | #160 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1065 | 1325 | | 676 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



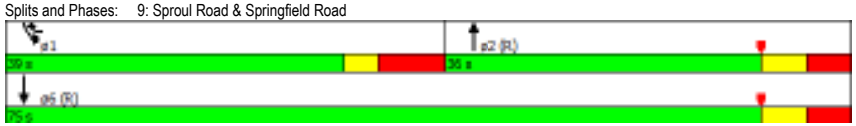


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.48 | 0.78 | | 1.09 | 0.95 |

**Intersection Summary**

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 70 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 154 | 166 | 55 | 153 | 142 | 12 | 73 | 872 | 61 | 4 | 1176 | 146 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 28.0 | 28.0 | | 28.0 | 28.0 | | 47.0 | 47.0 | | 47.0 | 47.0 | |
| Total Split (%) | 37.3% | 37.3% | | 37.3% | 37.3% | | 62.7% | 62.7% | | 62.7% | 62.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 4 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 154 | 166 | 55 | 153 | 142 | 12 | 73 | 872 | 61 | 4 | 1176 | 146 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1882 | 1818 | 1782 | 1756 | 1782 | 1773 | 1750 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 160 | 173 | 45 | 159 | 148 | 9 | 76 | 908 | 52 | 4 | 1225 | 123 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 233 | 212 | 51 | 232 | 185 | 10 | 81 | 1132 | 70 | 49 | 1711 | 172 |
| Arrive On Green | 0.29 | 0.31 | 0.29 | 0.29 | 0.31 | 0.29 | 0.55 | 0.56 | 0.55 | 0.55 | 0.56 | 0.55 |
| Sat Flow, veh/h | 537 | 693 | 166 | 522 | 604 | 33 | 83 | 2276 | 143 | 2 | 3086 | 308 |
| Grp Volume(v), veh/h | 378 | 0 | 0 | 316 | 0 | 0 | 464 | 0 | 572 | 717 | 0 | 635 |
| Grp Sat Flow(s),veh/h/ln | 1396 | 0 | 0 | 1159 | 0 | 0 | 935 | 0 | 1567 | 1805 | 0 | 1592 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 13.4 | 0.0 | 19.0 | 0.0 | 0.0 | 22.0 |
| Cycle Q Clear(g_c), s | 19.9 | 0.0 | 0.0 | 20.2 | 0.0 | 0.0 | 35.4 | 0.0 | 19.0 | 22.0 | 0.0 | 22.0 |
| Prop In Lane | 0.42 | | 0.12 | 0.50 | | 0.03 | 0.16 | | 0.09 | 0.01 | | 0.19 |
| Lane Grp Cap(c), veh/h | 478 | 0 | 0 | 412 | 0 | 0 | 103 | 0 | 879 | 1032 | 0 | 892 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.00 | 0.77 | 0.00 | 0.00 | 4.53 | 0.00 | 0.65 | 0.69 | 0.00 | 0.71 |
| Avail Cap(c_a), veh/h | 478 | 0 | 0 | 412 | 0 | 0 | 567 | 0 | 877 | 1035 | 0 | 891 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.9 | 0.0 | 0.0 | 24.9 | 0.0 | 0.0 | 28.4 | 0.0 | 13.2 | 12.2 | 0.0 | 12.2 |
| Incr Delay (d2), s/veh | 8.8 | 0.0 | 0.0 | 8.4 | 0.0 | 0.0 | 1609.1 | 0.0 | 3.7 | 3.9 | 0.0 | 4.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.7 | 0.0 | 0.0 | 11.9 | 0.0 | 0.0 | 82.6 | 0.0 | 18.1 | 18.3 | 0.0 | 16.2 |
| LnGrp Delay(d),s/veh | 33.7 | 0.0 | 0.0 | 33.4 | 0.0 | 0.0 | 1637.5 | 0.0 | 16.9 | 16.0 | 0.0 | 17.0 |
| LnGrp LOS | C | | | C | | | F | | B | B | | B |
| Approach Vol, veh/h | | 378 | | | 316 | | | 1036 | | | 1352 | |
| Approach Delay, s/veh | | 33.7 | | | 33.4 | | | 743.5 | | | 16.5 | |
| Approach LOS | | C | | | C | | | F | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 47.0 | | 28.0 | | 47.0 | | 28.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 41.0 | | 22.0 | | 41.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 37.4 | | 21.9 | | 24.0 | | 22.2 |
| Green Ext Time (p_c), s | | 3.0 | | 0.1 | | 10.4 | | 0.0 |

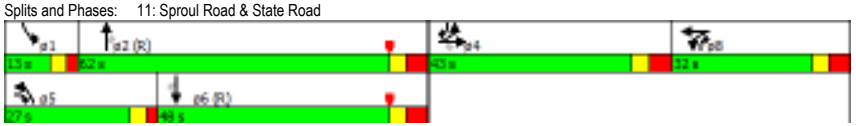
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 264.7 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 302 | 86 | 733 | 313 | 156 | 29 | 317 | 682 | 318 | 36 | 1030 | 398 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 36% | | | 21% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 43.0 | 43.0 | 27.0 | 32.0 | 32.0 | | 27.0 | 62.0 | 32.0 | 13.0 | 48.0 | 43.0 |
| Total Split (%) | 28.7% | 28.7% | 18.0% | 21.3% | 21.3% | | 18.0% | 41.3% | 21.3% | 8.7% | 32.0% | 28.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 302 | 86 | 733 | 313 | 156 | 29 | 317 | 682 | 318 | 36 | 1030 | 398 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1812 | 1844 | 1872 | 1851 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 200 | 244 | 0 | 242 | 274 | 0 | 327 | 703 | 0 | 37 | 1062 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 287 | 372 | 562 | 301 | 313 | 0 | 260 | 1641 | 936 | 63 | 963 | 804 |
| Arrive On Green | 0.16 | 0.16 | 0.00 | 0.17 | 0.17 | 0.00 | 0.15 | 0.49 | 0.00 | 0.04 | 0.37 | 0.00 |
| Sat Flow, veh/h | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 200 | 244 | 0 | 242 | 274 | 0 | 327 | 703 | 0 | 37 | 1062 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 16.1 | 19.6 | 0.0 | 19.6 | 21.7 | 0.0 | 23.0 | 20.2 | 0.0 | 3.2 | 43.3 | 0.0 |
| Cycle Q Clear(g_c), s | 16.1 | 19.6 | 0.0 | 19.6 | 21.7 | 0.0 | 23.0 | 20.2 | 0.0 | 3.2 | 43.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 287 | 372 | 562 | 301 | 313 | 0 | 260 | 1641 | 936 | 63 | 963 | 804 |
| V/C Ratio(X) | 0.70 | 0.66 | 0.00 | 0.80 | 0.88 | 0.00 | 1.26 | 0.43 | 0.00 | 0.59 | 1.10 | 0.00 |
| Avail Cap(c_a), veh/h | 433 | 447 | 627 | 309 | 321 | 0 | 260 | 1645 | 1002 | 103 | 1249 | 804 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.4 | 54.9 | 0.0 | 59.9 | 60.8 | 0.0 | 63.5 | 25.3 | 0.0 | 71.2 | 53.7 | 0.0 |
| Incr Delay (d2), s/veh | 3.0 | 2.6 | 0.0 | 13.9 | 22.4 | 0.0 | 142.8 | 0.8 | 0.0 | 8.6 | 61.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.1 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.0 | 14.7 | 0.0 | 16.2 | 19.0 | 0.0 | 38.0 | 15.0 | 0.0 | 3.0 | 53.7 | 0.0 |
| LnGrp Delay(d),s/veh | 62.7 | 57.5 | 0.0 | 73.8 | 83.2 | 0.0 | 206.3 | 26.1 | 0.0 | 79.7 | 135.2 | 0.0 |
| LnGrp LOS | E | E | | E | F | | F | C | | E | F | |
| Approach Vol, veh/h | | 444 | | | 516 | | | 1030 | | | 1099 | |
| Approach Delay, s/veh | | 59.9 | | | 78.8 | | | 83.3 | | | 133.3 | |
| Approach LOS | | E | | | E | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.5 | 78.9 | | 30.3 | 27.0 | 61.3 | | 31.3 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 55.0 | | 36.0 | 22.0 | 41.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 5.7 | 22.7 | | 22.1 | 25.5 | 45.8 | | 24.2 |
| Green Ext Time (p_c), s | 0.0 | 9.7 | | 1.3 | 0.0 | 0.0 | | 0.2 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 97.0 |
| HCM 2010 LOS | F |

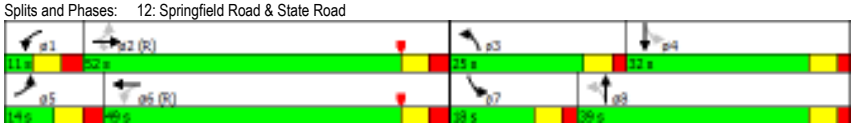
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 181 | 1376 | 529 | 37 | 1178 | 76 | 359 | 358 | 42 | 228 | 393 | 61 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 14.0 | 52.0 | 52.0 | 11.0 | 49.0 | | 25.0 | 39.0 | | 18.0 | 32.0 | |
| Total Split (%) | 11.7% | 43.3% | 43.3% | 9.2% | 40.8% | | 20.8% | 32.5% | | 15.0% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 181 | 1376 | 529 | 37 | 1178 | 76 | 359 | 358 | 42 | 228 | 393 | 61 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1806 | 1827 |
| Adj Flow Rate, veh/h | 183 | 1390 | 0 | 37 | 1190 | 0 | 363 | 362 | 0 | 230 | 397 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 177 | 1366 | 611 | 114 | 1177 | 0 | 344 | 508 | 0 | 323 | 406 | 0 |
| Arrive On Green | 0.07 | 0.39 | 0.00 | 0.03 | 0.36 | 0.00 | 0.17 | 0.28 | 0.00 | 0.11 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1806 | 0 |
| Grp Volume(v), veh/h | 183 | 1390 | 0 | 37 | 1190 | 0 | 363 | 362 | 0 | 230 | 397 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1806 | 0 |
| Q Serve(g_s), s | 8.0 | 47.0 | 0.0 | 1.7 | 43.0 | 0.0 | 20.0 | 21.8 | 0.0 | 12.3 | 26.2 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 47.0 | 0.0 | 1.7 | 43.0 | 0.0 | 20.0 | 21.8 | 0.0 | 12.3 | 26.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 177 | 1366 | 611 | 114 | 1177 | 0 | 344 | 508 | 0 | 323 | 406 | 0 |
| V/C Ratio(X) | 1.04 | 1.02 | 0.00 | 0.33 | 1.01 | 0.00 | 1.05 | 0.71 | 0.00 | 0.71 | 0.98 | 0.00 |
| Avail Cap(c_a), veh/h | 177 | 1366 | 611 | 127 | 1177 | 0 | 351 | 508 | 0 | 347 | 406 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 31.4 | 36.5 | 0.0 | 30.4 | 38.5 | 0.0 | 36.0 | 38.9 | 0.0 | 32.6 | 46.5 | 0.0 |
| Incr Delay (d2), s/veh | 77.7 | 28.7 | 0.0 | 1.6 | 29.0 | 0.0 | 63.5 | 4.7 | 0.0 | 6.2 | 38.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 75.2 | 7.7 | 0.0 | 0.0 | 3.0 | 0.0 | 19.6 | 0.4 | 0.0 | 0.2 | 7.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 21.4 | 52.0 | 0.0 | 1.4 | 44.0 | 0.0 | 33.4 | 17.4 | 0.0 | 8.6 | 25.5 | 0.0 |
| LnGrp Delay(d),s/veh | 184.2 | 73.0 | 0.0 | 32.1 | 70.5 | 0.0 | 119.1 | 43.9 | 0.0 | 39.0 | 92.3 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | D | | D | F | |
| Approach Vol, veh/h | | 1573 | | | 1227 | | | 725 | | | 627 | |
| Approach Delay, s/veh | | 85.9 | | | 69.3 | | | 81.5 | | | 72.8 | |
| Approach LOS | | F | | | E | | | F | | | E | |

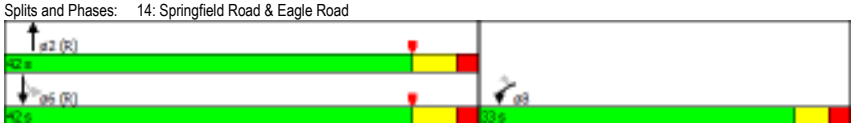
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 53.0 | 25.0 | 32.0 | 14.0 | 49.0 | 18.0 | 39.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 45.0 | 19.0 | 26.0 | 7.0 | 42.0 | 12.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 49.5 | 22.5 | 28.7 | 10.5 | 45.5 | 14.8 | 24.3 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 78.3 |
| HCM 2010 LOS | | E |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 380 | 56 | 339 | 369 | 158 | 471 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 33.0 | 33.0 | 42.0 | | 42.0 | 42.0 |
| Total Split (%) | 44.0% | 44.0% | 56.0% | | 56.0% | 56.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 13 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 380 | 56 | 339 | 369 | 158 | 471 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1809 | 1809 | 1774 | 1791 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 400 | 41 | 357 | 341 | 166 | 496 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 1 | 1 |
| Cap, veh/h | 485 | 514 | 456 | 435 | 94 | 292 |
| Arrive On Green | 0.28 | 0.28 | 0.60 | 0.59 | 0.59 | 0.60 |
| Sat Flow, veh/h | 1723 | 1537 | 835 | 798 | 159 | 667 |
| Grp Volume(v), veh/h | 400 | 41 | 0 | 698 | 662 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1723 | 1537 | 0 | 1633 | 826 | 0 |
| Q Serve(g_s), s | 16.3 | 1.5 | 0.0 | 22.6 | 21.4 | 0.0 |
| Cycle Q Clear(g_c), s | 16.3 | 1.5 | 0.0 | 22.6 | 44.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.49 | 0.25 | |
| Lane Grp Cap(c), veh/h | 485 | 514 | 0 | 891 | 275 | 0 |
| V/C Ratio(X) | 0.82 | 0.08 | 0.00 | 0.78 | 2.41 | 0.00 |
| Avail Cap(c_a), veh/h | 666 | 594 | 0 | 980 | 544 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 25.3 | 17.2 | 0.0 | 13.9 | 24.6 | 0.0 |
| Incr Delay (d2), s/veh | 6.0 | 0.1 | 0.0 | 6.8 | 634.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.5 | 1.1 | 0.0 | 19.0 | 93.8 | 0.0 |
| LnGrp Delay(d),s/veh | 31.5 | 17.3 | 0.0 | 20.7 | 659.3 | 0.0 |
| LnGrp LOS | C | B | | C | F | |
| Approach Vol, veh/h | 441 | | 698 | | 662 | |
| Approach Delay, s/veh | 30.2 | | 20.7 | | 659.3 | |
| Approach LOS | C | | C | | F | |

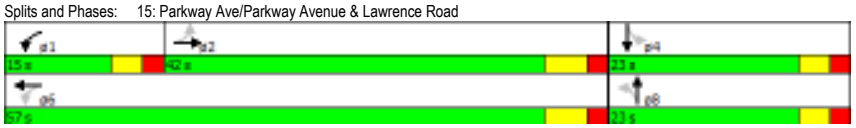
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 50.0 | | | | 50.0 | | 25.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | | | 36.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | | 24.6 | | | | 46.0 | | 18.8 |
| Green Ext Time (p_c), s | | 5.6 | | | | 0.0 | | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 257.8 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 7 | 564 | 230 | 370 | 755 | 5 | 263 | 23 | 231 | 6 | 39 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 598 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 42.0 | 42.0 | | 15.0 | 57.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 52.5% | 52.5% | | 18.8% | 71.3% | | 28.8% | 28.8% | | 28.8% | 28.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 76.1 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 564 | 230 | 370 | 755 | 5 | 263 | 23 | 231 | 6 | 39 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1811 | 1827 |
| Adj Flow Rate, veh/h | 7 | 581 | 228 | 381 | 778 | 5 | 271 | 24 | 143 | 6 | 40 | 4 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 50 | 1518 | 590 | 92 | 1034 | 7 | 400 | 52 | 308 | 72 | 359 | 33 |
| Arrive On Green | 0.64 | 0.65 | 0.64 | 0.64 | 0.65 | 0.64 | 0.24 | 0.24 | 0.22 | 0.22 | 0.24 | 0.22 |
| Sat Flow, veh/h | 7 | 2335 | 907 | 3 | 1591 | 10 | 1279 | 217 | 1295 | 89 | 1510 | 139 |
| Grp Volume(v), veh/h | 447 | 0 | 369 | 381 | 0 | 783 | 271 | 0 | 167 | 50 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1779 | 0 | 1470 | 3 | 0 | 1602 | 1279 | 0 | 1513 | 1738 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 9.6 | 72.5 | 0.0 | 26.8 | 14.6 | 0.0 | 7.6 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.4 | 0.0 | 9.6 | 72.5 | 0.0 | 26.8 | 15.9 | 0.0 | 7.6 | 1.8 | 0.0 | 0.0 |
| Prop In Lane | 0.02 | | 0.62 | 1.00 | | 0.01 | 1.00 | | 0.86 | 0.12 | | 0.08 |
| Lane Grp Cap(c), veh/h | 1180 | 0 | 955 | 0 | 0 | 1041 | 400 | 0 | 359 | 442 | 0 | 0 |
| V/C Ratio(X) | 0.38 | 0.00 | 0.39 | 0.00 | 0.00 | 0.75 | 0.68 | 0.00 | 0.46 | 0.11 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1180 | 0 | 955 | 0 | 0 | 1041 | 400 | 0 | 359 | 442 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.5 | 0.0 | 6.7 | 0.0 | 0.0 | 9.6 | 29.2 | 0.0 | 26.5 | 24.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.3 | 0.0 | 0.0 | 3.1 | 4.5 | 0.0 | 0.9 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.4 | 0.0 | 7.1 | 0.0 | 0.0 | 18.2 | 10.3 | 0.0 | 5.9 | 1.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 6.7 | 0.0 | 7.0 | 0.0 | 0.0 | 12.7 | 33.7 | 0.0 | 27.5 | 24.1 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | C | | |
| Approach Vol, veh/h | | 816 | | | 1164 | | | 438 | | | 50 | |
| Approach Delay, s/veh | | 6.8 | | | 8.5 | | | 31.3 | | | 24.1 | |
| Approach LOS | | A | | | A | | | C | | | C | |

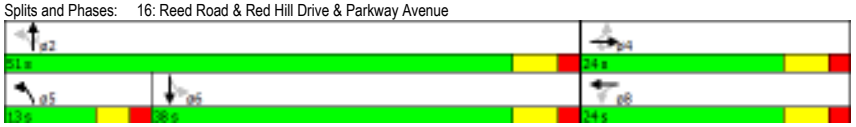
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 57.0 | | 23.0 | | 57.0 | | 23.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 18.0 | | 51.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 11.6 | | 3.8 | | 74.5 | | 18.4 |
| Green Ext Time (p_c), s | | 11.6 | | 1.8 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 37 | 120 | 306 | 37 | 43 | 10 | 324 | 415 | 64 | 5 | 606 | 44 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 287 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.6 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | | 13.0 | 51.0 | 51.0 | 38.0 | 38.0 | |
| Total Split (%) | 32.0% | 32.0% | 32.0% | 32.0% | 32.0% | | 17.3% | 68.0% | 68.0% | 50.7% | 50.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 71.2 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 37 | 120 | 306 | 37 | 43 | 10 | 324 | 415 | 64 | 5 | 606 | 44 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1751 | 1729 | 1836 | 1794 | 1836 | 1713 | 1764 | 1680 | 1836 | 1905 | 1836 |
| Adj Flow Rate, veh/h | 39 | 126 | 260 | 39 | 45 | 10 | 341 | 437 | 61 | 5 | 638 | 42 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 123 | 330 | 341 | 151 | 155 | 27 | 481 | 1093 | 885 | 55 | 755 | 47 |
| Arrive On Green | 0.22 | 0.23 | 0.23 | 0.22 | 0.23 | 0.22 | 0.13 | 0.62 | 0.62 | 0.41 | 0.43 | 0.41 |
| Sat Flow, veh/h | 245 | 1416 | 1464 | 337 | 687 | 122 | 1631 | 1764 | 1428 | 3 | 1762 | 115 |
| Grp Volume(v), veh/h | 165 | 0 | 260 | 94 | 0 | 0 | 341 | 437 | 61 | 685 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1661 | 0 | 1464 | 1146 | 0 | 0 | 1631 | 1764 | 1428 | 1881 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 11.2 | 0.5 | 0.0 | 0.0 | 7.2 | 8.4 | 1.1 | 1.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.4 | 0.0 | 11.2 | 5.9 | 0.0 | 0.0 | 7.2 | 8.4 | 1.1 | 22.5 | 0.0 | 0.0 |
| Prop In Lane | 0.24 | | 1.00 | 0.41 | | 0.11 | 1.00 | | 1.00 | 0.01 | | 0.06 |
| Lane Grp Cap(c), veh/h | 428 | 0 | 341 | 317 | 0 | 0 | 481 | 1093 | 885 | 829 | 0 | 0 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.76 | 0.30 | 0.00 | 0.00 | 0.71 | 0.40 | 0.07 | 0.83 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 508 | 0 | 414 | 390 | 0 | 0 | 488 | 1207 | 977 | 948 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.1 | 0.0 | 24.4 | 21.5 | 0.0 | 0.0 | 8.5 | 6.5 | 5.1 | 17.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 6.7 | 0.5 | 0.0 | 0.0 | 4.6 | 0.2 | 0.0 | 5.4 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 0.0 | 9.2 | 2.8 | 0.0 | 0.0 | 6.8 | 7.4 | 0.8 | 19.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 22.7 | 0.0 | 32.1 | 22.0 | 0.0 | 0.0 | 13.1 | 6.8 | 5.2 | 23.4 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | B | A | A | C | | |
| Approach Vol, veh/h | | 425 | | | 94 | | | 839 | | | 685 | |
| Approach Delay, s/veh | | 28.5 | | | 22.0 | | | 9.2 | | | 23.4 | |
| Approach LOS | | C | | | C | | | A | | | C | |

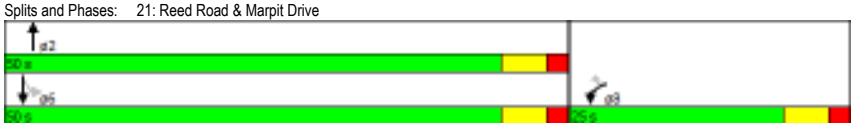
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.7 | | 20.6 | 13.0 | 33.7 | | 20.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 45.0 | | 18.0 | 8.0 | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 10.9 | | 13.7 | 9.7 | 24.5 | | 7.9 |
| Green Ext Time (p_c), s | | 5.6 | | 0.9 | 0.0 | 3.2 | | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.6 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 299 | 87 | 422 | 119 | 40 | 799 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 1% | 15% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 25.0 | 25.0 | 50.0 | | 50.0 | 50.0 |
| Total Split (%) | 33.3% | 33.3% | 66.7% | | 66.7% | 66.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 62.5 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 299 | 87 | 422 | 119 | 40 | 799 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1731 | 1782 | 1769 | 1800 | 1565 | 1782 |
| Adj Flow Rate, veh/h | 315 | 85 | 444 | 117 | 42 | 841 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 4 | 1 | 2 | 2 | 15 | 1 |
| Cap, veh/h | 418 | 384 | 767 | 202 | 387 | 1012 |
| Arrive On Green | 0.25 | 0.25 | 0.57 | 0.55 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1648 | 1515 | 1350 | 356 | 710 | 1782 |
| Grp Volume(v), veh/h | 315 | 85 | 0 | 561 | 42 | 841 |
| Grp Sat Flow(s),veh/h/ln | 1648 | 1515 | 0 | 1706 | 710 | 1782 |
| Q Serve(g_s), s | 9.9 | 2.5 | 0.0 | 11.9 | 2.2 | 21.6 |
| Cycle Q Clear(g_c), s | 9.9 | 2.5 | 0.0 | 11.9 | 13.7 | 21.6 |
| Prop In Lane | 1.00 | 1.00 | | 0.21 | 1.00 | |
| Lane Grp Cap(c), veh/h | 418 | 384 | 0 | 969 | 387 | 1012 |
| V/C Ratio(X) | 0.75 | 0.22 | 0.00 | 0.58 | 0.11 | 0.83 |
| Avail Cap(c_a), veh/h | 588 | 540 | 0 | 1369 | 554 | 1431 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.3 | 16.5 | 0.0 | 7.9 | 12.0 | 9.9 |
| Incr Delay (d2), s/veh | 3.5 | 0.3 | 0.0 | 0.6 | 0.1 | 3.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.5 | 1.9 | 0.0 | 9.5 | 0.8 | 16.9 |
| LnGrp Delay(d),s/veh | 22.8 | 16.8 | 0.0 | 8.4 | 12.2 | 12.9 |
| LnGrp LOS | C | B | | A | B | B |
| Approach Vol, veh/h | 400 | | 561 | | | 883 |
| Approach Delay, s/veh | 21.5 | | 8.4 | | | 12.8 |
| Approach LOS | C | | A | | | B |

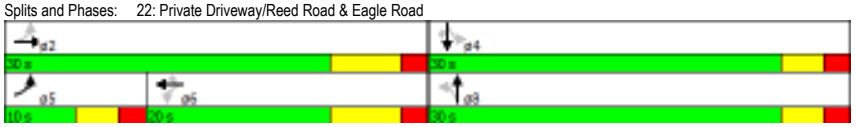
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.8 | | | | 36.8 | | 19.2 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 44.0 | | | | 44.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 13.9 | | | | 24.1 | | 12.4 |
| Green Ext Time (p_c), s | | 7.5 | | | | 6.7 | | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 135 | 372 | 0 | 1 | 277 | 407 | 0 | 0 | 0 | 632 | 1 | 424 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | | | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 10.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 30.0 | 30.0 | | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 16.7% | 50.0% | | 33.3% | 33.3% | 33.3% | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 135 | 372 | 0 | 1 | 277 | 407 | 0 | 0 | 0 | 632 | 1 | 424 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1844 |
| Adj Flow Rate, veh/h | 141 | 388 | 0 | 1 | 289 | 339 | 0 | 0 | 0 | 658 | 1 | 407 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cap, veh/h | 362 | 756 | 0 | 60 | 403 | 342 | 0 | 823 | 0 | 640 | 149 | 679 |
| Arrive On Green | 0.10 | 0.40 | 0.00 | 0.22 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.42 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1466 | 0 | 1900 | 0 | 1302 | 2 | 1567 |
| Grp Volume(v), veh/h | 141 | 388 | 0 | 290 | 0 | 339 | 0 | 0 | 0 | 659 | 0 | 407 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1304 | 0 | 1567 |
| Q Serve(g_s), s | 3.2 | 9.3 | 0.0 | 0.0 | 0.0 | 13.8 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 11.9 |
| Cycle Q Clear(g_c), s | 3.2 | 9.3 | 0.0 | 9.4 | 0.0 | 13.8 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 11.9 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 362 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 671 | 0 | 679 |
| V/C Ratio(X) | 0.39 | 0.51 | 0.00 | 0.67 | 0.00 | 0.99 | 0.00 | 0.00 | 0.00 | 0.98 | 0.00 | 0.60 |
| Avail Cap(c_a), veh/h | 366 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 663 | 0 | 679 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.3 | 13.6 | 0.0 | 21.3 | 0.0 | 23.0 | 0.0 | 0.0 | 0.0 | 19.5 | 0.0 | 13.0 |
| Incr Delay (d2), s/veh | 0.7 | 1.0 | 0.0 | 4.7 | 0.0 | 46.1 | 0.0 | 0.0 | 0.0 | 30.5 | 0.0 | 1.5 |
| Initial Q Delay(d3),s/veh | 0.4 | 0.0 | 0.0 | 0.1 | 0.0 | 16.9 | 0.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.0 | 8.7 | 0.0 | 9.0 | 0.0 | 16.8 | 0.0 | 0.0 | 0.0 | 24.2 | 0.0 | 9.2 |
| LnGrp Delay(d),s/veh | 15.3 | 14.6 | 0.0 | 26.1 | 0.0 | 86.1 | 0.0 | 0.0 | 0.0 | 53.6 | 0.0 | 14.5 |
| LnGrp LOS | B | B | | C | | F | | | | D | | B |
| Approach Vol, veh/h | | 529 | | | 629 | | | 0 | | | 1066 | |
| Approach Delay, s/veh | | 14.8 | | | 58.4 | | | 0.0 | | | 38.6 | |
| Approach LOS | | B | | | E | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.0 | | 30.0 | 10.0 | 20.0 | | 30.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 23.0 | | 25.0 | 5.0 | 13.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 11.8 | | 27.0 | 5.7 | 16.3 | | 0.0 |
| Green Ext Time (p_c), s | | 5.3 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 38.6 |
| HCM 2010 LOS | | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 16 | 49 | 47 | 1381 | 2276 | 107 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 501 | 187 | |
| Travel Time (s) | 28.2 | | | 8.5 | 3.2 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 45.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 16 | 49 | 47 | 1381 | 2276 | 107 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 17 | 51 | 49 | 1439 | 2371 | 111 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3244 | 1241 | 2482 | 0 | - | 0 |
| Stage 1 | 2427 | - | - | - | - | - |
| Stage 2 | 817 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 4 | *245 | 216 | - | - | - |
| Stage 1 | *200 | - | - | - | - | - |
| Stage 2 | *645 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 3 | *245 | 216 | - | - | - |
| Mov Cap-2 Maneuver | *~ 3 | - | - | - | - | - |
| Stage 1 | *200 | - | - | - | - | - |
| Stage 2 | *498 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 2710.7 | 0.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 216 | - | 12 | - | - |
| HCM Lane V/C Ratio | 0.227 | - | 5.642 | - | - |
| HCM Control Delay (s) | 26.5 | | $ 2710.7 | - | - |
| HCM Lane LOS | D | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | 9.6 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1398 | 5 | 3 | 2324 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 491 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.4 | |
| Confl. Peds. (#/hr) | | | | 2 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 13.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1398 | 5 | 3 | 2324 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1427 | 5 | 3 | 2371 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 3095 | 3814 | 1186 | 2625 | 3811 | 718 | 2371 | 0 | 0 | 1434 | 0 | 0 |
| Stage 1 | 2378 | 2378 | - | 1433 | 1433 | - | - | - | - | - | - | - |
| Stage 2 | 717 | 1436 | - | 1192 | 2378 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.5 | 7.2 | 7.8 | 5.9 | 7 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *2 | *4 | *124 | *~ 10 | *7 | *575 | *150 | - | - | *696 | - | - |
| Stage 1 | *129 | *90 | - | *596 | *417 | - | - | - | - | - | - | - |
| Stage 2 | *596 | *417 | - | *129 | *90 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *2 | *4 | *124 | *~ 10 | *7 | *574 | *150 | - | - | *696 | - | - |
| Mov Cap-2 Maneuver | *2 | *4 | - | *~ 10 | *7 | - | - | - | - | - | - | - |
| Stage 1 | *128 | *90 | - | *591 | *414 | - | - | - | - | - | - | - |
| Stage 2 | *569 | *414 | - | *125 | *90 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 684.6 | $ 1067.9 | 0 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 150 | - | - | 8 | 19 | * 696 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.51 | 2.417 | 0.004 | - | - |
| HCM Control Delay (s) | 29.2 | - | - | $ 684.6 | $ 1067.9 | 10.2 | - | - |
| HCM Lane LOS | D | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1 | 6.2 | 0 | - | - |

| Notes |
|---|

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 9 | 0 | 1435 | 2215 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 238 | | | 870 | 546 | |
| Travel Time (s) | 6.5 | | | 14.8 | 9.3 | |
| Confl. Peds. (#/hr) | 2 | 2 | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 9 | 0 | 1435 | 2215 | 0 |
| Conflicting Peds, #/hr | 2 | 2 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 1 | 9 | 0 | 1495 | 2307 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3056 | 1156 | 2309 | 0 | - | 0 |
| Stage 1 | 2309 | - | - | - | - | - |
| Stage 2 | 747 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *5 | *182 | *221 | - | - | - |
| Stage 1 | *189 | - | - | - | - | - |
| Stage 2 | *596 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *5 | *182 | *221 | - | - | - |
| Mov Cap-2 Maneuver | *133 | - | - | - | - | - |
| Stage 1 | *189 | - | - | - | - | - |
| Stage 2 | *595 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 26.5 | 0 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 221 | - | 133 | 182 | - | - |
| HCM Lane V/C Ratio | - | - | 0.008 | 0.052 | - | - |
| HCM Control Delay (s) | 0 | - | 32.3 | 25.9 | - | - |
| HCM Lane LOS | A | - | D | D | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0.2 | - | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 26 | 1369 | 3 | 72 | 2355 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 1369 | 3 | 72 | 2355 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 27 | 1411 | 3 | 74 | 2428 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2775 | 707 | 0 | 0 | 1414 | 0 |
| Stage 1 | 1413 | - | - | - | - | - |
| Stage 2 | 1362 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.6 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *11 | *622 | - | - | *752 | - |
| Stage 1 | *645 | - | - | - | - | - |
| Stage 2 | *129 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *11 | *622 | - | - | *752 | - |
| Mov Cap-2 Maneuver | *11 | - | - | - | - | - |
| Stage 1 | *645 | - | - | - | - | - |
| Stage 2 | *129 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 622 | * 752 | - |
| HCM Lane V/C Ratio | - | - | 0.043 | 0.099 | - |
| HCM Control Delay (s) | - | - | 11 | 10.3 | 0 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.3 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 121 | 103 | 26 | 568 | 650 | 276 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 15.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 121 | 103 | 26 | 568 | 650 | 276 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 1 | 0 | 1 | 0 | 1 | 1 |
| Mvmt Flow | 123 | 105 | 27 | 580 | 663 | 282 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1437 | 804 | 945 | 0 | - | 0 |
| Stage 1 | 804 | - | - | - | - | - |
| Stage 2 | 633 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *159 | 532 | 439 | - | - | - |
| Stage 1 | *552 | - | - | - | - | - |
| Stage 2 | *653 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *145 | 532 | 439 | - | - | - |
| Mov Cap-2 Maneuver | *145 | - | - | - | - | - |
| Stage 1 | *552 | - | - | - | - | - |
| Stage 2 | *594 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 121.4 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 439 | - | 218 | - | - |
| HCM Lane V/C Ratio | 0.06 | - | 1.048 | - | - |
| HCM Control Delay (s) | 13.7 | 0 | 121.4 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 9.9 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 114 | 418 | 358 | 25 | 11 | 54 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 413 | 339 | | 601 | |
| Travel Time (s) | | 8.0 | 6.6 | | 16.4 | |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 0% | 0% |
| Parking (#/hr) | | | | 0 | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 114 | 418 | 358 | 25 | 11 | 54 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 130 | 475 | 407 | 28 | 12 | 61 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 435 | 0 | - | 0 | 918 | 421 |
| Stage 1 | - | - | - | - | 421 | - |
| Stage 2 | - | - | - | - | 497 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1079 | - | - | - | 266 | 684 |
| Stage 1 | - | - | - | - | 722 | - |
| Stage 2 | - | - | - | - | 615 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1079 | - | - | - | 222 | 684 |
| Mov Cap-2 Maneuver | - | - | - | - | 222 | - |
| Stage 1 | - | - | - | - | 722 | - |
| Stage 2 | - | - | - | - | 514 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.3 | 0 | 13.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1079 | - | - | - | 506 |
| HCM Lane V/C Ratio | 0.12 | - | - | - | 0.146 |
| HCM Control Delay (s) | 8.8 | 0.5 | - | - | 13.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.5 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 25 | 411 | 387 | 35 | 77 | 49 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 339 | 275 | | 216 | |
| Travel Time (s) | | 6.6 | 5.4 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 3 | 3 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 3% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 25 | 411 | 387 | 35 | 77 | 49 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 3 | 3 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 4 | 3 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 28 | 462 | 435 | 39 | 87 | 55 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 477 | 0 | - | 0 | 744 | 457 |
| Stage 1 | - | - | - | - | 457 | - |
| Stage 2 | - | - | - | - | 287 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1044 | - | - | - | 359 | 650 |
| Stage 1 | - | - | - | - | 687 | - |
| Stage 2 | - | - | - | - | 841 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1044 | - | - | - | 344 | 648 |
| Mov Cap-2 Maneuver | - | - | - | - | 344 | - |
| Stage 1 | - | - | - | - | 685 | - |
| Stage 2 | - | - | - | - | 809 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 17.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1044 | - | - | - | 421 |
| HCM Lane V/C Ratio | 0.027 | - | - | - | 0.336 |
| HCM Control Delay (s) | 8.5 | 0.1 | - | - | 17.8 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.5 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 45 | 301 | 506 | 30 | 187 | 767 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 11.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 45 | 301 | 506 | 30 | 187 | 767 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 49 | 327 | 550 | 33 | 203 | 834 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1790 | 550 | 0 | 0 | 550 | 0 |
| Stage 1 | 550 | - | - | - | - | - |
| Stage 2 | 1240 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 116 | 583 | - | - | 776 | - |
| Stage 1 | 695 | - | - | - | - | - |
| Stage 2 | 342 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 60 | 583 | - | - | 776 | - |
| Mov Cap-2 Maneuver | 144 | - | - | - | - | - |
| Stage 1 | 695 | - | - | - | - | - |
| Stage 2 | 175 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 54.7 | 0 | 2.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 417 | 776 | - |
| HCM Lane V/C Ratio | - | - | 0.902 | 0.262 | - |
| HCM Control Delay (s) | - | - | 54.7 | 11.3 | 0 |
| HCM Lane LOS | - | - | F | B | A |
| HCM 95th %tile Q(veh) | - | - | 9.6 | 1 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 14 | 460 | 362 | 25 | 80 | 52 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 14 | 460 | 362 | 25 | 80 | 52 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 1 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 15 | 489 | 385 | 27 | 85 | 55 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 413 | 0 | - | 0 | 918 | 207 |
| Stage 1 | - | - | - | - | 399 | - |
| Stage 2 | - | - | - | - | 519 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.1 | 7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.9 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1097 | - | - | - | 294 | 901 |
| Stage 1 | - | - | - | - | 744 | - |
| Stage 2 | - | - | - | - | 668 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1097 | - | - | - | 289 | 900 |
| Mov Cap-2 Maneuver | - | - | - | - | 289 | - |
| Stage 1 | - | - | - | - | 743 | - |
| Stage 2 | - | - | - | - | 658 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 19.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1097 | - | - | - | 395 |
| HCM Lane V/C Ratio | 0.014 | - | - | - | 0.356 |
| HCM Control Delay (s) | 8.3 | - | - | - | 19.1 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 107 | 69 | 122 | 19 | 30 | 18 | 65 | 373 | 4 | 23 | 482 | 96 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 193 | | | 186 | | | 386 | | | 598 | |
| Travel Time (s) | | 5.3 | | | 5.1 | | | 10.5 | | | 16.3 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 40.6 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 107 | 69 | 122 | 0 | 19 | 30 | 18 | 0 | 65 | 373 | 4 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 25 |
| Mvmt Flow | 0 | 114 | 73 | 130 | 0 | 20 | 32 | 19 | 0 | 69 | 397 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.5 | 12.7 | 33.6 |
| HCM LOS | B | B | D |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 15% | 61% | 0% | 28% | 4% |
| Vol Thru, % | 84% | 39% | 0% | 45% | 80% |
| Vol Right, % | 1% | 0% | 100% | 27% | 16% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 442 | 176 | 122 | 67 | 601 |
| LT Vol | 65 | 107 | 0 | 19 | 23 |
| Through Vol | 373 | 69 | 0 | 30 | 482 |
| RT Vol | 4 | 0 | 122 | 18 | 96 |
| Lane Flow Rate | 470 | 187 | 130 | 71 | 639 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.832 | 0.413 | 0.25 | 0.161 | 1 |
| Departure Headway (Hd) | 6.369 | 7.941 | 6.937 | 8.114 | 6.177 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 564 | 451 | 515 | 445 | 595 |
| Service Time | 4.443 | 5.714 | 4.71 | 6.114 | 4.184 |
| HCM Lane V/C Ratio | 0.833 | 0.415 | 0.252 | 0.16 | 1.074 |
| HCM Control Delay | 33.6 | 16.2 | 12 | 12.7 | 61.9 |
| HCM Lane LOS | D | C | B | B | F |
| HCM 95th-tile Q | 8.6 | 2 | 1 | 0.6 | 14.8 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 23 | 482 | 96 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 24 | 513 | 102 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 61.9 |
| HCM LOS | F |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 348 | 171 | 358 | 323 | 41 | 94 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1472 | | | 560 | 559 | |
| Travel Time (s) | 33.5 | | | 12.7 | 12.7 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 17.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 348 | 171 | 358 | 323 | 41 | 94 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Mvmt Flow | 355 | 174 | 365 | 330 | 42 | 96 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 355 | 0 | 1415 | 355 |
| Stage 1 | - | - | - | - | 355 | - |
| Stage 2 | - | - | - | - | 1060 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 907 | - | 64 | 649 |
| Stage 1 | - | - | - | - | 642 | - |
| Stage 2 | - | - | - | - | 182 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 907 | - | ~ 32 | 649 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 32 | - |
| Stage 1 | - | - | - | - | 642 | - |
| Stage 2 | - | - | - | - | 92 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 6.1 | 145.6 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 32 | 649 | - | - | 907 | - |
| HCM Lane V/C Ratio | 1.307 | 0.148 | - | - | 0.403 | - |
| HCM Control Delay (s) | $ 453.1 | 11.5 | - | - | 11.6 | 0 |
| HCM Lane LOS | F | B | - | - | B | A |
| HCM 95th %tile Q(veh) | 4.6 | 0.5 | - | - | 2 | - |

Notes

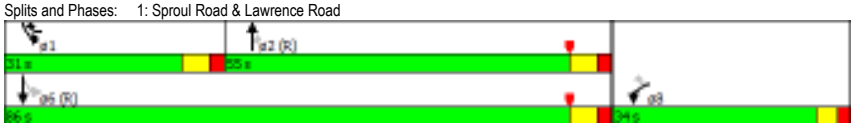
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 365 | 542 | 1223 | 426 | 380 | 1067 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 34.0 | 31.0 | 55.0 | 55.0 | 31.0 | 86.0 |
| Total Split (%) | 28.3% | 25.8% | 45.8% | 45.8% | 25.8% | 71.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 365 | 542 | 1223 | 426 | 380 | 1067 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 372 | 436 | 1248 | 367 | 388 | 1089 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 416 | 667 | 1458 | 680 | 440 | 2425 |
| Arrive On Green | 0.25 | 0.25 | 0.14 | 0.14 | 0.20 | 0.68 |
| Sat Flow, veh/h | 1663 | 1485 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 372 | 436 | 1248 | 367 | 388 | 1089 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 25.9 | 27.7 | 43.8 | 26.0 | 19.5 | 17.0 |
| Cycle Q Clear(g_c), s | 25.9 | 27.7 | 43.8 | 26.0 | 19.5 | 17.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 416 | 667 | 1458 | 680 | 440 | 2425 |
| V/C Ratio(X) | 0.89 | 0.65 | 0.86 | 0.54 | 0.88 | 0.45 |
| Avail Cap(c_a), veh/h | 416 | 661 | 1462 | 687 | 473 | 2425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 0.33 | 0.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.57 | 0.57 | 0.49 | 0.49 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.5 | 25.8 | 47.8 | 40.3 | 36.8 | 9.1 |
| Incr Delay (d2), s/veh | 13.6 | 1.4 | 3.4 | 1.5 | 16.8 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 7.9 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.0 | 15.7 | 26.4 | 15.5 | 22.6 | 13.3 |
| LnGrp Delay(d),s/veh | 57.1 | 27.1 | 51.3 | 41.8 | 61.6 | 9.7 |
| LnGrp LOS | E | C | D | D | E | A |
| Approach Vol, veh/h | 808 | | 1615 | | | 1477 |
| Approach Delay, s/veh | 40.9 | | 49.1 | | | 23.3 |
| Approach LOS | D | | D | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.4 | 57.6 | | | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 25.0 | 49.0 | | | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 22.0 | 46.3 | | | | 19.5 | | 30.2 |
| Green Ext Time (p_c), s | 0.5 | 2.4 | | | | 22.7 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 37.7
HCM 2010 LOS D

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 16 | 242 | 13 | 240 | 19 | 1363 | 176 | 180 | 1288 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 46.0 | 46.0 | | 46.0 | 46.0 | 22.0 | 10.0 | 52.0 | 52.0 | 22.0 | 64.0 | |
| Total Split (%) | 38.3% | 38.3% | | 38.3% | 38.3% | 18.3% | 8.3% | 43.3% | 43.3% | 18.3% | 53.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 16 | 242 | 13 | 240 | 19 | 1363 | 176 | 180 | 1288 | 12 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1794 | 1800 | 1764 | 1764 | 1764 | 1764 | 1729 | 1816 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 10 | 257 | 14 | 211 | 20 | 1450 | 0 | 191 | 1370 | 12 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cap, veh/h | 42 | 34 | 9 | 300 | 13 | 690 | 135 | 1287 | 653 | 247 | 1807 | 16 |
| Arrive On Green | 0.33 | 0.34 | 0.33 | 0.33 | 0.34 | 0.34 | 0.02 | 0.44 | 0.00 | 0.04 | 0.17 | 0.17 |
| Sat Flow, veh/h | 0 | 100 | 26 | 706 | 38 | 1499 | 1680 | 3286 | 1544 | 1714 | 3474 | 30 |
| Grp Volume(v), veh/h | 49 | 0 | 0 | 271 | 0 | 211 | 20 | 1450 | 0 | 191 | 674 | 708 |
| Grp Sat Flow(s),veh/h/ln | 126 | 0 | 0 | 745 | 0 | 1499 | 1680 | 1643 | 1544 | 1714 | 1710 | 1795 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.8 | 0.8 | 52.2 | 0.0 | 9.0 | 45.1 | 45.1 |
| Cycle Q Clear(g_c), s | 40.0 | 0.0 | 0.0 | 40.0 | 0.0 | 10.8 | 0.8 | 52.2 | 0.0 | 9.0 | 45.1 | 45.1 |
| Prop In Lane | 0.41 | | 0.20 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 84 | 0 | 0 | 307 | 0 | 690 | 135 | 1287 | 653 | 247 | 889 | 933 |
| V/C Ratio(X) | 0.58 | 0.00 | 0.00 | 0.88 | 0.00 | 0.31 | 0.15 | 1.13 | 0.00 | 0.77 | 0.76 | 0.76 |
| Avail Cap(c_a), veh/h | 84 | 0 | 0 | 307 | 0 | 672 | 197 | 1430 | 672 | 317 | 889 | 933 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.65 | 0.65 | 0.00 | 0.80 | 0.80 | 0.80 |
| Uniform Delay (d), s/veh | 32.8 | 0.0 | 0.0 | 41.3 | 0.0 | 20.4 | 25.2 | 36.5 | 0.0 | 38.6 | 42.7 | 42.7 |
| Incr Delay (d2), s/veh | 9.8 | 0.0 | 0.0 | 24.7 | 0.0 | 0.2 | 0.3 | 64.2 | 0.0 | 7.0 | 4.9 | 4.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 | 0.0 | 2.1 | 0.1 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.0 | 0.0 | 13.4 | 0.0 | 7.9 | 0.7 | 60.9 | 0.0 | 11.1 | 29.8 | 31.0 |
| LnGrp Delay(d),s/veh | 42.6 | 0.0 | 0.0 | 66.0 | 0.0 | 20.6 | 25.5 | 110.5 | 0.0 | 47.6 | 47.7 | 47.4 |
| LnGrp LOS | D | | | E | | C | C | F | | D | D | D |
| Approach Vol, veh/h | | 49 | | | 482 | | | 1470 | | | 1573 | |
| Approach Delay, s/veh | | 42.6 | | | 46.2 | | | 109.4 | | | 47.6 | |
| Approach LOS | | D | | | D | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 16.8 | 57.2 | | 46.0 | 6.6 | 67.4 | | 46.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | 46.0 | | 40.0 | 5.0 | 58.0 | | 40.0 |
| Max Q Clear Time (g_c+I1), s | 11.5 | 54.7 | | 42.0 | 3.3 | 47.6 | | 42.0 |
| Green Ext Time (p_c), s | 0.3 | 0.0 | | 0.0 | 0.0 | 8.2 | | 0.0 |

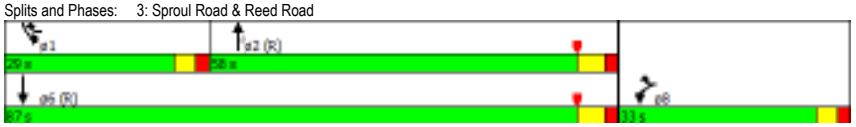
**Intersection Summary**

HCM 2010 Ctrl Delay 72.7
HCM 2010 LOS E

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 254 | 142 | 1237 | 280 | 272 | 1311 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 417 | | 187 | | | 884 |
| Travel Time (s) | 8.1 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 2% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 33.0 | | 58.0 | 58.0 | 29.0 | 87.0 |
| Total Split (%) | 27.5% | | 48.3% | 48.3% | 24.2% | 72.5% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 254 | 142 | 1237 | 280 | 272 | 1311 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1729 | 1836 | 1818 |
| Adj Flow Rate, veh/h | 259 | 145 | 1262 | 85 | 278 | 1338 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 2 | 0 | 1 |
| Cap, veh/h | 314 | 570 | 1746 | 774 | 322 | 2568 |
| Arrive On Green | 0.18 | 0.18 | 0.53 | 0.53 | 0.24 | 0.99 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1470 | 1749 | 3545 |
| Grp Volume(v), veh/h | 259 | 145 | 1262 | 85 | 278 | 1338 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1470 | 1749 | 1727 |
| Q Serve(g_s), s | 17.3 | 7.8 | 34.9 | 3.5 | 18.3 | 1.1 |
| Cycle Q Clear(g_c), s | 17.3 | 7.8 | 34.9 | 3.5 | 18.3 | 1.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 314 | 570 | 1746 | 774 | 322 | 2568 |
| V/C Ratio(X) | 0.82 | 0.25 | 0.72 | 0.11 | 0.86 | 0.52 |
| Avail Cap(c_a), veh/h | 418 | 664 | 1746 | 774 | 364 | 2568 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.71 | 0.71 |
| Uniform Delay (d), s/veh | 47.3 | 26.6 | 21.7 | 14.3 | 43.9 | 0.2 |
| Incr Delay (d2), s/veh | 9.7 | 0.2 | 2.6 | 0.3 | 13.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.1 | 6.1 | 23.3 | 2.7 | 14.4 | 0.9 |
| LnGrp Delay(d),s/veh | 56.9 | 26.9 | 24.4 | 14.6 | 56.9 | 0.7 |
| LnGrp LOS | E | C | C | B | E | A |
| Approach Vol, veh/h | 404 | | 1347 | | | 1616 |
| Approach Delay, s/veh | 46.1 | | 23.7 | | | 10.4 |
| Approach LOS | D | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 26.1 | 68.2 | | | | 94.2 | | 25.8 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 24.0 | 52.0 | | | | 81.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | 20.8 | 37.4 | | | | 3.6 | | 19.8 |
| Green Ext Time (p_c), s | 0.3 | 10.6 | | | | 24.5 | | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.0 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 474 | 976 | 3 | 474 | 1014 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 489 | 1009 | 0 | 489 | 1045 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 33.0 | 37.0 | | 33.0 | 70.0 |
| Total Split (%) | | 47.1% | 52.9% | | 47.1% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 24.0 | 31.0 | | 24.0 | 70.0 |
| Actuated g/C Ratio | | 0.34 | 0.44 | | 0.34 | 1.00 |
| v/c Ratio | | 0.55 | 0.65 | | 0.87 | 0.61 |
| Control Delay | | 21.4 | 26.6 | | 40.2 | 1.7 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 21.4 | 26.6 | | 40.2 | 1.7 |
| LOS | | C | C | | D | A |
| Approach Delay | | | 26.6 | | | 13.9 |
| Approach LOS | | | C | | | B |
| Queue Length 50th (ft) | | 127 | 233 | | 189 | 0 |
| Queue Length 95th (ft) | | m163 | m201 | | #351 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 920 | 1552 | | 584 | 1706 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



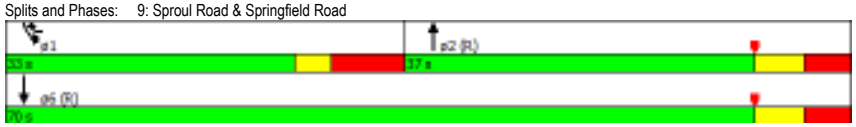


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.53 | 0.65 | | 0.84 | 0.61 |

**Intersection Summary**

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 6 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 19.4 — Intersection LOS: B
Intersection Capacity Utilization 68.8% — ICU Level of Service C
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 163 | 103 | 55 | 179 | 139 | 10 | 67 | 1258 | 71 | 3 | 946 | 112 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 42.9% | 42.9% | | 42.9% | 42.9% | | 57.1% | 57.1% | | 57.1% | 57.1% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 13 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 80 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 163 | 103 | 55 | 179 | 139 | 10 | 67 | 1258 | 71 | 3 | 946 | 112 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1878 | 1818 | 1782 | 1746 | 1782 | 1773 | 1750 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 173 | 110 | 46 | 190 | 148 | 4 | 71 | 1338 | 71 | 3 | 1006 | 105 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 291 | 167 | 62 | 290 | 190 | 5 | 96 | 1417 | 77 | 52 | 1648 | 172 |
| Arrive On Green | 0.30 | 0.32 | 0.30 | 0.30 | 0.32 | 0.30 | 0.53 | 0.54 | 0.53 | 0.53 | 0.54 | 0.53 |
| Sat Flow, veh/h | 669 | 526 | 194 | 663 | 597 | 15 | 78 | 2612 | 146 | 1 | 3071 | 320 |
| Grp Volume(v), veh/h | 329 | 0 | 0 | 342 | 0 | 0 | 721 | 0 | 759 | 592 | 0 | 522 |
| Grp Sat Flow(s),veh/h/ln | 1390 | 0 | 0 | 1275 | 0 | 0 | 1269 | 0 | 1567 | 1803 | 0 | 1589 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 21.0 | 0.0 | 30.3 | 0.0 | 0.0 | 15.8 |
| Cycle Q Clear(g_c), s | 15.1 | 0.0 | 0.0 | 18.1 | 0.0 | 0.0 | 36.8 | 0.0 | 30.3 | 15.9 | 0.0 | 15.8 |
| Prop In Lane | 0.53 | | 0.14 | 0.56 | | 0.01 | 0.10 | | 0.09 | 0.01 | | 0.20 |
| Lane Grp Cap(c), veh/h | 500 | 0 | 0 | 467 | 0 | 0 | 727 | 0 | 846 | 990 | 0 | 858 |
| V/C Ratio(X) | 0.66 | 0.00 | 0.00 | 0.73 | 0.00 | 0.00 | 0.99 | 0.00 | 0.90 | 0.60 | 0.00 | 0.61 |
| Avail Cap(c_a), veh/h | 557 | 0 | 0 | 520 | 0 | 0 | 723 | 0 | 845 | 999 | 0 | 858 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.6 | 0.0 | 0.0 | 22.7 | 0.0 | 0.0 | 17.2 | 0.0 | 14.5 | 11.1 | 0.0 | 11.1 |
| Incr Delay (d2), s/veh | 2.4 | 0.0 | 0.0 | 4.7 | 0.0 | 0.0 | 31.3 | 0.0 | 14.3 | 2.7 | 0.0 | 3.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.3 | 0.0 | 0.0 | 11.3 | 0.0 | 0.0 | 28.1 | 0.0 | 23.0 | 13.7 | 0.0 | 12.1 |
| LnGrp Delay(d),s/veh | 24.0 | 0.0 | 0.0 | 27.4 | 0.0 | 0.0 | 50.1 | 0.0 | 28.9 | 13.8 | 0.0 | 14.3 |
| LnGrp LOS | C | | | C | | | D | | C | B | | B |
| Approach Vol, veh/h | | 329 | | | 342 | | | 1480 | | | 1114 | |
| Approach Delay, s/veh | | 24.0 | | | 27.4 | | | 39.2 | | | 14.0 | |
| Approach LOS | | C | | | C | | | D | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.8 | | 27.2 | | 42.8 | | 27.2 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 24.0 | | 34.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 38.8 | | 17.1 | | 17.9 | | 20.1 |
| Green Ext Time (p_c), s | | 0.0 | | 1.7 | | 10.7 | | 1.1 |

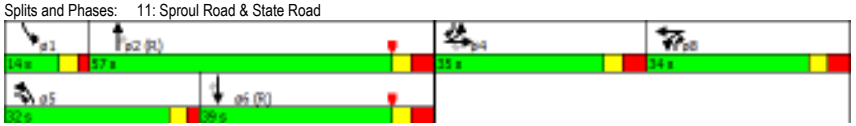
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.8 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 482 | 59 | 467 | 276 | 246 | 52 | 393 | 898 | 323 | 29 | 726 | 452 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 44% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 35.0 | 35.0 | 32.0 | 34.0 | 34.0 | | 32.0 | 57.0 | 34.0 | 14.0 | 39.0 | 35.0 |
| Total Split (%) | 25.0% | 25.0% | 22.9% | 24.3% | 24.3% | | 22.9% | 40.7% | 24.3% | 10.0% | 27.9% | 25.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 482 | 59 | 467 | 276 | 246 | 52 | 393 | 898 | 323 | 29 | 726 | 452 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1828 | 1826 | 1872 | 1858 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 551 | 0 | 0 | 275 | 281 | 0 | 414 | 945 | 0 | 31 | 764 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 659 | 0 | 609 | 326 | 341 | 0 | 339 | 1459 | 936 | 55 | 891 | 690 |
| Arrive On Green | 0.18 | 0.00 | 0.00 | 0.18 | 0.18 | 0.00 | 0.20 | 0.45 | 0.00 | 0.03 | 0.28 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 551 | 0 | 0 | 275 | 281 | 0 | 414 | 945 | 0 | 31 | 764 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 21.3 | 0.0 | 0.0 | 20.9 | 20.5 | 0.0 | 28.0 | 30.0 | 0.0 | 2.5 | 29.4 | 0.0 |
| Cycle Q Clear(g_c), s | 21.3 | 0.0 | 0.0 | 20.9 | 20.5 | 0.0 | 28.0 | 30.0 | 0.0 | 2.5 | 29.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 659 | 0 | 609 | 326 | 341 | 0 | 339 | 1459 | 936 | 55 | 891 | 690 |
| V/C Ratio(X) | 0.84 | 0.00 | 0.00 | 0.84 | 0.82 | 0.00 | 1.22 | 0.65 | 0.00 | 0.56 | 0.86 | 0.00 |
| Avail Cap(c_a), veh/h | 728 | 0 | 632 | 357 | 372 | 0 | 339 | 1513 | 950 | 122 | 945 | 701 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 55.3 | 0.0 | 0.0 | 55.7 | 55.6 | 0.0 | 56.0 | 31.5 | 0.0 | 66.8 | 49.1 | 0.0 |
| Incr Delay (d2), s/veh | 7.8 | 0.0 | 0.0 | 15.6 | 13.1 | 0.0 | 122.6 | 2.2 | 0.0 | 8.6 | 10.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 5.0 | 0.0 | 0.0 | 3.9 | 5.6 | 0.0 | 17.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 17.7 | 0.0 | 0.0 | 18.3 | 18.8 | 0.0 | 46.4 | 21.2 | 0.0 | 2.4 | 21.8 | 0.0 |
| LnGrp Delay(d),s/veh | 68.1 | 0.0 | 0.0 | 75.3 | 74.3 | 0.0 | 195.7 | 33.7 | 0.0 | 75.4 | 59.6 | 0.0 |
| LnGrp LOS | E | | | E | E | | F | C | | E | E | |
| Approach Vol, veh/h | | 551 | | | 556 | | | 1359 | | | 795 | |
| Approach Delay, s/veh | | 68.1 | | | 74.8 | | | 83.1 | | | 60.2 | |
| Approach LOS | | E | | | E | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.5 | 68.6 | | 31.7 | 32.0 | 45.1 | | 31.2 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 9.0 | 50.0 | | 28.0 | 27.0 | 32.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 5.0 | 32.5 | | 23.8 | 30.5 | 31.9 | | 23.4 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | | 1.0 | 0.0 | 0.1 | | 0.7 |

**Intersection Summary**

HCM 2010 Ctrl Delay 73.6
HCM 2010 LOS E

**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 233 | 1408 | 460 | 41 | 1279 | 133 | 392 | 358 | 44 | 159 | 323 | 38 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 12.0 | 56.0 | 56.0 | 11.0 | 55.0 | | 21.0 | 42.0 | | 11.0 | 32.0 | |
| Total Split (%) | 10.0% | 46.7% | 46.7% | 9.2% | 45.8% | | 17.5% | 35.0% | | 9.2% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 233 | 1408 | 460 | 41 | 1279 | 133 | 392 | 358 | 44 | 159 | 323 | 38 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1730 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 245 | 1482 | 0 | 43 | 1346 | 0 | 413 | 377 | 0 | 167 | 340 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 147 | 1475 | 662 | 120 | 1342 | 0 | 330 | 536 | 0 | 146 | 404 | 0 |
| Arrive On Green | 0.05 | 0.43 | 0.00 | 0.04 | 0.42 | 0.00 | 0.13 | 0.30 | 0.00 | 0.05 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3374 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 245 | 1482 | 0 | 43 | 1346 | 0 | 413 | 377 | 0 | 167 | 340 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 6.0 | 50.3 | 0.0 | 1.7 | 48.4 | 0.0 | 16.0 | 22.4 | 0.0 | 6.0 | 21.8 | 0.0 |
| Cycle Q Clear(g_c), s | 6.0 | 50.3 | 0.0 | 1.7 | 48.4 | 0.0 | 16.0 | 22.4 | 0.0 | 6.0 | 21.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 147 | 1475 | 662 | 120 | 1342 | 0 | 330 | 536 | 0 | 146 | 404 | 0 |
| V/C Ratio(X) | 1.66 | 1.00 | 0.00 | 0.36 | 1.00 | 0.00 | 1.25 | 0.70 | 0.00 | 1.14 | 0.84 | 0.00 |
| Avail Cap(c_a), veh/h | 153 | 1509 | 675 | 134 | 1374 | 0 | 319 | 552 | 0 | 255 | 407 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 29.3 | 34.6 | 0.0 | 29.0 | 35.5 | 0.0 | 34.1 | 37.5 | 0.0 | 42.3 | 44.6 | 0.0 |
| Incr Delay (d2), s/veh | 325.9 | 24.6 | 0.0 | 1.8 | 25.2 | 0.0 | 135.5 | 3.9 | 0.0 | 94.9 | 14.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 42.3 | 24.0 | 0.0 | 0.0 | 26.4 | 0.0 | 50.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 35.8 | 57.9 | 0.0 | 1.5 | 53.4 | 0.0 | 34.6 | 17.5 | 0.0 | 6.9 | 18.2 | 0.0 |
| LnGrp Delay(d),s/veh | 397.5 | 83.2 | 0.0 | 30.8 | 87.1 | 0.0 | 219.9 | 41.4 | 0.0 | 137.2 | 59.1 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | D | | F | E | |
| Approach Vol, veh/h | | 1727 | | | 1389 | | | 790 | | | 507 | |
| Approach Delay, s/veh | | 127.8 | | | 85.4 | | | 134.8 | | | 84.8 | |
| Approach LOS | | F | | | F | | | F | | | F | |

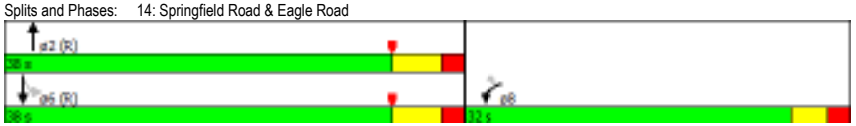
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.2 | 57.9 | 21.0 | 30.9 | 12.0 | 56.1 | 11.0 | 40.9 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 49.0 | 15.0 | 26.0 | 5.0 | 48.0 | 5.0 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 52.8 | 18.5 | 24.3 | 8.5 | 50.9 | 8.5 | 24.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 2.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 110.7 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 364 | 76 | 485 | 196 | 49 | 369 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 32.0 | 32.0 | 38.0 | | 38.0 | 38.0 |
| Total Split (%) | 45.7% | 45.7% | 54.3% | | 54.3% | 54.3% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 10 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 364 | 76 | 485 | 196 | 49 | 369 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1693 | 1773 | 1791 | 1809 | 1793 |
| Adj Flow Rate, veh/h | 396 | 32 | 527 | 208 | 53 | 401 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 486 | 402 | 717 | 283 | 105 | 724 |
| Arrive On Green | 0.28 | 0.28 | 0.59 | 0.58 | 0.58 | 0.59 |
| Sat Flow, veh/h | 1740 | 1439 | 1211 | 478 | 80 | 1223 |
| Grp Volume(v), veh/h | 396 | 32 | 0 | 735 | 454 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1439 | 0 | 1689 | 1303 | 0 |
| Q Serve(g_s), s | 14.9 | 1.1 | 0.0 | 22.1 | 3.6 | 0.0 |
| Cycle Q Clear(g_c), s | 14.9 | 1.1 | 0.0 | 22.1 | 25.7 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.28 | 0.12 | |
| Lane Grp Cap(c), veh/h | 486 | 402 | 0 | 1000 | 810 | 0 |
| V/C Ratio(X) | 0.82 | 0.08 | 0.00 | 0.73 | 0.56 | 0.00 |
| Avail Cap(c_a), veh/h | 696 | 576 | 0 | 1000 | 810 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.37 | 0.00 |
| Uniform Delay (d), s/veh | 23.5 | 18.6 | 0.0 | 10.4 | 8.6 | 0.0 |
| Incr Delay (d2), s/veh | 5.0 | 0.1 | 0.0 | 4.8 | 1.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.4 | 0.8 | 0.0 | 16.9 | 7.5 | 0.0 |
| LnGrp Delay(d),s/veh | 28.6 | 18.7 | 0.0 | 15.2 | 9.6 | 0.0 |
| LnGrp LOS | C | B | | B | A | |
| Approach Vol, veh/h | 428 | | 735 | | 454 | |
| Approach Delay, s/veh | 27.8 | | 15.2 | | 9.6 | |
| Approach LOS | C | | B | | A | |

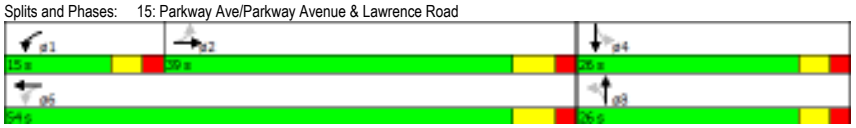
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.5 | | | | 46.5 | | 23.5 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | | | 32.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | | 24.1 | | | | 27.7 | | 17.4 |
| Green Ext Time (p_c), s | | 3.6 | | | | 2.3 | | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.0 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 624 | 134 | 184 | 676 | 9 | 209 | 26 | 300 | 6 | 14 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 604 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.5 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 39.0 | 39.0 | | 15.0 | 54.0 | | 26.0 | 26.0 | | 26.0 | 26.0 | |
| Total Split (%) | 48.8% | 48.8% | | 18.8% | 67.5% | | 32.5% | 32.5% | | 32.5% | 32.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 67.5 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 4 | 624 | 134 | 184 | 676 | 9 | 209 | 26 | 300 | 6 | 14 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1773 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1775 | 1827 |
| Adj Flow Rate, veh/h | 4 | 678 | 142 | 200 | 735 | 9 | 227 | 28 | 238 | 7 | 15 | 12 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 58 | 1558 | 322 | 88 | 948 | 14 | 413 | 46 | 393 | 106 | 202 | 131 |
| Arrive On Green | 0.56 | 0.57 | 0.56 | 0.56 | 0.57 | 0.56 | 0.29 | 0.29 | 0.27 | 0.27 | 0.29 | 0.27 |
| Sat Flow, veh/h | 3 | 2714 | 565 | 3 | 1654 | 25 | 1298 | 161 | 1370 | 135 | 702 | 457 |
| Grp Volume(v), veh/h | 444 | 0 | 380 | 366 | 0 | 578 | 227 | 0 | 266 | 34 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1769 | 0 | 1514 | 84 | 0 | 1598 | 1298 | 0 | 1531 | 1294 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 9.3 | 28.7 | 0.0 | 15.6 | 4.7 | 0.0 | 9.7 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.3 | 0.0 | 9.3 | 28.7 | 0.0 | 15.6 | 14.0 | 0.0 | 9.7 | 9.8 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.37 | 0.55 | | 0.02 | 1.00 | | 0.89 | 0.21 | | 0.35 |
| Lane Grp Cap(c), veh/h | 1043 | 0 | 868 | 0 | 0 | 916 | 413 | 0 | 440 | 419 | 0 | 0 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.44 | 0.00 | 0.00 | 0.63 | 0.55 | 0.00 | 0.60 | 0.08 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1042 | 0 | 867 | 0 | 0 | 1216 | 484 | 0 | 523 | 499 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 7.9 | 0.0 | 8.0 | 0.0 | 0.0 | 9.2 | 22.1 | 0.0 | 20.2 | 17.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 0.3 | 0.0 | 0.0 | 0.7 | 1.1 | 0.0 | 1.4 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.3 | 0.0 | 7.3 | 0.0 | 0.0 | 11.3 | 6.9 | 0.0 | 7.7 | 0.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 8.2 | 0.0 | 8.4 | 0.0 | 0.0 | 9.9 | 23.3 | 0.0 | 21.7 | 17.1 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | A | C | | C | B | | |
| Approach Vol, veh/h | | 824 | | | 944 | | | 493 | | | 34 | |
| Approach Delay, s/veh | | 8.3 | | | 6.1 | | | 22.4 | | | 17.1 | |
| Approach LOS | | A | | | A | | | C | | | B | |

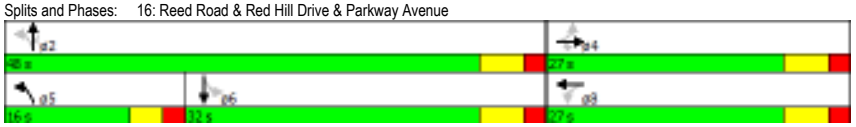
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 41.9 | | 22.5 | | 41.9 | | 22.5 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 33.0 | | 21.0 | | 48.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 11.3 | | 11.8 | | 30.7 | | 16.5 |
| Green Ext Time (p_c), s | | 8.4 | | 1.6 | | 5.2 | | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 107 | 80 | 244 | 23 | 82 | 3 | 244 | 342 | 28 | 4 | 293 | 56 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 309 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 6.0 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 16.0 | 48.0 | 48.0 | 32.0 | 32.0 | |
| Total Split (%) | 36.0% | 36.0% | 36.0% | 36.0% | 36.0% | | 21.3% | 64.0% | 64.0% | 42.7% | 42.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 60.5 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 107 | 80 | 244 | 23 | 82 | 3 | 244 | 342 | 28 | 4 | 293 | 56 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1737 | 1747 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1864 | 1836 |
| Adj Flow Rate, veh/h | 113 | 84 | 215 | 24 | 86 | 2 | 257 | 360 | 27 | 4 | 308 | 44 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 304 | 185 | 355 | 137 | 355 | 7 | 688 | 956 | 820 | 79 | 468 | 66 |
| Arrive On Green | 0.22 | 0.24 | 0.24 | 0.22 | 0.24 | 0.22 | 0.17 | 0.55 | 0.55 | 0.27 | 0.29 | 0.27 |
| Sat Flow, veh/h | 765 | 772 | 1485 | 181 | 1484 | 30 | 1647 | 1747 | 1499 | 6 | 1588 | 225 |
| Grp Volume(v), veh/h | 197 | 0 | 215 | 112 | 0 | 0 | 257 | 360 | 27 | 356 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1537 | 0 | 1485 | 1695 | 0 | 0 | 1647 | 1747 | 1499 | 1819 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 4.2 | 5.5 | 0.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 6.0 | 4.8 | 0.0 | 0.0 | 4.2 | 5.5 | 0.4 | 8.2 | 0.0 | 0.0 |
| Prop In Lane | 0.57 | | 1.00 | 0.21 | | 0.02 | 1.00 | | 1.00 | 0.01 | | 0.12 |
| Lane Grp Cap(c), veh/h | 456 | 0 | 355 | 462 | 0 | 0 | 688 | 956 | 820 | 575 | 0 | 0 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.61 | 0.24 | 0.00 | 0.00 | 0.37 | 0.38 | 0.03 | 0.62 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 778 | 0 | 698 | 829 | 0 | 0 | 835 | 1606 | 1379 | 1086 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.6 | 0.0 | 15.8 | 14.5 | 0.0 | 0.0 | 6.6 | 6.0 | 4.9 | 14.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 1.7 | 0.3 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 1.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 0.0 | 4.7 | 2.2 | 0.0 | 0.0 | 3.4 | 4.8 | 0.3 | 7.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 16.2 | 0.0 | 17.5 | 14.8 | 0.0 | 0.0 | 6.9 | 6.3 | 4.9 | 15.7 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | A | A | B | | |
| Approach Vol, veh/h | | 412 | | | 112 | | | 644 | | | 356 | |
| Approach Delay, s/veh | | 16.9 | | | 14.8 | | | 6.5 | | | 15.7 | |
| Approach LOS | | B | | | B | | | A | | | B | |

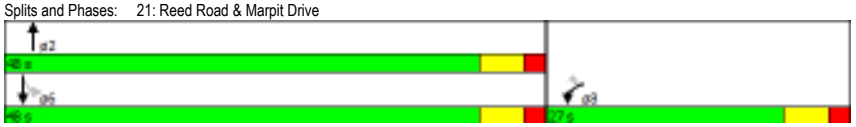
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.6 | | 16.2 | 11.8 | 18.8 | | 16.2 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | 11.0 | 26.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 8.0 | | 8.5 | 6.7 | 10.2 | | 6.8 |
| Green Ext Time (p_c), s | | 3.0 | | 1.7 | 0.3 | 2.6 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.1 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 201 | 72 | 352 | 139 | 81 | 440 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 3% | 4% | 1% | 3% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 27.0 | 27.0 | 48.0 | | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | 64.0% | | 64.0% | 64.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 44.9 | |
| Natural Cycle: 40 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 201 | 72 | 352 | 139 | 81 | 440 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1748 | 1731 | 1772 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 216 | 28 | 378 | 126 | 87 | 473 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 3 | 4 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 359 | 318 | 644 | 215 | 464 | 901 |
| Arrive On Green | 0.22 | 0.22 | 0.51 | 0.48 | 0.51 | 0.51 |
| Sat Flow, veh/h | 1664 | 1471 | 1273 | 424 | 853 | 1782 |
| Grp Volume(v), veh/h | 216 | 28 | 0 | 504 | 87 | 473 |
| Grp Sat Flow(s),veh/h/ln | 1664 | 1471 | 0 | 1697 | 853 | 1782 |
| Q Serve(g_s), s | 4.2 | 0.5 | 0.0 | 7.6 | 2.8 | 6.4 |
| Cycle Q Clear(g_c), s | 4.2 | 0.5 | 0.0 | 7.6 | 9.9 | 6.4 |
| Prop In Lane | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Lane Grp Cap(c), veh/h | 359 | 318 | 0 | 858 | 464 | 901 |
| V/C Ratio(X) | 0.60 | 0.09 | 0.00 | 0.59 | 0.19 | 0.52 |
| Avail Cap(c_a), veh/h | 1020 | 901 | 0 | 2032 | 1054 | 2134 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.7 | 11.3 | 0.0 | 6.3 | 9.5 | 6.0 |
| Incr Delay (d2), s/veh | 1.6 | 0.1 | 0.0 | 0.6 | 0.2 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.7 | 0.4 | 0.0 | 6.4 | 1.2 | 5.7 |
| LnGrp Delay(d),s/veh | 14.3 | 11.4 | 0.0 | 7.0 | 9.7 | 6.4 |
| LnGrp LOS | B | B | | A | A | A |
| Approach Vol, veh/h | 244 | | 504 | | | 560 |
| Approach Delay, s/veh | 14.0 | | 7.0 | | | 7.0 |
| Approach LOS | B | | A | | | A |

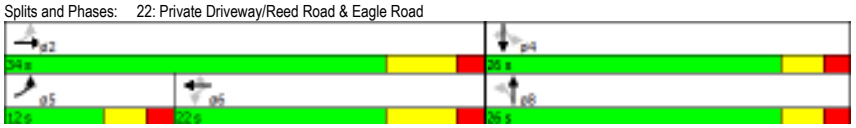
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 23.2 | | | | 23.2 | | 12.8 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | | | 42.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 9.6 | | | | 12.4 | | 6.7 |
| Green Ext Time (p_c), s | | 4.8 | | | | 4.8 | | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.3 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 147 | 204 | 0 | 0 | 290 | 347 | 1 | 0 | 1 | 464 | 0 | 176 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 34.0 | | 22.0 | 22.0 | 22.0 | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 |
| Total Split (%) | 20.0% | 56.7% | | 36.7% | 36.7% | 36.7% | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 57.6 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 147 | 204 | 0 | 0 | 290 | 347 | 1 | 0 | 1 | 464 | 0 | 176 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1808 |
| Adj Flow Rate, veh/h | 158 | 219 | 0 | 0 | 312 | 201 | 1 | 0 | 1 | 499 | 0 | 178 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cap, veh/h | 418 | 838 | 0 | 0 | 469 | 403 | 92 | 31 | 31 | 448 | 0 | 574 |
| Arrive On Green | 0.11 | 0.45 | 0.00 | 0.00 | 0.27 | 0.27 | 0.36 | 0.00 | 0.36 | 0.36 | 0.00 | 0.38 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 83 | 83 | 893 | 0 | 1537 |
| Grp Volume(v), veh/h | 158 | 219 | 0 | 0 | 312 | 201 | 2 | 0 | 0 | 499 | 0 | 178 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 166 | 0 | 0 | 893 | 0 | 1537 |
| Q Serve(g_s), s | 3.3 | 4.3 | 0.0 | 0.0 | 9.3 | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 |
| Cycle Q Clear(g_c), s | 3.3 | 4.3 | 0.0 | 0.0 | 9.3 | 6.7 | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 4.8 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 418 | 838 | 0 | 0 | 469 | 403 | 151 | 0 | 0 | 433 | 0 | 574 |
| V/C Ratio(X) | 0.38 | 0.26 | 0.00 | 0.00 | 0.66 | 0.50 | 0.01 | 0.00 | 0.00 | 1.15 | 0.00 | 0.31 |
| Avail Cap(c_a), veh/h | 469 | 880 | 0 | 0 | 474 | 403 | 152 | 0 | 0 | 445 | 0 | 579 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.1 | 9.9 | 0.0 | 0.0 | 19.1 | 17.9 | 15.0 | 0.0 | 0.0 | 22.1 | 0.0 | 13.1 |
| Incr Delay (d2), s/veh | 0.6 | 0.3 | 0.0 | 0.0 | 4.2 | 1.6 | 0.0 | 0.0 | 0.0 | 92.4 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.0 | 4.1 | 0.0 | 0.0 | 8.7 | 5.3 | 0.0 | 0.0 | 0.0 | 33.0 | 0.0 | 3.7 |
| LnGrp Delay(d),s/veh | 12.7 | 10.1 | 0.0 | 0.0 | 23.3 | 19.6 | 15.0 | 0.0 | 0.0 | 114.4 | 0.0 | 13.4 |
| LnGrp LOS | B | B | | | C | B | B | | | F | | B |
| Approach Vol, veh/h | | 377 | | | 513 | | | 2 | | | 677 | |
| Approach Delay, s/veh | | 11.2 | | | 21.9 | | | 15.0 | | | 87.9 | |
| Approach LOS | | B | | | C | | | B | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.4 | | 26.0 | 10.4 | 22.0 | | 26.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 21.0 | 7.0 | 15.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 6.8 | | 23.0 | 5.8 | 11.8 | | 23.0 |
| Green Ext Time (p_c), s | | 5.0 | | 0.0 | 0.1 | 1.5 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.8 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 18 | 24 | 56 | 1880 | 1538 | 61 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 519 | 187 | |
| Travel Time (s) | 28.2 | | | 8.8 | 3.2 | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 4% | 4% | 2% | 1% | 2% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 6.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 18 | 24 | 56 | 1880 | 1538 | 61 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 0 | 4 | 4 | 2 | 1 | 2 |
| Mvmt Flow | 18 | 24 | 57 | 1899 | 1554 | 62 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2647 | 808 | 1615 | 0 | - | 0 |
| Stage 1 | 1584 | - | - | - | - | - |
| Stage 2 | 1063 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 14 | *571 | *690 | - | - | - |
| Stage 1 | *591 | - | - | - | - | - |
| Stage 2 | *392 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 13 | *571 | *690 | - | - | - |
| Mov Cap-2 Maneuver | *~ 13 | - | - | - | - | - |
| Stage 1 | *591 | - | - | - | - | - |
| Stage 2 | *359 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 537.5 | 0.3 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 690 | - | 29 | - | - |
| HCM Lane V/C Ratio | 0.082 | - | 1.463 | - | - |
| HCM Control Delay (s) | 10.7 | - | $ 537.5 | - | - |
| HCM Lane LOS | B | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 4.9 | - | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 20 | 0 | 137 | 2 | 0 | 1 | 29 | 1355 | 0 | 13 | 1370 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 473 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.1 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 34.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 20 | 0 | 137 | 2 | 0 | 1 | 29 | 1355 | 0 | 13 | 1370 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 22 | 0 | 147 | 2 | 0 | 1 | 31 | 1457 | 0 | 14 | 1473 | 1 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2292 | 3020 | 737 | 2284 | 3020 | 728 | 1473 | 0 | 0 | 1457 | 0 | 0 |
| Stage 1 | 1501 | 1501 | - | 1519 | 1519 | - | - | - | - | - | - | - |
| Stage 2 | 791 | 1519 | - | 765 | 1501 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.5 | 6.5 | 7.2 | 7.8 | 5.9 | 6.9 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *~ 12 | *13 | *591 | *20 | *22 | *628 | *715 | - | - | *760 | - | - |
| Stage 1 | *612 | *429 | - | *580 | *428 | - | - | - | - | - | - | - |
| Stage 2 | *651 | *423 | - | *612 | *429 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *~ 11 | *12 | *591 | *14 | *21 | *628 | *715 | - | - | *760 | - | - |
| Mov Cap-2 Maneuver | *~ 11 | *12 | - | *14 | *21 | - | - | - | - | - | - | - |
| Stage 1 | *586 | *421 | - | *555 | *410 | - | - | - | - | - | - | - |
| Stage 2 | *621 | *404 | - | *451 | *421 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 636.9 | 205.3 | 0.2 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 715 | - | - | 79 | 21 | * 760 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | - | 2.137 | 0.154 | 0.018 | - | - |
| HCM Control Delay (s) | 10.3 | - | - | $ 636.9 | 205.3 | 9.8 | - | - |
| HCM Lane LOS | B | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 15.4 | 0.5 | 0.1 | - | - |

| Notes |
|---|

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 12 | 70 | 0 | 1499 | 1427 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 265 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Confl. Peds. (#/hr) | 1 | 1 | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 12 | 70 | 0 | 1499 | 1427 | 0 |
| Conflicting Peds, #/hr | 1 | 1 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 13 | 75 | 0 | 1612 | 1534 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2341 | 768 | 1535 | 0 | - | 0 |
| Stage 1 | 1535 | - | - | - | - | - |
| Stage 2 | 806 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *18 | *525 | *680 | - | - | - |
| Stage 1 | *543 | - | - | - | - | - |
| Stage 2 | *510 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *18 | *525 | *680 | - | - | - |
| Mov Cap-2 Maneuver | *248 | - | - | - | - | - |
| Stage 1 | *543 | - | - | - | - | - |
| Stage 2 | *510 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.1 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 680 | - | 248 | 525 | - | - |
| HCM Lane V/C Ratio | - | - | 0.052 | 0.143 | - | - |
| HCM Control Delay (s) | 0 | - | 20.3 | 13 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | 0.5 | - | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 26 | 1502 | 5 | 25 | 1554 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 1502 | 5 | 25 | 1554 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 27 | 1533 | 5 | 26 | 1586 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2379 | 771 | 0 | 0 | 1538 | 0 |
| Stage 1 | 1535 | - | - | - | - | - |
| Stage 2 | 844 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *23 | *528 | - | - | *639 | - |
| Stage 1 | *547 | - | - | - | - | - |
| Stage 2 | *522 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *15 | *527 | - | - | *638 | - |
| Mov Cap-2 Maneuver | *15 | - | - | - | - | - |
| Stage 1 | *547 | - | - | - | - | - |
| Stage 2 | *343 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.2 | 0 | 1.9 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 527 | * 638 | - |
| HCM Lane V/C Ratio | - | - | 0.05 | 0.04 | - |
| HCM Control Delay (s) | - | - | 12.2 | 10.9 | 1.8 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 78 | 107 | 74 | 619 | 461 | 260 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 16.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 78 | 107 | 74 | 619 | 461 | 260 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 0 | 0 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 90 | 123 | 85 | 711 | 530 | 299 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1561 | 679 | 829 | 0 | - | 0 |
| Stage 1 | 679 | - | - | - | - | - |
| Stage 2 | 882 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | 134 | 557 | 649 | - | - | - |
| Stage 1 | 604 | - | - | - | - | - |
| Stage 2 | 451 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | 105 | 557 | 649 | - | - | - |
| Mov Cap-2 Maneuver | 105 | - | - | - | - | - |
| Stage 1 | 604 | - | - | - | - | - |
| Stage 2 | 353 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 135 | 1.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 649 | - | 198 | - | - |
| HCM Lane V/C Ratio | 0.131 | - | 1.074 | - | - |
| HCM Control Delay (s) | 11.4 | 0 | 135 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 9.9 | - | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 251 | 318 | 331 | 94 | 49 | 146 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 417 | 303 | | 589 | |
| Travel Time (s) | | 8.1 | 5.9 | | 16.1 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 2% | 1% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 251 | 318 | 331 | 94 | 49 | 146 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 1 | 2 | 1 | 0 | 2 | 1 |
| Mvmt Flow | 264 | 335 | 348 | 99 | 52 | 154 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 447 | 0 | - | 0 | 1094 | 398 |
| Stage 1 | - | - | - | - | 398 | - |
| Stage 2 | - | - | - | - | 696 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1069 | - | - | - | 187 | 669 |
| Stage 1 | - | - | - | - | 703 | - |
| Stage 2 | - | - | - | - | 433 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1069 | - | - | - | 130 | 669 |
| Mov Cap-2 Maneuver | - | - | - | - | 130 | - |
| Stage 1 | - | - | - | - | 703 | - |
| Stage 2 | - | - | - | - | 302 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 4.5 | 0 | 32.7 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1069 | - | - | - | 328 |
| HCM Lane V/C Ratio | 0.247 | - | - | - | 0.626 |
| HCM Control Delay (s) | 9.5 | 0.6 | - | - | 32.7 |
| HCM Lane LOS | A | A | - | - | D |
| HCM 95th %tile Q(veh) | 1 | - | - | - | 4 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 35 | 348 | 356 | 63 | 81 | 40 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 303 | 285 | | 309 | |
| Travel Time (s) | | 5.9 | 5.6 | | 8.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 1% | 1% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 35 | 348 | 356 | 63 | 81 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 1 | 1 | 0 | 1 | 0 |
| Mvmt Flow | 37 | 370 | 379 | 67 | 86 | 43 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 446 | 0 | - | 0 | 672 | 412 |
| Stage 1 | - | - | - | - | 412 | - |
| Stage 2 | - | - | - | - | 260 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1070 | - | - | - | 386 | 656 |
| Stage 1 | - | - | - | - | 689 | - |
| Stage 2 | - | - | - | - | 823 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1070 | - | - | - | 369 | 656 |
| Mov Cap-2 Maneuver | - | - | - | - | 369 | - |
| Stage 1 | - | - | - | - | 689 | - |
| Stage 2 | - | - | - | - | 787 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1 | 0 | 16.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1070 | - | - | - | 431 |
| HCM Lane V/C Ratio | 0.035 | - | - | - | 0.299 |
| HCM Control Delay (s) | 8.5 | 0.2 | - | - | 16.9 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.2 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 37 | 222 | 418 | 16 | 146 | 496 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 37 | 222 | 418 | 16 | 146 | 496 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 39 | 236 | 445 | 17 | 155 | 528 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1283 | 445 | 0 | 0 | 445 | 0 |
| Stage 1 | 445 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 228 | 664 | - | - | 844 | - |
| Stage 1 | 771 | - | - | - | - | - |
| Stage 2 | 517 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 169 | 664 | - | - | 844 | - |
| Mov Cap-2 Maneuver | 298 | - | - | - | - | - |
| Stage 1 | 771 | - | - | - | - | - |
| Stage 2 | 383 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.3 | 0 | 2.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 565 | 844 | - |
| HCM Lane V/C Ratio | - | - | 0.488 | 0.184 | - |
| HCM Control Delay (s) | - | - | 17.3 | 10.2 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.7 | 0.7 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 211 | 373 | 9 | 24 | 52 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 5 | 5 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 11% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 211 | 373 | 9 | 24 | 52 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 5 | 5 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 0 | 1 | 1 | 11 | 0 | 0 |
| Mvmt Flow | 6 | 271 | 478 | 12 | 31 | 67 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 495 | 0 | - | 0 | 772 | 250 |
| Stage 1 | - | - | - | - | 489 | - |
| Stage 2 | - | - | - | - | 283 | - |
| Critical Hdwy | 4.3 | - | - | - | 6.2 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5 | - |
| Follow-up Hdwy | 3 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 811 | - | - | - | 431 | 811 |
| Stage 1 | - | - | - | - | 702 | - |
| Stage 2 | - | - | - | - | 909 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 811 | - | - | - | 423 | 806 |
| Mov Cap-2 Maneuver | - | - | - | - | 423 | - |
| Stage 1 | - | - | - | - | 698 | - |
| Stage 2 | - | - | - | - | 897 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 811 | - | - | - | 627 |
| HCM Lane V/C Ratio | 0.008 | - | - | - | 0.155 |
| HCM Control Delay (s) | 9.5 | - | - | - | 11.8 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.5 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 126 | 53 | 165 | 9 | 42 | 22 | 111 | 297 | 4 | 24 | 180 | 121 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 217 | | | 179 | | | 380 | | | 604 | |
| Travel Time (s) | | 5.9 | | | 4.9 | | | 10.4 | | | 16.5 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 17.9 |
| Intersection LOS | C |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 126 | 53 | 165 | 0 | 9 | 42 | 22 | 0 | 111 | 297 | 4 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 0 | 1 | 2 | 11 | 0 | 5 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 0 | 135 | 57 | 177 | 0 | 10 | 45 | 24 | 0 | 119 | 319 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 13.4 | 11.8 | 23.6 |
| HCM LOS | B | B | C |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 27% | 70% | 0% | 12% | 7% |
| Vol Thru, % | 72% | 30% | 0% | 58% | 55% |
| Vol Right, % | 1% | 0% | 100% | 30% | 37% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 412 | 179 | 165 | 73 | 325 |
| LT Vol | 111 | 126 | 0 | 9 | 24 |
| Through Vol | 297 | 53 | 0 | 42 | 180 |
| RT Vol | 4 | 0 | 165 | 22 | 121 |
| Lane Flow Rate | 443 | 192 | 177 | 78 | 349 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.729 | 0.394 | 0.31 | 0.16 | 0.578 |
| Departure Headway (Hd) | 6.053 | 7.374 | 6.297 | 7.341 | 5.957 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 602 | 489 | 573 | 489 | 608 |
| Service Time | 4.053 | 5.095 | 4.018 | 5.375 | 3.981 |
| HCM Lane V/C Ratio | 0.736 | 0.393 | 0.309 | 0.16 | 0.574 |
| HCM Control Delay | 23.6 | 14.8 | 11.8 | 11.8 | 16.8 |
| HCM Lane LOS | C | B | B | B | C |
| HCM 95th-tile Q | 6.2 | 1.9 | 1.3 | 0.6 | 3.7 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 24 | 180 | 121 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 26 | 194 | 130 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 16.8 |
| HCM LOS | C |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 200 | 44 | 124 | 302 | 71 | 126 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1543 | | | 489 | 560 | |
| Travel Time (s) | 35.1 | | | 11.1 | 12.7 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 200 | 44 | 124 | 302 | 71 | 126 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 213 | 47 | 132 | 321 | 76 | 134 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 213 | 0 | 798 | 213 |
| Stage 1 | - | - | - | - | 213 | - |
| Stage 2 | - | - | - | - | 585 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 1015 | - | 234 | 820 |
| Stage 1 | - | - | - | - | 826 | - |
| Stage 2 | - | - | - | - | 427 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1015 | - | 197 | 820 |
| Mov Cap-2 Maneuver | - | - | - | - | 197 | - |
| Stage 1 | - | - | - | - | 826 | - |
| Stage 2 | - | - | - | - | 360 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.6 | 18.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 197 | 820 | - | - | 1015 | - |
| HCM Lane V/C Ratio | 0.383 | 0.163 | - | - | 0.13 | - |
| HCM Control Delay (s) | 34.2 | 10.2 | - | - | 9.1 | 0 |
| HCM Lane LOS | D | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.7 | 0.6 | - | - | 0.4 | - |

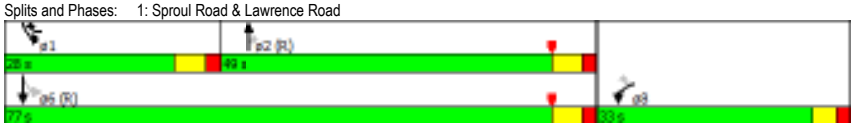
# *2020 PROJECTED CONDITIONS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 350 | 649 | 1288 | 395 | 407 | 887 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 33.0 | 28.0 | 49.0 | 49.0 | 28.0 | 77.0 |
| Total Split (%) | 30.0% | 25.5% | 44.5% | 44.5% | 25.5% | 70.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 350 | 649 | 1288 | 395 | 407 | 887 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1713 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 357 | 594 | 1314 | 311 | 415 | 905 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 418 | 688 | 1296 | 609 | 438 | 2262 |
| Arrive On Green | 0.26 | 0.26 | 0.40 | 0.40 | 0.21 | 0.65 |
| Sat Flow, veh/h | 1585 | 1456 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 357 | 594 | 1314 | 311 | 415 | 905 |
| Grp Sat Flow(s),veh/h/ln | 1585 | 1456 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 23.5 | 29.0 | 44.0 | 16.9 | 21.1 | 13.5 |
| Cycle Q Clear(g_c), s | 23.5 | 29.0 | 44.0 | 16.9 | 21.1 | 13.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 418 | 688 | 1296 | 609 | 438 | 2262 |
| V/C Ratio(X) | 0.85 | 0.86 | 1.01 | 0.51 | 0.95 | 0.40 |
| Avail Cap(c_a), veh/h | 418 | 688 | 1296 | 609 | 438 | 2262 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.34 | 0.34 | 0.58 | 0.58 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.9 | 25.8 | 33.0 | 24.9 | 35.1 | 8.9 |
| Incr Delay (d2), s/veh | 6.0 | 4.1 | 22.5 | 1.8 | 29.9 | 0.5 |
| Initial Q Delay(d3),s/veh | 2.5 | 0.0 | 13.6 | 0.0 | 2.8 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.0 | 20.7 | 45.1 | 10.8 | 23.3 | 10.8 |
| LnGrp Delay(d),s/veh | 47.4 | 29.9 | 69.1 | 26.7 | 67.8 | 9.4 |
| LnGrp LOS | D | C | F | C | E | A |
| Approach Vol, veh/h | 951 | | 1625 | | | 1320 |
| Approach Delay, s/veh | 36.5 | | 60.9 | | | 27.8 |
| Approach LOS | D | | E | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.0 | 49.0 | | | | 77.0 | | 33.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 22.0 | 43.0 | | | | 71.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | 23.6 | 46.5 | | | | 16.0 | | 31.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 19.7 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 43.7 |
| HCM 2010 LOS | D |

## 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway
## 2020 PROJECTED CONDITIONS

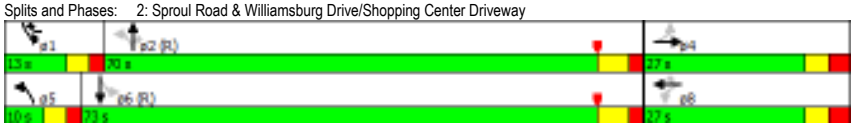
Timing Plan: AM PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 40 | 15 | 37 | 72 | 6 | 79 | 26 | 1618 | 81 | 84 | 1298 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 611 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.4 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | 13.0 | 10.0 | 70.0 | 70.0 | 13.0 | 73.0 | |
| Total Split (%) | 24.5% | 24.5% | | 24.5% | 24.5% | 11.8% | 9.1% | 63.6% | 63.6% | 11.8% | 66.4% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 101 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway






## 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway
## 2020 PROJECTED CONDITIONS

Timing Plan: AM PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 40 | 15 | 37 | 72 | 6 | 79 | 26 | 1618 | 81 | 84 | 1298 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1698 | 1800 | 1764 | 1739 | 1696 | 1764 | 1696 | 1781 | 1748 | 1713 | 1800 |
| Adj Flow Rate, veh/h | 42 | 16 | 38 | 75 | 6 | 75 | 27 | 1685 | 0 | 88 | 1352 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 3 | 3 | 5 | 5 |
| Cap, veh/h | 87 | 39 | 52 | 200 | 14 | 291 | 338 | 2161 | 1015 | 223 | 2275 | 29 |
| Arrive On Green | 0.15 | 0.16 | 0.15 | 0.15 | 0.16 | 0.16 | 0.02 | 0.67 | 0.00 | 0.06 | 0.92 | 0.91 |
| Sat Flow, veh/h | 257 | 248 | 331 | 870 | 87 | 1442 | 1680 | 3223 | 1514 | 1664 | 3291 | 41 |
| Grp Volume(v), veh/h | 96 | 0 | 0 | 81 | 0 | 75 | 27 | 1685 | 0 | 88 | 668 | 701 |
| Grp Sat Flow(s),veh/h/ln | 836 | 0 | 0 | 957 | 0 | 1442 | 1680 | 1611 | 1514 | 1664 | 1627 | 1705 |
| Q Serve(g_s), s | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.5 | 39.7 | 0.0 | 1.7 | 8.0 | 8.1 |
| Cycle Q Clear(g_c), s | 13.8 | 0.0 | 0.0 | 9.2 | 0.0 | 4.8 | 0.5 | 39.7 | 0.0 | 1.7 | 8.0 | 8.1 |
| Prop In Lane | 0.44 | | 0.40 | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 171 | 0 | 0 | 204 | 0 | 291 | 338 | 2161 | 1015 | 223 | 1125 | 1179 |
| V/C Ratio(X) | 0.56 | 0.00 | 0.00 | 0.40 | 0.00 | 0.26 | 0.08 | 0.78 | 0.00 | 0.40 | 0.59 | 0.59 |
| Avail Cap(c_a), veh/h | 229 | 0 | 0 | 260 | 0 | 354 | 388 | 2161 | 1015 | 286 | 1125 | 1179 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.83 | 0.83 | 0.83 |
| Uniform Delay (d), s/veh | 45.9 | 0.0 | 0.0 | 43.3 | 0.0 | 36.9 | 5.4 | 12.7 | 0.0 | 15.6 | 1.7 | 1.7 |
| Incr Delay (d2), s/veh | 2.9 | 0.0 | 0.0 | 1.2 | 0.0 | 0.5 | 0.1 | 2.9 | 0.0 | 0.9 | 1.9 | 1.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.4 | 0.0 | 0.0 | 4.3 | 0.0 | 3.5 | 0.5 | 25.8 | 0.0 | 2.6 | 6.6 | 6.8 |
| LnGrp Delay(d),s/veh | 48.8 | 0.0 | 0.0 | 44.6 | 0.0 | 37.4 | 5.5 | 15.7 | 0.0 | 16.5 | 3.6 | 3.5 |
| LnGrp LOS | D | | | D | | D | A | B | | B | A | A |
| Approach Vol, veh/h | | 96 | | | 156 | | | 1712 | | | 1457 | |
| Approach Delay, s/veh | | 48.8 | | | 41.1 | | | 15.5 | | | 4.4 | |
| Approach LOS | | D | | | D | | | B | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.0 | 78.8 | | 22.3 | 6.7 | 81.0 | | 22.3 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 8.0 | 64.0 | | 21.0 | 5.0 | 67.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 42.2 | | 15.8 | 3.0 | 10.5 | | 11.2 |
| Green Ext Time (p_c), s | 0.1 | 15.7 | | 0.4 | 0.0 | 27.8 | | 0.7 |

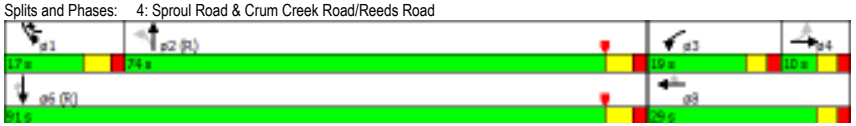
**Intersection Summary**

HCM 2010 Ctrl Delay 12.9
HCM 2010 LOS B

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 15 | 34 | 231 | 10 | 208 | 59 | 2003 | 286 | 245 | 1037 | 29 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 225 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 459 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.8 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 2% | 6% | 3% | 3% | 3% | 3% | 7% | 2% | 2% | 4% | 3% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 10.0 | 10.0 | | 19.0 | 29.0 | 17.0 | 74.0 | 74.0 | | 17.0 | 91.0 | 91.0 |
| Total Split (%) | 8.3% | 8.3% | | 15.8% | 24.2% | 14.2% | 61.7% | 61.7% | | 14.2% | 75.8% | 75.8% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 118 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 15 | 34 | 231 | 10 | 208 | 59 | 2003 | 286 | 245 | 1037 | 29 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1735 | 1818 | 1783 | 1783 | 1783 | 1730 | 1742 | 1853 | 1782 | 1818 | 1836 |
| Adj Flow Rate, veh/h | 23 | 15 | 28 | 236 | 10 | 167 | 60 | 2044 | 231 | 250 | 1058 | 24 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 7 | 7 | 2 | 4 | 3 |
| Cap, veh/h | 117 | 27 | 51 | 332 | 328 | 405 | 349 | 2269 | 254 | 329 | 2559 | 1143 |
| Arrive On Green | 0.05 | 0.05 | 0.04 | 0.10 | 0.18 | 0.18 | 1.00 | 1.00 | 1.00 | 0.10 | 0.74 | 0.73 |
| Sat Flow, veh/h | 1139 | 543 | 1013 | 3293 | 1783 | 1515 | 482 | 3787 | 424 | 3293 | 3454 | 1560 |
| Grp Volume(v), veh/h | 23 | 0 | 43 | 236 | 10 | 167 | 60 | 1367 | 908 | 250 | 1058 | 24 |
| Grp Sat Flow(s),veh/h/ln | 1139 | 0 | 1556 | 1647 | 1783 | 1515 | 482 | 1272 | 1667 | 1647 | 1727 | 1560 |
| Q Serve(g_s), s | 2.3 | 0.0 | 3.2 | 8.3 | 0.6 | 10.9 | 0.0 | 0.0 | 0.0 | 8.9 | 13.7 | 0.5 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 3.2 | 8.3 | 0.6 | 10.9 | 0.0 | 0.0 | 0.0 | 8.9 | 13.7 | 0.5 |
| Prop In Lane | 1.00 | | 0.65 | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 117 | 0 | 78 | 332 | 328 | 405 | 349 | 1524 | 999 | 329 | 2559 | 1143 |
| V/C Ratio(X) | 0.20 | 0.00 | 0.55 | 0.71 | 0.03 | 0.41 | 0.17 | 0.90 | 0.91 | 0.76 | 0.41 | 0.02 |
| Avail Cap(c_a), veh/h | 117 | 0 | 78 | 412 | 371 | 442 | 349 | 1524 | 999 | 329 | 2559 | 1143 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.3 | 0.0 | 56.0 | 52.3 | 40.2 | 36.2 | 0.0 | 0.0 | 0.0 | 52.6 | 5.8 | 4.4 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 8.2 | 4.3 | 0.0 | 0.7 | 1.1 | 8.7 | 13.5 | 9.8 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 0.0 | 2.8 | 7.2 | 0.5 | 8.1 | 0.2 | 3.3 | 6.8 | 7.9 | 10.9 | 0.4 |
| LnGrp Delay(d),s/veh | 56.1 | 0.0 | 64.2 | 56.5 | 40.2 | 36.9 | 1.1 | 8.7 | 13.5 | 62.4 | 6.3 | 4.4 |
| LnGrp LOS | E | | E | E | D | D | A | A | B | E | A | A |
| Approach Vol, veh/h | | 66 | | | 413 | | | 2335 | | | 1332 | |
| Approach Delay, s/veh | | 61.4 | | | 48.2 | | | 10.4 | | | 16.8 | |
| Approach LOS | | E | | | D | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 76.9 | 16.1 | 10.0 | | 93.9 | | 26.1 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 11.0 | 68.0 | 14.0 | 5.0 | | 85.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | 11.4 | 2.5 | 10.8 | 5.2 | | 16.2 | | 12.9 |
| Green Ext Time (p_c), s | 0.0 | 37.9 | 0.3 | 0.0 | | 38.8 | | 0.6 |

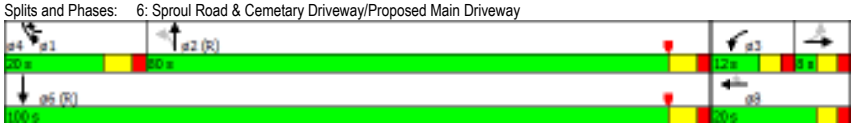
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.0 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 0 | 6 | 80 | 0 | 40 | 18 | 2281 | 111 | 75 | 1253 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 1 | | 1 | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 6% | 4% | 2% | 2% | 5% | 50% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 12.0 | 20.0 | 20.0 | 80.0 | 80.0 | | 20.0 | 100.0 | |
| Total Split (%) | 6.7% | 6.7% | | 10.0% | 16.7% | 16.7% | 66.7% | 66.7% | | 16.7% | 83.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 110 (92%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 4 | 0 | 6 | 80 | 0 | 40 | 18 | 2281 | 111 | 75 | 1253 | 2 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1872 | 1800 | 1863 | 1791 | 1791 | 1681 | 1784 | 1853 | 1747 | 1764 | 1853 |
| Adj Flow Rate, veh/h | 4 | 0 | 0 | 83 | 0 | 30 | 19 | 2376 | 82 | 78 | 1305 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 6 | 4 | 4 | 2 | 5 | 5 |
| Cap, veh/h | 94 | 47 | 0 | 178 | 198 | 274 | 327 | 2773 | 95 | 116 | 2730 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.05 | 0.00 | 0.11 | 1.00 | 1.00 | 1.00 | 0.14 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1328 | 1872 | 0 | 3442 | 1791 | 1523 | 379 | 3943 | 136 | 1664 | 3440 | 0 |
| Grp Volume(v), veh/h | 4 | 0 | 0 | 83 | 0 | 30 | 19 | 1394 | 1064 | 78 | 1305 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1328 | 1872 | 0 | 1721 | 1791 | 1523 | 379 | 1159 | 1760 | 1664 | 1676 | 0 |
| Q Serve(g_s), s | 0.4 | 0.0 | 0.0 | 2.8 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.4 | 0.0 | 0.0 | 2.8 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.08 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 94 | 47 | 0 | 178 | 198 | 274 | 327 | 1631 | 1238 | 116 | 2730 | 0 |
| V/C Ratio(X) | 0.04 | 0.00 | 0.00 | 0.47 | 0.00 | 0.11 | 0.06 | 0.85 | 0.86 | 0.67 | 0.48 | 0.00 |
| Avail Cap(c_a), veh/h | 104 | 62 | 0 | 229 | 239 | 309 | 327 | 1631 | 1238 | 208 | 2730 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.21 | 0.21 | 0.21 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 57.2 | 0.0 | 0.0 | 55.3 | 0.0 | 41.2 | 0.0 | 0.0 | 0.0 | 50.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 1.9 | 0.0 | 0.2 | 0.1 | 1.3 | 1.8 | 6.7 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 | 1.5 | 0.0 | 0.5 | 1.1 | 4.8 | 0.4 | 0.0 |
| LnGrp Delay(d),s/veh | 57.4 | 0.0 | 0.0 | 57.2 | 0.0 | 41.3 | 0.1 | 1.3 | 1.8 | 57.1 | 0.6 | 0.0 |
| LnGrp LOS | E | | | E | | D | A | A | A | E | A | |
| Approach Vol, veh/h | | 4 | | | 113 | | | 2477 | | | 1383 | |
| Approach Delay, s/veh | | 57.4 | | | 53.0 | | | 1.5 | | | 3.8 | |
| Approach LOS | | E | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.3 | 89.4 | 10.2 | 7.0 | | 102.7 | | 17.3 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 74.0 | 7.0 | 3.0 | | 94.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 7.8 | 2.5 | 5.3 | 2.9 | | 2.5 | | 4.0 |
| Green Ext Time (p_c), s | 0.1 | 46.9 | 0.0 | 0.0 | | 54.2 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 3.8 |
| HCM 2010 LOS | A |

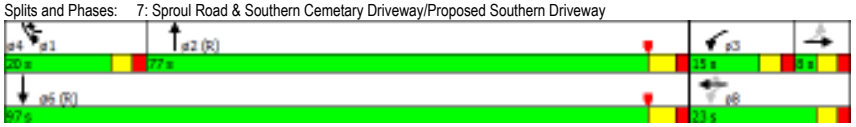
**Notes**

User approved changes to right turn type.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 0 | 0 | 60 | 0 | 54 | 0 | 2324 | 51 | 51 | 1453 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 4% | 2% | 2% | 6% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 8.0 | | 22.0 | | 8.0 | 22.0 | |
| Total Split (s) | 8.0 | 8.0 | | 15.0 | 23.0 | 20.0 | | 77.0 | | 20.0 | 97.0 | |
| Total Split (%) | 6.7% | 6.7% | | 12.5% | 19.2% | 16.7% | | 64.2% | | 16.7% | 80.8% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 0 | 0 | 0 | 60 | 0 | 54 | 0 | 2324 | 51 | 51 | 1453 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1783 | 1853 | 1782 | 1784 | 0 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 65 | 0 | 46 | 0 | 2499 | 38 | 55 | 1562 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 4 | 4 | 2 | 6 | 0 |
| Cap, veh/h | 60 | 2 | 0 | 162 | 107 | 169 | 0 | 3138 | 48 | 89 | 2930 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 1.00 | 1.00 | 0.10 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1309 | 1800 | 0 | 1681 | 1765 | 1500 | 0 | 4652 | 61 | 1697 | 3478 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 65 | 0 | 46 | 0 | 1436 | 1101 | 55 | 1562 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1309 | 1800 | 0 | 1681 | 1765 | 1500 | 0 | 1159 | 1772 | 1697 | 1695 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.03 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 60 | 2 | 0 | 162 | 107 | 169 | 0 | 1805 | 1380 | 89 | 2930 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.40 | 0.00 | 0.27 | 0.00 | 0.80 | 0.80 | 0.62 | 0.53 | 0.00 |
| Avail Cap(c_a), veh/h | 147 | 60 | 0 | 214 | 279 | 316 | 0 | 1805 | 1380 | 226 | 2930 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.89 | 0.89 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 55.0 | 0.0 | 48.7 | 0.0 | 0.0 | 0.0 | 52.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.9 | 0.0 | 3.7 | 4.9 | 6.1 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.0 | 0.0 | 0.0 | 3.9 | 0.0 | 2.6 | 0.0 | 1.7 | 3.4 | 3.4 | 0.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 56.6 | 0.0 | 49.6 | 0.0 | 3.7 | 4.9 | 58.7 | 0.6 | 0.0 |
| LnGrp LOS | | | | E | | D | | A | A | E | A | |
| Approach Vol, veh/h | | 0 | | | 111 | | | 2537 | | | 1617 | |
| Approach Delay, s/veh | | 0.0 | | | 53.7 | | | 4.2 | | | 2.6 | |
| Approach LOS | | | | | D | | | A | | | A | |

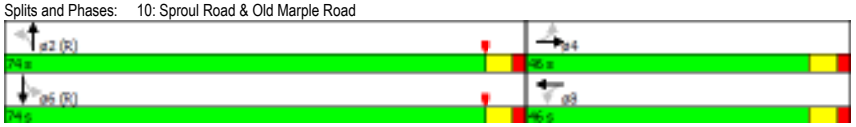
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 10.3 | 98.5 | 11.3 | 0.0 | | 108.7 | | 11.3 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 15.0 | 71.0 | 10.0 | 3.0 | | 91.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 2.5 | 7.0 | 0.0 | | 2.5 | | 5.9 |
| Green Ext Time (p_c), s | 0.1 | 50.8 | 0.0 | 0.0 | | 60.7 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.9 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 135 | 74 | 38 | 217 | 238 | 1 | 169 | 1194 | 40 | 1 | 819 | 147 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 46.0 | 46.0 | | 46.0 | 46.0 | | 74.0 | 74.0 | | 74.0 | 74.0 | |
| Total Split (%) | 38.3% | 38.3% | | 38.3% | 38.3% | | 61.7% | 61.7% | | 61.7% | 61.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 135 | 74 | 38 | 217 | 238 | 1 | 169 | 1194 | 40 | 1 | 819 | 147 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1801 | 1818 | 1782 | 1714 | 1782 | 1773 | 1718 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 144 | 79 | 35 | 231 | 253 | 1 | 180 | 1270 | 34 | 1 | 871 | 127 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 |
| Cap, veh/h | 251 | 133 | 53 | 258 | 234 | 1 | 91 | 1307 | 30 | 30 | 1552 | 239 |
| Arrive On Green | 0.33 | 0.34 | 0.34 | 0.33 | 0.34 | 0.33 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h | 599 | 389 | 155 | 627 | 686 | 3 | 203 | 1994 | 60 | 0 | 2730 | 418 |
| Grp Volume(v), veh/h | 258 | 0 | 0 | 485 | 0 | 0 | 606 | 0 | 878 | 535 | 0 | 464 |
| Grp Sat Flow(s),veh/h/ln | 1142 | 0 | 0 | 1315 | 0 | 0 | 704 | 0 | 1553 | 1621 | 0 | 1527 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 17.2 | 0.0 | 0.0 | 45.6 | 0.0 | 66.3 | 1.7 | 0.0 | 22.4 |
| Cycle Q Clear(g_c), s | 22.8 | 0.0 | 0.0 | 40.0 | 0.0 | 0.0 | 68.0 | 0.0 | 66.3 | 68.0 | 0.0 | 22.4 |
| Prop In Lane | 0.56 | | 0.14 | 0.48 | | 0.00 | 0.30 | | 0.04 | 0.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 427 | 0 | 0 | 483 | 0 | 0 | 564 | 0 | 894 | 930 | 0 | 878 |
| V/C Ratio(X) | 0.60 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.07 | 0.00 | 0.98 | 0.57 | 0.00 | 0.53 |
| Avail Cap(c_a), veh/h | 427 | 0 | 0 | 483 | 0 | 0 | 438 | 0 | 893 | 948 | 0 | 878 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.4 | 0.0 | 0.0 | 41.8 | 0.0 | 0.0 | 37.0 | 0.0 | 25.1 | 15.9 | 0.0 | 15.7 |
| Incr Delay (d2), s/veh | 2.4 | 0.0 | 0.0 | 42.1 | 0.0 | 0.0 | 59.2 | 0.0 | 26.1 | 2.6 | 0.0 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.9 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.2 | 0.0 | 0.0 | 39.1 | 0.0 | 0.0 | 51.6 | 0.0 | 44.8 | 17.3 | 0.0 | 15.2 |
| LnGrp Delay(d),s/veh | 35.8 | 0.0 | 0.0 | 83.9 | 0.0 | 0.0 | 102.1 | 0.0 | 51.7 | 18.5 | 0.0 | 18.0 |
| LnGrp LOS | D | | | F | | | F | | D | B | | B |
| Approach Vol, veh/h | | 258 | | | 485 | | | 1484 | | | 999 | |
| Approach Delay, s/veh | | 35.8 | | | 83.9 | | | 72.3 | | | 18.3 | |
| Approach LOS | | D | | | F | | | E | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 74.0 | | 46.0 | | 74.0 | | 46.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 68.0 | | 40.0 | | 68.0 | | 40.0 |
| Max Q Clear Time (g_c+I1), s | | 70.0 | | 24.8 | | 70.0 | | 42.0 |
| Green Ext Time (p_c), s | | 0.0 | | 2.8 | | 0.0 | | 0.0 |

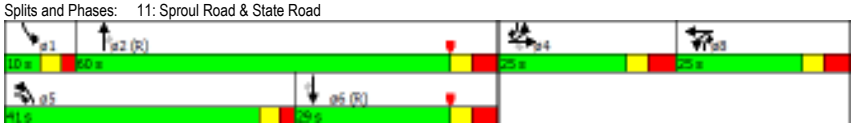
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 54.4 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 333 | 15 | 312 | 165 | 72 | 61 | 477 | 1151 | 324 | 21 | 583 | 428 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 48% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 25.0 | 25.0 | 41.0 | 25.0 | 25.0 | | 41.0 | 60.0 | 25.0 | 10.0 | 29.0 | 25.0 |
| Total Split (%) | 20.8% | 20.8% | 34.2% | 20.8% | 20.8% | | 34.2% | 50.0% | 20.8% | 8.3% | 24.2% | 20.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 333 | 15 | 312 | 165 | 72 | 61 | 477 | 1151 | 324 | 21 | 583 | 428 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1826 | 1788 | 1844 | 1872 | 1814 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 358 | 0 | 0 | 124 | 143 | 0 | 497 | 1199 | 0 | 22 | 607 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 462 | 0 | 692 | 195 | 198 | 0 | 523 | 1859 | 987 | 44 | 885 | 599 |
| Arrive On Green | 0.13 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.31 | 0.55 | 0.00 | 0.03 | 0.27 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 358 | 0 | 0 | 124 | 143 | 0 | 497 | 1199 | 0 | 22 | 607 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 11.9 | 0.0 | 0.0 | 8.0 | 9.1 | 0.0 | 34.4 | 29.7 | 0.0 | 1.5 | 19.7 | 0.0 |
| Cycle Q Clear(g_c), s | 11.9 | 0.0 | 0.0 | 8.0 | 9.1 | 0.0 | 34.4 | 29.7 | 0.0 | 1.5 | 19.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 462 | 0 | 692 | 195 | 198 | 0 | 523 | 1859 | 987 | 44 | 885 | 599 |
| V/C Ratio(X) | 0.77 | 0.00 | 0.00 | 0.64 | 0.72 | 0.00 | 0.95 | 0.64 | 0.00 | 0.50 | 0.69 | 0.00 |
| Avail Cap(c_a), veh/h | 551 | 0 | 732 | 282 | 287 | 0 | 523 | 1859 | 987 | 86 | 885 | 599 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 50.3 | 0.0 | 0.0 | 51.2 | 51.7 | 0.0 | 41.4 | 18.9 | 0.0 | 57.7 | 39.5 | 0.0 |
| Incr Delay (d2), s/veh | 5.7 | 0.0 | 0.0 | 3.4 | 4.9 | 0.0 | 27.2 | 1.7 | 0.0 | 8.4 | 4.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.1 | 0.0 | 0.0 | 7.4 | 8.5 | 0.0 | 31.4 | 20.5 | 0.0 | 1.5 | 14.6 | 0.0 |
| LnGrp Delay(d),s/veh | 56.0 | 0.0 | 0.0 | 54.6 | 56.6 | 0.0 | 87.4 | 20.6 | 0.0 | 66.1 | 43.8 | 0.0 |
| LnGrp LOS | E | | | D | E | | F | C | | E | D | |
| Approach Vol, veh/h | | 358 | | | 267 | | | 1696 | | | 629 | |
| Approach Delay, s/veh | | 56.0 | | | 55.7 | | | 40.2 | | | 44.6 | |
| Approach LOS | | E | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.1 | 71.9 | | 21.9 | 41.0 | 38.0 | | 19.1 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | | 18.0 | 36.0 | 22.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 32.2 | | 14.4 | 36.9 | 22.2 | | 11.6 |
| Green Ext Time (p_c), s | 0.0 | 8.7 | | 0.5 | 0.0 | 0.0 | | 0.4 |

**Intersection Summary**

HCM 2010 Ctrl Delay 44.5
HCM 2010 LOS D

**Notes**

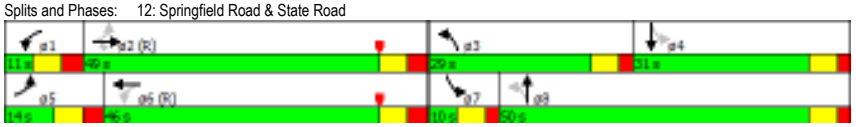
User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 212 | 1022 | 303 | 12 | 1213 | 152 | 479 | 549 | 29 | 115 | 310 | 77 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 10% | 4% | 8% | 25% | 3% | 6% | 3% | 3% | 0% | 2% | 7% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 14.0 | 49.0 | 49.0 | 11.0 | 46.0 | | 29.0 | 50.0 | | 10.0 | 31.0 | |
| Total Split (%) | 11.7% | 40.8% | 40.8% | 9.2% | 38.3% | | 24.2% | 41.7% | | 8.3% | 25.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 212 | 1022 | 303 | 12 | 1213 | 152 | 479 | 549 | 29 | 115 | 310 | 77 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 2 | 0 | 0 | 7 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1685 | 1783 | 1717 | 1397 | 1690 | 1746 | 1756 | 1759 | 1809 | 1791 | 1704 | 1827 |
| Adj Flow Rate, veh/h | 219 | 1054 | 0 | 12 | 1251 | 0 | 494 | 566 | 0 | 119 | 320 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 10 | 4 | 8 | 25 | 3 | 3 | 3 | 3 | 3 | 2 | 7 | 7 |
| Cap, veh/h | 167 | 1321 | 563 | 104 | 1070 | 0 | 395 | 649 | 0 | 156 | 358 | 0 |
| Arrive On Green | 0.07 | 0.39 | 0.00 | 0.02 | 0.34 | 0.00 | 0.20 | 0.37 | 0.00 | 0.08 | 0.42 | 0.00 |
| Sat Flow, veh/h | 1605 | 3387 | 1459 | 1330 | 3295 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Grp Volume(v), veh/h | 219 | 1054 | 0 | 12 | 1251 | 0 | 494 | 566 | 0 | 119 | 320 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1605 | 1694 | 1459 | 1330 | 1605 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Q Serve(g_s), s | 8.0 | 33.1 | 0.0 | 0.7 | 40.9 | 0.0 | 24.0 | 36.0 | 0.0 | 5.0 | 21.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 33.1 | 0.0 | 0.7 | 40.9 | 0.0 | 24.0 | 36.0 | 0.0 | 5.0 | 21.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 167 | 1321 | 563 | 104 | 1070 | 0 | 395 | 649 | 0 | 156 | 358 | 0 |
| V/C Ratio(X) | 1.31 | 0.80 | 0.00 | 0.12 | 1.17 | 0.00 | 1.25 | 0.87 | 0.00 | 0.76 | 0.89 | 0.00 |
| Avail Cap(c_a), veh/h | 167 | 1322 | 569 | 161 | 1094 | 0 | 429 | 660 | 0 | 186 | 369 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 30.2 | 32.5 | 0.0 | 30.4 | 40.0 | 0.0 | 35.9 | 35.7 | 0.0 | 41.0 | 33.7 | 0.0 |
| Incr Delay (d2), s/veh | 176.2 | 5.1 | 0.0 | 0.5 | 86.3 | 0.0 | 132.8 | 12.2 | 0.0 | 14.3 | 22.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 62.6 | 0.1 | 0.0 | 0.0 | 19.9 | 0.0 | 28.6 | 2.1 | 0.0 | 0.0 | 0.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 25.1 | 23.2 | 0.0 | 0.5 | 58.4 | 0.0 | 53.7 | 28.2 | 0.0 | 3.9 | 18.0 | 0.0 |
| LnGrp Delay(d),s/veh | 269.0 | 37.7 | 0.0 | 30.9 | 146.2 | 0.0 | 197.3 | 50.0 | 0.0 | 55.3 | 57.0 | 0.0 |
| LnGrp LOS | F | D | | C | F | | F | D | | E | E | |
| Approach Vol, veh/h | | 1273 | | | 1263 | | | 1060 | | | 439 | |
| Approach Delay, s/veh | | 77.5 | | | 145.1 | | | 118.7 | | | 56.6 | |
| Approach LOS | | E | | | F | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.1 | 52.8 | 29.0 | 30.1 | 14.0 | 46.9 | 10.0 | 49.1 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 42.0 | 23.0 | 25.0 | 7.0 | 39.0 | 4.0 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 35.6 | 26.5 | 23.5 | 10.5 | 43.4 | 7.5 | 38.5 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 1.9 |

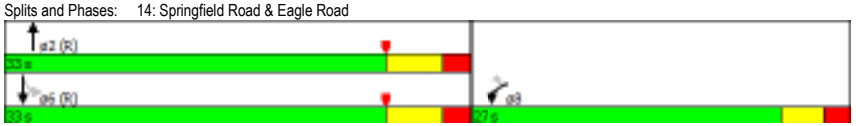
**Intersection Summary**

HCM 2010 Ctrl Delay 107.2
HCM 2010 LOS F

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 576 | 250 | 634 | 275 | 39 | 348 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 27.0 | 27.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (%) | 45.0% | 45.0% | 55.0% | | 55.0% | 55.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 59 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 576 | 250 | 634 | 275 | 39 | 348 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1757 | 1791 | 1740 | 1791 | 1809 | 1738 |
| Adj Flow Rate, veh/h | 626 | 199 | 689 | 256 | 42 | 378 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 2 | 4 | 4 |
| Cap, veh/h | 641 | 584 | 696 | 99 | 66 | 348 |
| Arrive On Green | 0.38 | 0.38 | 0.47 | 0.45 | 0.45 | 0.47 |
| Sat Flow, veh/h | 1673 | 1523 | 1211 | 450 | 0 | 745 |
| Grp Volume(v), veh/h | 626 | 199 | 0 | 945 | 420 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1673 | 1523 | 0 | 1661 | 745 | 0 |
| Q Serve(g_s), s | 22.1 | 5.6 | 0.0 | 28.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 22.1 | 5.6 | 0.0 | 28.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.27 | 0.10 | |
| Lane Grp Cap(c), veh/h | 641 | 584 | 0 | 795 | 401 | 0 |
| V/C Ratio(X) | 0.98 | 0.34 | 0.00 | 1.19 | 1.05 | 0.00 |
| Avail Cap(c_a), veh/h | 641 | 584 | 0 | 775 | 401 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.70 | 0.00 |
| Uniform Delay (d), s/veh | 18.5 | 13.1 | 0.0 | 16.1 | 17.5 | 0.0 |
| Incr Delay (d2), s/veh | 29.4 | 0.3 | 0.0 | 97.5 | 50.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 11.6 | 0.0 | 0.0 | 3.8 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 24.3 | 4.3 | 0.0 | 63.2 | 23.3 | 0.0 |
| LnGrp Delay(d),s/veh | 59.5 | 13.5 | 0.0 | 117.4 | 67.8 | 0.0 |
| LnGrp LOS | E | B | | F | F | |
| Approach Vol, veh/h | 825 | | 945 | | 420 | |
| Approach Delay, s/veh | 48.4 | | 117.4 | | 67.8 | |
| Approach LOS | D | | F | | E | |

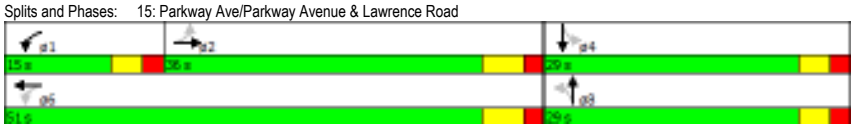
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 33.0 | | | | 33.0 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | | | 27.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 30.0 | | | | 29.0 | | 24.6 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 81.9 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 6 | 813 | 106 | 157 | 594 | 5 | 398 | 15 | 386 | 8 | 10 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 596 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 36.0 | 36.0 | | 15.0 | 51.0 | | 29.0 | 29.0 | | 29.0 | 29.0 | |
| Total Split (%) | 45.0% | 45.0% | | 18.8% | 63.8% | | 36.3% | 36.3% | | 36.3% | 36.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 74 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 6 | 813 | 106 | 157 | 594 | 5 | 398 | 15 | 386 | 8 | 10 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1717 | 1791 | 1791 | 1628 | 1791 | 1721 | 1735 | 1773 | 1827 | 1761 | 1827 |
| Adj Flow Rate, veh/h | 6 | 838 | 109 | 162 | 612 | 2 | 410 | 15 | 338 | 8 | 10 | 12 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 55 | 1439 | 186 | 83 | 784 | 3 | 312 | 273 | 509 | 94 | 114 | 95 |
| Arrive On Green | 0.49 | 0.51 | 0.49 | 0.49 | 0.51 | 0.49 | 0.36 | 0.36 | 0.35 | 0.35 | 0.36 | 0.35 |
| Sat Flow, veh/h | 5 | 2837 | 367 | 3 | 1546 | 6 | 1279 | 63 | 1421 | 154 | 413 | 378 |
| Grp Volume(v), veh/h | 508 | 0 | 445 | 283 | 0 | 493 | 410 | 0 | 353 | 30 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1711 | 0 | 1498 | 74 | 0 | 1481 | 1279 | 0 | 1484 | 945 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 14.4 | 29.0 | 0.0 | 17.0 | 11.4 | 0.0 | 13.9 | 0.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 14.5 | 0.0 | 14.4 | 29.0 | 0.0 | 17.0 | 25.0 | 0.0 | 13.9 | 14.1 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.25 | 0.57 | | 0.00 | 1.00 | | 0.96 | 0.27 | | 0.40 |
| Lane Grp Cap(c), veh/h | 896 | 0 | 759 | 0 | 0 | 751 | 312 | 0 | 539 | 293 | 0 | 0 |
| V/C Ratio(X) | 0.57 | 0.00 | 0.59 | 0.00 | 0.00 | 0.66 | 1.31 | 0.00 | 0.65 | 0.10 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 896 | 0 | 759 | 0 | 0 | 987 | 448 | 0 | 538 | 395 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 12.0 | 0.0 | 12.0 | 0.0 | 0.0 | 12.6 | 26.8 | 0.0 | 18.9 | 16.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 1.2 | 0.0 | 0.0 | 1.0 | 159.3 | 0.0 | 2.9 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.7 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.6 | 0.0 | 10.3 | 0.0 | 0.0 | 11.4 | 36.5 | 0.0 | 10.2 | 0.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 12.8 | 0.0 | 13.2 | 0.0 | 0.0 | 13.6 | 194.8 | 0.0 | 21.8 | 16.2 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | B | F | | C | B | | |
| Approach Vol, veh/h | | 953 | | | 776 | | | 763 | | | 30 | |
| Approach Delay, s/veh | | 13.0 | | | 8.6 | | | 114.8 | | | 16.2 | |
| Approach LOS | | B | | | A | | | F | | | B | |

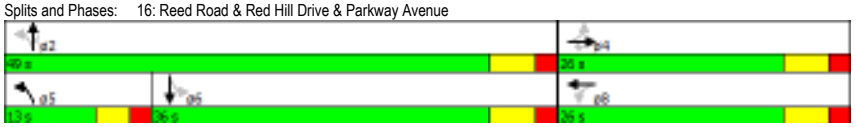
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 29.0 | | 40.0 | | 29.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | 24.0 | | 45.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 16.5 | | 16.1 | | 31.0 | | 27.5 |
| Green Ext Time (p_c), s | | 6.6 | | 2.4 | | 3.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.5 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 69 | 60 | 277 | 31 | 98 | 4 | 277 | 711 | 122 | 4 | 195 | 44 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 13.0 | 49.0 | 49.0 | 36.0 | 36.0 | |
| Total Split (%) | 34.7% | 34.7% | 34.7% | 34.7% | 34.7% | | 17.3% | 65.3% | 65.3% | 48.0% | 48.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 60.4 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 69 | 60 | 277 | 31 | 98 | 4 | 277 | 711 | 122 | 4 | 195 | 44 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1618 | 1680 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1806 | 1836 |
| Adj Flow Rate, veh/h | 71 | 62 | 245 | 32 | 101 | 4 | 286 | 733 | 114 | 4 | 201 | 42 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 268 | 198 | 367 | 142 | 358 | 12 | 695 | 926 | 811 | 76 | 398 | 82 |
| Arrive On Green | 0.24 | 0.26 | 0.26 | 0.24 | 0.26 | 0.24 | 0.18 | 0.54 | 0.54 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 607 | 771 | 1428 | 207 | 1403 | 48 | 1500 | 1713 | 1499 | 8 | 1434 | 295 |
| Grp Volume(v), veh/h | 133 | 0 | 245 | 137 | 0 | 0 | 286 | 733 | 114 | 247 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1378 | 0 | 1428 | 1658 | 0 | 0 | 1500 | 1713 | 1499 | 1738 | 0 | 0 |
| Q Serve(g_s), s | 0.4 | 0.0 | 7.6 | 0.0 | 0.0 | 0.0 | 5.7 | 16.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.5 | 0.0 | 7.6 | 3.0 | 0.0 | 0.0 | 5.7 | 16.9 | 1.9 | 5.9 | 0.0 | 0.0 |
| Prop In Lane | 0.53 | | 1.00 | 0.23 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.17 |
| Lane Grp Cap(c), veh/h | 438 | 0 | 367 | 480 | 0 | 0 | 695 | 926 | 811 | 521 | 0 | 0 |
| V/C Ratio(X) | 0.30 | 0.00 | 0.67 | 0.29 | 0.00 | 0.00 | 0.41 | 0.79 | 0.14 | 0.47 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 658 | 0 | 609 | 744 | 0 | 0 | 696 | 1529 | 1339 | 1120 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.1 | 0.0 | 16.5 | 14.9 | 0.0 | 0.0 | 7.4 | 9.1 | 5.7 | 15.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 2.1 | 0.3 | 0.0 | 0.0 | 0.4 | 1.6 | 0.1 | 0.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.8 | 0.0 | 5.9 | 2.8 | 0.0 | 0.0 | 4.2 | 12.9 | 1.4 | 5.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 15.5 | 0.0 | 18.8 | 15.2 | 0.0 | 0.0 | 7.8 | 10.7 | 5.7 | 15.8 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | B | A | B | | |
| Approach Vol, veh/h | | 378 | | | 137 | | | 1133 | | | 247 | |
| Approach Delay, s/veh | | 17.6 | | | 15.2 | | | 9.5 | | | 15.8 | |
| Approach LOS | | B | | | B | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 31.7 | | 17.6 | 13.0 | 18.7 | | 17.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 43.0 | | 20.0 | 8.0 | 30.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | | 19.4 | | 10.1 | 8.2 | 7.9 | | 5.0 |
| Green Ext Time (p_c), s | | 4.8 | | 1.5 | 0.0 | 4.7 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 46 | 387 | 52 | 46 | 385 | 62 | 42 | 0 | 28 | 40 | 0 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 175 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 6% | 2% | 2% | 9% | 5% | 2% | 2% | 2% | 3% | 2% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 21.0 | 21.0 | 21.0 | 9.0 | 21.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 12.0 | 39.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (%) | 45.0% | 45.0% | 45.0% | 20.0% | 65.0% | | 35.0% | 35.0% | | 35.0% | 35.0% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 15 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 46 | 387 | 52 | 46 | 385 | 62 | 42 | 0 | 28 | 40 | 0 | 12 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1705 | 1765 | 1729 | 1627 | 1764 | 1765 | 1765 | 1800 | 1800 | 1728 | 1800 |
| Adj Flow Rate, veh/h | 49 | 416 | 56 | 49 | 414 | 67 | 45 | 0 | 30 | 43 | 0 | 13 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 6 | 6 | 2 | 2 | 9 | 9 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 222 | 1750 | 971 | 93 | 1052 | 170 | 262 | 0 | 145 | 181 | 10 | 25 |
| Arrive On Green | 0.63 | 0.65 | 0.65 | 0.06 | 0.77 | 0.75 | 0.10 | 0.00 | 0.08 | 0.08 | 0.00 | 0.08 |
| Sat Flow, veh/h | 232 | 2704 | 1500 | 1647 | 1366 | 221 | 1311 | 0 | 1500 | 771 | 102 | 264 |
| Grp Volume(v), veh/h | 237 | 228 | 56 | 49 | 0 | 481 | 45 | 0 | 30 | 56 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1462 | 1474 | 1500 | 1647 | 0 | 1588 | 1311 | 0 | 1500 | 1138 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 3.9 | 0.8 | 1.7 | 0.0 | 6.0 | 0.0 | 0.0 | 1.1 | 2.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.5 | 3.9 | 0.8 | 1.7 | 0.0 | 6.0 | 1.5 | 0.0 | 1.1 | 3.1 | 0.0 | 0.0 |
| Prop In Lane | 0.21 | | 1.00 | 1.00 | | 0.14 | 1.00 | | 1.00 | 0.77 | | 0.23 |
| Lane Grp Cap(c), veh/h | 994 | 954 | 971 | 93 | 0 | 1223 | 262 | 0 | 145 | 197 | 0 | 0 |
| V/C Ratio(X) | 0.24 | 0.24 | 0.06 | 0.53 | 0.00 | 0.39 | 0.17 | 0.00 | 0.21 | 0.28 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 994 | 954 | 971 | 220 | 0 | 1223 | 507 | 0 | 425 | 442 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 4.4 | 4.4 | 3.9 | 27.5 | 0.0 | 2.3 | 25.2 | 0.0 | 25.5 | 26.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.6 | 0.1 | 4.6 | 0.0 | 1.0 | 0.3 | 0.0 | 0.7 | 0.8 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.3 | 3.0 | 0.6 | 1.6 | 0.0 | 5.2 | 1.3 | 0.0 | 0.9 | 1.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 5.0 | 5.0 | 4.0 | 32.2 | 0.0 | 3.3 | 25.5 | 0.0 | 26.2 | 27.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | C | | A | C | | C | C | | |
| Approach Vol, veh/h | | 521 | | | 530 | | | 75 | | | 56 | |
| Approach Delay, s/veh | | 4.9 | | | 5.9 | | | 25.7 | | | 27.3 | |
| Approach LOS | | A | | | A | | | C | | | C | |

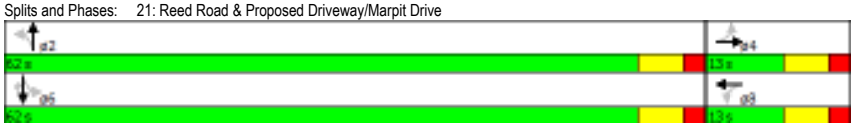
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.4 | 42.8 | | 9.8 | | 50.2 | | 9.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 22.0 | | 16.0 | | 34.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 6.4 | | 5.1 | | 8.0 | | 4.0 |
| Green Ext Time (p_c), s | 0.0 | 3.6 | | 0.3 | | 4.1 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.7 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 14 | 4 | 21 | 78 | 10 | 30 | 37 | 1057 | 219 | 44 | 235 | 11 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 484 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 11.0 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 50% | 2% | 14% | 2% | 1% | 6% | 19% | 7% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 62.0 | 62.0 | | 62.0 | 62.0 | 62.0 |
| Total Split (%) | 17.3% | 17.3% | | 17.3% | 17.3% | | 82.7% | 82.7% | | 82.7% | 82.7% | 82.7% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 80.2 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 14 | 4 | 21 | 78 | 10 | 30 | 37 | 1057 | 219 | 44 | 235 | 11 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1200 | 1623 | 1800 | 1765 | 1767 | 1800 | 1513 | 1682 | 1765 |
| Adj Flow Rate, veh/h | 15 | 4 | 22 | 82 | 11 | 29 | 39 | 1113 | 220 | 46 | 247 | 12 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 1 | 1 | 19 | 7 | 2 |
| Cap, veh/h | 201 | 25 | 139 | 183 | 42 | 111 | 856 | 1174 | 144 | 97 | 1279 | 1140 |
| Arrive On Green | 0.11 | 0.11 | 0.09 | 0.11 | 0.11 | 0.11 | 0.76 | 0.76 | 0.75 | 0.76 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1290 | 236 | 1299 | 888 | 396 | 1043 | 1057 | 1434 | 283 | 332 | 1682 | 1500 |
| Grp Volume(v), veh/h | 15 | 0 | 26 | 82 | 0 | 40 | 39 | 0 | 1333 | 46 | 247 | 12 |
| Grp Sat Flow(s),veh/h/ln | 1290 | 0 | 1535 | 888 | 0 | 1439 | 1057 | 0 | 1717 | 332 | 1682 | 1500 |
| Q Serve(g_s), s | 0.8 | 0.0 | 1.2 | 6.9 | 0.0 | 1.9 | 0.8 | 0.0 | 57.0 | 0.5 | 3.1 | 0.1 |
| Cycle Q Clear(g_c), s | 2.7 | 0.0 | 1.2 | 7.5 | 0.0 | 1.9 | 3.9 | 0.0 | 57.0 | 57.0 | 3.1 | 0.1 |
| Prop In Lane | 1.00 | | 0.85 | 1.00 | | 0.73 | 1.00 | | 0.17 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 201 | 0 | 164 | 183 | 0 | 153 | 856 | 0 | 1318 | 97 | 1279 | 1140 |
| V/C Ratio(X) | 0.07 | 0.00 | 0.16 | 0.45 | 0.00 | 0.26 | 0.05 | 0.00 | 1.01 | 0.47 | 0.19 | 0.01 |
| Avail Cap(c_a), veh/h | 201 | 0 | 164 | 183 | 0 | 153 | 856 | 0 | 1305 | 98 | 1279 | 1140 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.0 | 0.0 | 30.8 | 33.6 | 0.0 | 30.8 | 3.1 | 0.0 | 9.1 | 37.5 | 2.5 | 2.2 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.4 | 1.7 | 0.0 | 0.9 | 0.0 | 0.0 | 27.7 | 3.5 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.5 | 0.0 | 0.9 | 3.2 | 0.0 | 1.4 | 0.4 | 0.0 | 67.0 | 1.9 | 2.5 | 0.1 |
| LnGrp Delay(d),s/veh | 32.2 | 0.0 | 31.3 | 35.3 | 0.0 | 31.7 | 3.1 | 0.0 | 42.1 | 41.0 | 2.6 | 2.2 |
| LnGrp LOS | C | | C | D | | C | A | | F | D | A | A |
| Approach Vol, veh/h | | 41 | | | 122 | | | 1372 | | | 305 | |
| Approach Delay, s/veh | | 31.6 | | | 34.1 | | | 41.0 | | | 8.4 | |
| Approach LOS | | C | | | C | | | D | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.0 | | 13.0 | | 62.0 | | 13.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 56.0 | | 7.0 | | 56.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | | 59.0 | | 5.2 | | 59.5 | | 10.0 |
| Green Ext Time (p_c), s | | 0.0 | | 0.1 | | 0.0 | | 0.0 |

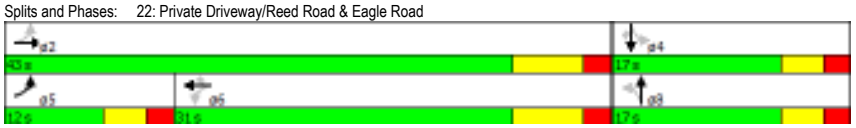
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.9 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 443 | 148 | 2 | 2 | 422 | 868 | 5 | 3 | 3 | 248 | 3 | 77 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 43.0 | | 31.0 | 31.0 | 31.0 | 17.0 | 17.0 | | 17.0 | 17.0 | 17.0 |
| Total Split (%) | 20.0% | 71.7% | | 51.7% | 51.7% | 51.7% | 28.3% | 28.3% | | 28.3% | 28.3% | 28.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 58.4
Natural Cycle: 80
Control Type: Semi Act-Uncoord

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 443 | 148 | 2 | 2 | 422 | 868 | 5 | 3 | 3 | 248 | 3 | 77 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1773 | 1647 | 1790 |
| Adj Flow Rate, veh/h | 471 | 157 | 2 | 2 | 449 | 829 | 5 | 3 | 3 | 264 | 3 | 73 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 66 | 66 | 3 |
| Cap, veh/h | 393 | 1084 | 14 | 61 | 706 | 606 | 87 | 41 | 15 | 305 | 2 | 330 |
| Arrive On Green | 0.13 | 0.62 | 0.60 | 0.40 | 0.42 | 0.42 | 0.20 | 0.22 | 0.20 | 0.20 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1782 | 1758 | 22 | 1 | 1694 | 1455 | 0 | 189 | 71 | 858 | 10 | 1522 |
| Grp Volume(v), veh/h | 471 | 0 | 159 | 451 | 0 | 829 | 11 | 0 | 0 | 267 | 0 | 73 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 259 | 0 | 0 | 868 | 0 | 1522 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.3 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.3 | 12.9 | 0.0 | 25.0 | 12.0 | 0.0 | 0.0 | 12.0 | 0.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 0.99 | | 1.00 |
| Lane Grp Cap(c), veh/h | 393 | 0 | 1098 | 738 | 0 | 606 | 139 | 0 | 0 | 293 | 0 | 330 |
| V/C Ratio(X) | 1.20 | 0.00 | 0.14 | 0.61 | 0.00 | 1.37 | 0.08 | 0.00 | 0.00 | 0.91 | 0.00 | 0.22 |
| Avail Cap(c_a), veh/h | 449 | 0 | 1098 | 738 | 0 | 606 | 139 | 0 | 0 | 293 | 0 | 330 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.2 | 0.0 | 4.8 | 14.0 | 0.0 | 17.5 | 19.6 | 0.0 | 0.0 | 25.7 | 0.0 | 19.3 |
| Incr Delay (d2), s/veh | 111.4 | 0.0 | 0.1 | 1.9 | 0.0 | 175.7 | 0.2 | 0.0 | 0.0 | 30.8 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 37.2 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 38.5 | 0.0 | 2.0 | 10.6 | 0.0 | 74.2 | 0.3 | 0.0 | 0.0 | 11.3 | 0.0 | 1.8 |
| LnGrp Delay(d),s/veh | 162.8 | 0.0 | 4.9 | 15.9 | 0.0 | 206.1 | 19.9 | 0.0 | 0.0 | 56.5 | 0.0 | 19.7 |
| LnGrp LOS | F | | A | B | | F | B | | | E | | B |
| Approach Vol, veh/h | | 630 | | | 1280 | | | 11 | | | 340 | |
| Approach Delay, s/veh | | 123.0 | | | 139.1 | | | 19.9 | | | 48.6 | |
| Approach LOS | | F | | | F | | | B | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.0 | | 17.0 | 12.0 | 31.0 | | 17.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 12.0 | 7.0 | 24.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | | 4.3 | | 14.0 | 10.5 | 27.5 | | 14.0 |
| Green Ext Time (p_c), s | | 15.4 | | 0.0 | 0.0 | 0.0 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 120.4 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 873 | 1396 | 0 | 372 | 897 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 919 | 1469 | 0 | 392 | 944 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 52.0 | 68.0 | | 52.0 | 120.0 |
| Total Split (%) | | 43.3% | 56.7% | | 43.3% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 44.0 | 61.0 | | 44.0 | 120.0 |
| Actuated g/C Ratio | | 0.37 | 0.51 | | 0.37 | 1.00 |
| v/c Ratio | | 0.97 | 0.84 | | 0.66 | 0.56 |
| Control Delay | | 44.1 | 29.9 | | 40.1 | 2.5 |
| Queue Delay | | 32.7 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 76.8 | 29.9 | | 40.1 | 2.5 |
| LOS | | E | C | | D | A |
| Approach Delay | | | 29.9 | | | 13.5 |
| Approach LOS | | | C | | | B |
| Queue Length 50th (ft) | | 427 | 387 | | 261 | 32 |
| Queue Length 95th (ft) | | m355 | m295 | | 366 | 60 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 944 | 1743 | | 594 | 1672 |
| Starvation Cap Reductn | | 94 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



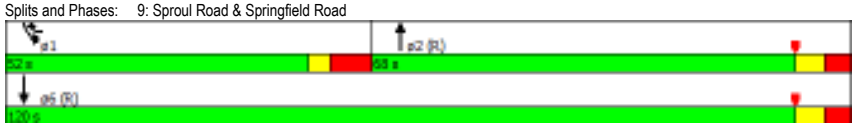


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 1.08 | 0.84 | | 0.66 | 0.56 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 35.6 — Intersection LOS: D
Intersection Capacity Utilization 85.5% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 57 | 16 | 33 | 18 | 22 | 29 | 49 | 649 | 2 | 18 | 194 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 192 | | | 246 | | | 388 | | | 596 | |
| Travel Time (s) | | 5.2 | | | 6.7 | | | 10.6 | | | 16.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 38.8 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 57 | 16 | 33 | 0 | 18 | 22 | 29 | 0 | 49 | 649 | 2 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 16 | 13 | 13 | 2 | 6 | 0 | 0 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 0 | 61 | 17 | 35 | 0 | 19 | 23 | 31 | 0 | 52 | 690 | 2 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.3 | 10.8 | 55.6 |
| HCM LOS | B | B | F |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 7% | 78% | 0% | 26% | 7% |
| Vol Thru, % | 93% | 22% | 0% | 32% | 73% |
| Vol Right, % | 0% | 0% | 100% | 42% | 20% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 700 | 73 | 33 | 69 | 265 |
| LT Vol | 49 | 57 | 0 | 18 | 18 |
| Through Vol | 649 | 16 | 0 | 22 | 194 |
| RT Vol | 2 | 0 | 33 | 29 | 53 |
| Lane Flow Rate | 745 | 78 | 35 | 73 | 282 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 1 | 0.166 | 0.065 | 0.136 | 0.432 |
| Departure Headway (Hd) | 5.009 | 7.789 | 6.635 | 6.694 | 5.512 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 730 | 464 | 542 | 538 | 657 |
| Service Time | 3.025 | 5.489 | 4.349 | 4.709 | 3.52 |
| HCM Lane V/C Ratio | 1.021 | 0.168 | 0.065 | 0.136 | 0.429 |
| HCM Control Delay | 55.6 | 12 | 9.8 | 10.8 | 12.7 |
| HCM Lane LOS | F | B | A | B | B |
| HCM 95th-tile Q | 16.4 | 0.6 | 0.2 | 0.5 | 2.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 194 | 53 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 19 | 206 | 56 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 12.7 |
| HCM LOS | B |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 33 | 2438 | 56 | 50 | 1312 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 33 | 2438 | 56 | 50 | 1312 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 37 | 2709 | 62 | 56 | 1458 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3580 | 1386 | 0 | 0 | 2771 | 0 |
| Stage 1 | 2740 | - | - | - | - | - |
| Stage 2 | 840 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | 3 | 120 | - | - | 149 | - |
| Stage 1 | 26 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 3 | 120 | - | - | 149 | - |
| Mov Cap-2 Maneuver | 3 | - | - | - | - | - |
| Stage 1 | 26 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 47.7 | 0 | 20.7 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 120 | 149 | - |
| HCM Lane V/C Ratio | - | - | 0.306 | 0.373 | - |
| HCM Control Delay (s) | - | - | 47.7 | 42.9 | 19.9 |
| HCM Lane LOS | - | - | E | E | C |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 1.6 | - |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 43 | 48 | 59 | 832 | 489 | 409 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 43 | 48 | 59 | 832 | 489 | 409 |
| Conflicting Peds, #/hr | 0 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 11 | 2 | 4 | 5 | 5 |
| Mvmt Flow | 44 | 49 | 61 | 858 | 504 | 422 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1694 | 716 | 926 | 0 | - | 0 |
| Stage 1 | 715 | - | - | - | - | - |
| Stage 2 | 979 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.31 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.2 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *110 | 503 | 475 | - | - | - |
| Stage 1 | *571 | - | - | - | - | - |
| Stage 2 | *385 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *83 | 503 | 474 | - | - | - |
| Mov Cap-2 Maneuver | *83 | - | - | - | - | - |
| Stage 1 | *571 | - | - | - | - | - |
| Stage 2 | *290 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 64.1 | 0.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 474 | - | 148 | - | - |
| HCM Lane V/C Ratio | 0.128 | - | 0.634 | - | - |
| HCM Control Delay (s) | 13.7 | 0 | 64.1 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 3.4 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 189 | 416 | 10 | 0 | 366 | 61 | 0 | 0 | 2 | 39 | 0 | 72 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 366 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 10.0 | | | 7.8 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 2% | 8% | 17% | 2% | 2% | 2% | 0% | 2% | 10% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

**Intersection Summary**

Area Type: Other





**Intersection**

Int Delay, s/veh 2.6

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 189 | 416 | 10 | 0 | 366 | 61 | 0 | 0 | 2 | 39 | 0 | 72 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 5 | 2 | 2 | 8 | 17 | 2 | 2 | 2 | 0 | 2 | 10 |
| Mvmt Flow | 201 | 443 | 11 | 0 | 389 | 65 | 0 | 0 | 2 | 41 | 0 | 77 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 454 | 0 | 0 | 453 | 0 | 0 | 1310 | 1304 | 227 | 1045 | 1277 | 422 |
| Stage 1 | - | - | - | - | - | - | 850 | 850 | - | 422 | 422 | - |
| Stage 2 | - | - | - | - | - | - | 460 | 454 | - | 623 | 855 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.5 | 6.53 | 6.7 | 7.5 | 6.53 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.3 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 3.1 | 2.8 | 4.019 | 3.1 |
| Pot Cap-1 Maneuver | *1126 | - | - | 1064 | - | - | *267 | *258 | 838 | *490 | *270 | *872 |
| Stage 1 | - | - | - | - | - | - | *397 | *376 | - | *965 | *672 | - |
| Stage 2 | - | - | - | - | - | - | *965 | *672 | - | *509 | *374 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *1126 | - | - | 1064 | - | - | *210 | *212 | 838 | *422 | *222 | *872 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *210 | *212 | - | *422 | *222 | - |
| Stage 1 | - | - | - | - | - | - | *326 | *309 | - | *793 | *672 | - |
| Stage 2 | - | - | - | - | - | - | *880 | *672 | - | *417 | *307 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 9.3 | 12 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 838 | * 1126 | - | - | 1064 | - | - | 634 |
| HCM Lane V/C Ratio | 0.003 | 0.179 | - | - | - | - | - | 0.186 |
| HCM Control Delay (s) | 9.3 | 8.9 | - | - | 0 | - | - | 12 |
| HCM Lane LOS | A | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0.6 | - | - | 0 | - | - | 0.7 |

**Notes**

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 9 | 105 | 1018 | 30 | 191 | 303 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 9 | 105 | 1018 | 30 | 191 | 303 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 9 | 107 | 1039 | 31 | 195 | 309 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1738 | 1039 | 0 | 0 | 1039 | 0 |
| Stage 1 | 1039 | - | - | - | - | - |
| Stage 2 | 699 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 115 | 279 | - | - | 554 | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 579 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 66 | 279 | - | - | 554 | - |
| Mov Cap-2 Maneuver | 196 | - | - | - | - | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 333 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 28.1 | 0 | 5.8 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 270 | 554 | - |
| HCM Lane V/C Ratio | - | - | 0.431 | 0.352 | - |
| HCM Control Delay (s) | - | - | 28.1 | 15 | 0 |
| HCM Lane LOS | - | - | D | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.1 | 1.6 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 54 | 226 | 724 | 138 | 49 | 80 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Heavy Vehicles (%) | 15% | 8% | 3% | 8% | 19% | 17% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 14.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 54 | 226 | 724 | 138 | 49 | 80 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 15 | 8 | 3 | 8 | 19 | 17 |
| Mvmt Flow | 73 | 305 | 978 | 186 | 66 | 108 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1165 | 0 | - | 0 | 1523 | 582 |
| Stage 1 | - | - | - | - | 1072 | - |
| Stage 2 | - | - | - | - | 451 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.4 | 7.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.2 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 611 | - | - | - | 93 | 454 |
| Stage 1 | - | - | - | - | 254 | - |
| Stage 2 | - | - | - | - | 662 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 611 | - | - | - | 82 | 454 |
| Mov Cap-2 Maneuver | - | - | - | - | 82 | - |
| Stage 1 | - | - | - | - | 254 | - |
| Stage 2 | - | - | - | - | 583 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.3 | 0 | 137.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 611 | - | - | - | 167 |
| HCM Lane V/C Ratio | 0.119 | - | - | - | 1.044 |
| HCM Control Delay (s) | 11.7 | - | - | - | 137.5 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 8.6 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 248 | 33 | 56 | 461 | 257 | 339 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1409 | | | 623 | 630 | |
| Travel Time (s) | 32.0 | | | 14.2 | 14.3 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 93.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 248 | 33 | 56 | 461 | 257 | 339 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 6 | 0 | 2 | 4 | 4 | 1 |
| Mvmt Flow | 285 | 38 | 64 | 530 | 295 | 390 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 286 | 0 | 945 | 286 |
| Stage 1 | - | - | - | - | 286 | - |
| Stage 2 | - | - | - | - | 659 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.84 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.84 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 958 | - | ~ 170 | 727 |
| Stage 1 | - | - | - | - | 723 | - |
| Stage 2 | - | - | - | - | 371 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 958 | - | ~ 154 | 726 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 154 | - |
| Stage 1 | - | - | - | - | 722 | - |
| Stage 2 | - | - | - | - | 336 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1 | 218.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 154 | 726 | - | - | 958 | - |
| HCM Lane V/C Ratio | 1.918 | 0.537 | - | - | 0.067 | - |
| HCM Control Delay (s) | $ 485.7 | 15.6 | - | - | 9 | 0 |
| HCM Lane LOS | F | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 22.6 | 3.2 | - | - | 0.2 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 26 | 2267 | 58 | 53 | 1330 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 14 | 12 | 13 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 2267 | 58 | 53 | 1330 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 5 |
| Mvmt Flow | 0 | 27 | 2337 | 60 | 55 | 1371 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3162 | 1198 | 0 | 0 | 2397 | 0 |
| Stage 1 | 2367 | - | - | - | - | - |
| Stage 2 | 795 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *43 | *533 | - | - | *644 | - |
| Stage 1 | *552 | - | - | - | - | - |
| Stage 2 | *643 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *39 | *533 | - | - | *644 | - |
| Mov Cap-2 Maneuver | *278 | - | - | - | - | - |
| Stage 1 | *552 | - | - | - | - | - |
| Stage 2 | *588 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.1 | 0 | 0.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 533 | * 644 | - |
| HCM Lane V/C Ratio | - | - | 0.05 | 0.085 | - |
| HCM Control Delay (s) | - | - | 12.1 | 11.1 | - |
| HCM Lane LOS | - | - | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.3 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 403 | 0 | 0 | 418 | 7 | 4 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 9% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 403 | 0 | 0 | 418 | 7 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 9 | 2 | 2 | 9 | 2 | 2 |
| Mvmt Flow | 424 | 0 | 0 | 440 | 7 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 424 | 0 | 864 | 212 |
| Stage 1 | - | - | - | - | 424 | - |
| Stage 2 | - | - | - | - | 440 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | - | - | 1228 | - | 406 | *1107 |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 703 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | 1228 | - | 406 | *1107 |
| Mov Cap-2 Maneuver | - | - | - | - | 406 | - |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 703 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 12 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 527 | - | - | 1228 | - |
| HCM Lane V/C Ratio | 0.022 | - | - | - | - |
| HCM Control Delay (s) | 12 | - | - | 0 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 547 | 392 | 9 | 0 | 57 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 5% | 3% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 547 | 392 | 9 | 0 | 57 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 3 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 570 | 408 | 9 | 0 | 59 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 418 | 0 | - | 0 | 698 | 209 |
| Stage 1 | - | - | - | - | 413 | - |
| Stage 2 | - | - | - | - | 285 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1234 | - | - | - | 515 | *1035 |
| Stage 1 | - | - | - | - | 922 | - |
| Stage 2 | - | - | - | - | 793 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | 1234 | - | - | - | 515 | *1035 |
| Mov Cap-2 Maneuver | - | - | - | - | 515 | - |
| Stage 1 | - | - | - | - | 922 | - |
| Stage 2 | - | - | - | - | 793 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 8.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1234 | - | - | - | 1035 |
| HCM Lane V/C Ratio | - | - | - | - | 0.057 |
| HCM Control Delay (s) | 0 | - | - | - | 8.7 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 4 | 28 | 71 | 178 | 84 | 4 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 28 | 71 | 178 | 84 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 4 | 30 | 76 | 189 | 89 | 4 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 431 | 91 | 94 | 0 | - | 0 |
| Stage 1 | 91 | - | - | - | - | - |
| Stage 2 | 340 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 662 | 1032 | 1115 | - | - | - |
| Stage 1 | 1087 | - | - | - | - | - |
| Stage 2 | 826 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 612 | 1032 | 1115 | - | - | - |
| Mov Cap-2 Maneuver | 612 | - | - | - | - | - |
| Stage 1 | 1087 | - | - | - | - | - |
| Stage 2 | 763 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.9 | 2.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1115 | - | 950 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | 0.036 | - | - |
| HCM Control Delay (s) | 8.5 | 0 | 8.9 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.1 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 44 | 1680 | 50 | 0 | 1408 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 130 | | 459 | | | 611 |
| Travel Time (s) | 3.5 | | 7.8 | | | 10.4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 4% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 44 | 1680 | 50 | 0 | 1408 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 4 |
| Mvmt Flow | 0 | 45 | 1714 | 51 | 0 | 1437 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2432 | 857 | 0 | 0 | 1714 | 0 |
| Stage 1 | 1714 | - | - | - | - | - |
| Stage 2 | 718 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *16 | *445 | - | - | *538 | - |
| Stage 1 | *461 | - | - | - | - | - |
| Stage 2 | *617 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *16 | *445 | - | - | *538 | - |
| Mov Cap-2 Maneuver | *248 | - | - | - | - | - |
| Stage 1 | *461 | - | - | - | - | - |
| Stage 2 | *617 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 445 | * 538 | - |
| HCM Lane V/C Ratio | - | - | 0.101 | - | - |
| HCM Control Delay (s) | - | - | 14 | 0 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0 | - |

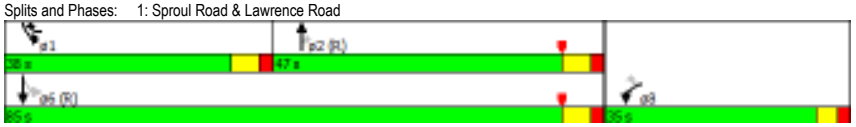
| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 553 | 587 | 1291 | 474 | 540 | 1653 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 35.0 | 38.0 | 47.0 | 47.0 | 38.0 | 85.0 |
| Total Split (%) | 29.2% | 31.7% | 39.2% | 39.2% | 31.7% | 70.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 553 | 587 | 1291 | 474 | 540 | 1653 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 576 | 549 | 1345 | 410 | 562 | 1722 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 430 | 792 | 1179 | 549 | 555 | 2395 |
| Arrive On Green | 0.26 | 0.26 | 0.47 | 0.47 | 0.28 | 0.67 |
| Sat Flow, veh/h | 1663 | 1485 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 576 | 549 | 1345 | 410 | 562 | 1722 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 31.0 | 31.0 | 42.0 | 25.7 | 33.0 | 36.8 |
| Cycle Q Clear(g_c), s | 31.0 | 31.0 | 42.0 | 25.7 | 33.0 | 36.8 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 430 | 792 | 1179 | 549 | 555 | 2395 |
| V/C Ratio(X) | 1.34 | 0.69 | 1.14 | 0.75 | 1.01 | 0.72 |
| Avail Cap(c_a), veh/h | 430 | 792 | 1179 | 549 | 555 | 2395 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.09 | 0.09 | 0.43 | 0.43 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.5 | 20.7 | 32.1 | 27.7 | 37.1 | 12.8 |
| Incr Delay (d2), s/veh | 154.7 | 0.2 | 68.2 | 4.0 | 41.3 | 1.9 |
| Initial Q Delay(d3),s/veh | 18.5 | 0.0 | 8.0 | 0.0 | 31.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 60.0 | 15.3 | 56.6 | 15.4 | 49.5 | 25.6 |
| LnGrp Delay(d),s/veh | 217.7 | 21.0 | 108.2 | 31.7 | 109.9 | 14.7 |
| LnGrp LOS | F | C | F | C | F | B |
| Approach Vol, veh/h | 1125 | | 1755 | | | 2284 |
| Approach Delay, s/veh | 121.7 | | 90.4 | | | 38.1 |
| Approach LOS | F | | F | | | D |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 38.0 | 47.0 | | | | 85.0 | | 35.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 32.0 | 41.0 | | | | 79.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 35.5 | 44.5 | | | | 39.3 | | 33.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 28.2 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 74.1 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 45 | 253 | 13 | 215 | 41 | 1503 | 129 | 191 | 2144 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 633 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.8 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | 19.0 | 10.0 | 61.0 | 61.0 | 19.0 | 70.0 | |
| Total Split (%) | 33.3% | 33.3% | | 33.3% | 33.3% | 15.8% | 8.3% | 50.8% | 50.8% | 15.8% | 58.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 13 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 45 | 253 | 13 | 215 | 41 | 1503 | 129 | 191 | 2144 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1764 | 1800 | 1764 | 1764 | 1747 | 1764 | 1747 | 1835 | 1800 | 1782 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 45 | 258 | 13 | 201 | 42 | 1534 | 0 | 195 | 2188 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 38 | 39 | 40 | 198 | 7 | 598 | 116 | 1580 | 743 | 362 | 1928 | 10 |
| Arrive On Green | 0.28 | 0.29 | 0.28 | 0.28 | 0.29 | 0.29 | 0.07 | 1.00 | 0.00 | 0.17 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 134 | 137 | 478 | 24 | 1463 | 1680 | 3318 | 1559 | 1714 | 3440 | 30 |
| Grp Volume(v), veh/h | 89 | 0 | 0 | 271 | 0 | 201 | 42 | 1534 | 0 | 195 | 1075 | 1132 |
| Grp Sat Flow(s),veh/h/ln | 272 | 0 | 0 | 502 | 0 | 1463 | 1680 | 1659 | 1559 | 1714 | 1693 | 1777 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.9 | 1.4 | 0.0 | 0.0 | 6.2 | 67.1 | 66.9 |
| Cycle Q Clear(g_c), s | 34.0 | 0.0 | 0.0 | 34.0 | 0.0 | 11.9 | 1.4 | 0.0 | 0.0 | 6.2 | 67.1 | 66.9 |
| Prop In Lane | 0.26 | | 0.51 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 115 | 0 | 0 | 201 | 0 | 598 | 116 | 1580 | 743 | 362 | 945 | 993 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.00 | 1.35 | 0.00 | 0.34 | 0.36 | 0.97 | 0.00 | 0.54 | 1.14 | 1.14 |
| Avail Cap(c_a), veh/h | 115 | 0 | 0 | 201 | 0 | 550 | 144 | 1687 | 793 | 440 | 946 | 993 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.35 | 0.35 | 0.35 |
| Uniform Delay (d), s/veh | 35.5 | 0.0 | 0.0 | 47.6 | 0.0 | 24.5 | 27.5 | 2.9 | 0.0 | 11.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 27.6 | 0.0 | 0.0 | 186.4 | 0.0 | 0.3 | 1.9 | 16.6 | 0.0 | 0.4 | 67.2 | 67.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 6.7 | 6.3 |
| %ile BackOfQ(95%),veh/ln | 5.6 | 0.0 | 0.0 | 30.8 | 0.0 | 8.1 | 1.3 | 23.5 | 0.0 | 5.4 | 33.8 | 35.7 |
| LnGrp Delay(d),s/veh | 63.1 | 0.0 | 0.0 | 234.0 | 0.0 | 24.8 | 29.3 | 19.6 | 0.0 | 12.0 | 73.9 | 74.2 |
| LnGrp LOS | E | | | F | | C | C | B | | B | F | F |
| Approach Vol, veh/h | | 89 | | | 472 | | | 1576 | | | 2402 | |
| Approach Delay, s/veh | | 63.1 | | | 144.9 | | | 19.8 | | | 69.0 | |
| Approach LOS | | E | | | F | | | B | | | E | |

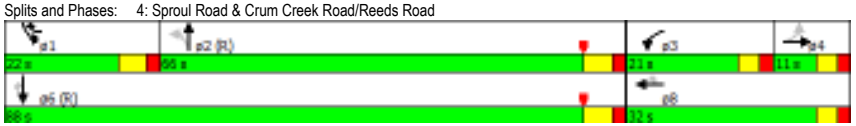
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.0 | 66.0 | | 40.0 | 7.9 | 72.1 | | 40.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 14.0 | 55.0 | | 34.0 | 5.0 | 64.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 8.7 | 2.5 | | 36.0 | 3.9 | 69.6 | | 36.0 |
| Green Ext Time (p_c), s | 0.3 | 38.5 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 59.7 |
| HCM 2010 LOS | | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 13 | 22 | 49 | 374 | 36 | 264 | 47 | 1443 | 267 | 419 | 2186 | 93 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 225 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 437 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.4 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 2% | 6% | 1% | 3% | 0% | 3% | 7% | 2% | 2% | 4% | 3% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 11.0 | 11.0 | | 21.0 | 32.0 | 22.0 | 66.0 | 66.0 | | 22.0 | 88.0 | 88.0 |
| Total Split (%) | 9.2% | 9.2% | | 17.5% | 26.7% | 18.3% | 55.0% | 55.0% | | 18.3% | 73.3% | 73.3% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 13 | 22 | 49 | 374 | 36 | 264 | 47 | 1443 | 267 | 419 | 2186 | 93 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1735 | 1818 | 1818 | 1783 | 1836 | 1730 | 1745 | 1853 | 1782 | 1818 | 1836 |
| Adj Flow Rate, veh/h | 14 | 23 | 39 | 390 | 38 | 223 | 49 | 1503 | 216 | 436 | 2277 | 76 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 3 | 2 | 2 | 1 | 3 | 0 | 3 | 7 | 7 | 2 | 4 | 3 |
| Cap, veh/h | 122 | 34 | 57 | 476 | 416 | 585 | 131 | 1943 | 279 | 467 | 2389 | 1066 |
| Arrive On Green | 0.06 | 0.06 | 0.05 | 0.14 | 0.23 | 0.23 | 1.00 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1055 | 579 | 983 | 3359 | 1783 | 1561 | 141 | 3821 | 548 | 3293 | 3454 | 1560 |
| Grp Volume(v), veh/h | 14 | 0 | 62 | 390 | 38 | 223 | 49 | 1070 | 649 | 436 | 2277 | 76 |
| Grp Sat Flow(s),veh/h/ln | 1055 | 0 | 1562 | 1679 | 1783 | 1561 | 141 | 1361 | 1648 | 1647 | 1727 | 1560 |
| Q Serve(g_s), s | 1.5 | 0.0 | 4.7 | 13.5 | 2.0 | 12.5 | 0.0 | 0.0 | 0.0 | 15.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.5 | 0.0 | 4.7 | 13.5 | 2.0 | 12.5 | 0.0 | 0.0 | 0.0 | 15.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.63 | 1.00 | | 1.00 | 1.00 | | 0.33 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 122 | 0 | 91 | 476 | 416 | 585 | 131 | 1384 | 838 | 467 | 2389 | 1066 |
| V/C Ratio(X) | 0.12 | 0.00 | 0.68 | 0.82 | 0.09 | 0.38 | 0.37 | 0.77 | 0.77 | 0.93 | 0.95 | 0.07 |
| Avail Cap(c_a), veh/h | 122 | 0 | 91 | 476 | 416 | 585 | 131 | 1384 | 838 | 467 | 2389 | 1066 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.9 | 0.0 | 55.7 | 50.0 | 36.0 | 27.3 | 0.0 | 0.0 | 0.0 | 42.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 18.6 | 10.9 | 0.1 | 0.4 | 7.9 | 4.3 | 6.9 | 26.2 | 10.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.8 | 0.0 | 4.5 | 11.3 | 1.8 | 9.3 | 0.5 | 1.5 | 2.9 | 13.6 | 6.1 | 0.1 |
| LnGrp Delay(d),s/veh | 54.3 | 0.0 | 74.3 | 60.9 | 36.1 | 27.8 | 7.9 | 4.3 | 6.9 | 68.6 | 10.3 | 0.1 |
| LnGrp LOS | D | | E | E | D | C | A | A | A | E | B | A |
| Approach Vol, veh/h | | 76 | | | 651 | | | 1768 | | | 2789 | |
| Approach Delay, s/veh | | 70.6 | | | 48.1 | | | 5.3 | | | 19.1 | |
| Approach LOS | | E | | | D | | | A | | | B | |

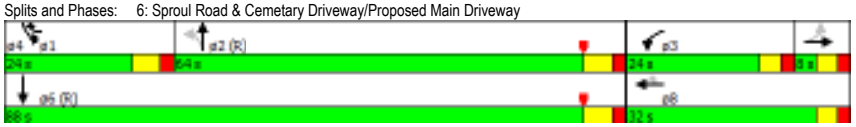
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.0 | 66.0 | 21.0 | 11.0 | | 88.0 | | 32.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 60.0 | 16.0 | 6.0 | | 82.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 18.0 | 2.5 | 16.0 | 6.7 | | 2.5 | | 15.0 |
| Green Ext Time (p_c), s | 0.0 | 48.3 | 0.0 | 0.0 | | 62.9 | | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.8 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 3 | 500 | 0 | 191 | 1 | 1543 | 220 | 203 | 2274 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | 2 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 24.0 | 32.0 | 24.0 | 64.0 | 64.0 | | 24.0 | 88.0 | |
| Total Split (%) | 6.7% | 6.7% | | 20.0% | 26.7% | 20.0% | 53.3% | 53.3% | | 20.0% | 73.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 21 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 0 | 3 | 500 | 0 | 191 | 1 | 1543 | 220 | 203 | 2274 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1872 | 1800 | 1863 | 1791 | 1791 | 1782 | 1833 | 1853 | 1747 | 1835 | 1853 |
| Adj Flow Rate, veh/h | 1 | 0 | 0 | 505 | 0 | 141 | 1 | 1559 | 159 | 205 | 2297 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 |
| Cap, veh/h | 99 | 62 | 0 | 574 | 418 | 579 | 101 | 2054 | 209 | 246 | 2412 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.17 | 0.00 | 0.23 | 0.50 | 0.50 | 0.50 | 0.20 | 0.92 | 0.00 |
| Sat Flow, veh/h | 1183 | 1872 | 0 | 3442 | 1791 | 1519 | 153 | 4091 | 417 | 1664 | 3578 | 0 |
| Grp Volume(v), veh/h | 1 | 0 | 0 | 505 | 0 | 141 | 1 | 1047 | 671 | 205 | 2297 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1183 | 1872 | 0 | 1721 | 1791 | 1519 | 153 | 1375 | 1759 | 1664 | 1743 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 17.2 | 0.0 | 7.6 | 0.6 | 36.8 | 36.8 | 14.2 | 51.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 17.2 | 0.0 | 7.6 | 28.8 | 36.8 | 36.8 | 14.2 | 51.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 99 | 62 | 0 | 574 | 418 | 579 | 101 | 1380 | 883 | 246 | 2412 | 0 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.00 | 0.88 | 0.00 | 0.24 | 0.01 | 0.76 | 0.76 | 0.83 | 0.95 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 62 | 0 | 574 | 418 | 580 | 101 | 1380 | 883 | 263 | 2412 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.60 | 0.60 | 0.60 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 56.1 | 0.0 | 0.0 | 48.8 | 0.0 | 25.3 | 32.4 | 24.0 | 24.0 | 46.8 | 3.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 14.7 | 0.0 | 0.2 | 0.1 | 2.4 | 3.7 | 18.9 | 10.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.1 | 0.0 | 0.0 | 14.4 | 0.0 | 5.8 | 0.0 | 19.1 | 24.3 | 12.4 | 32.8 | 0.0 |
| LnGrp Delay(d),s/veh | 56.2 | 0.0 | 0.0 | 63.6 | 0.0 | 25.5 | 32.6 | 26.4 | 27.8 | 65.6 | 13.6 | 0.0 |
| LnGrp LOS | E | | | E | | C | C | C | C | E | B | |
| Approach Vol, veh/h | | 1 | | | 646 | | | 1719 | | | 2502 | |
| Approach Delay, s/veh | | 56.2 | | | 55.3 | | | 27.0 | | | 17.9 | |
| Approach LOS | | E | | | E | | | C | | | B | |

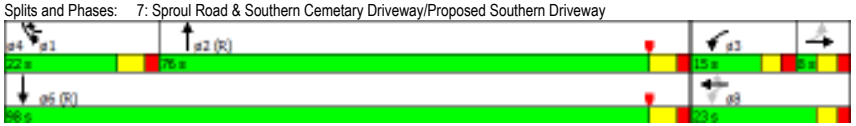
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.8 | 65.3 | 24.0 | 8.0 | | 88.0 | | 32.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 18.0 | 58.0 | 19.0 | 3.0 | | 82.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 16.7 | 39.3 | 19.7 | 2.6 | | 53.5 | | 10.1 |
| Green Ext Time (p_c), s | 0.1 | 17.0 | 0.0 | 0.0 | | 24.9 | | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 9 | 162 | 0 | 112 | 0 | 1800 | 93 | 90 | 2552 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 15.0 | 23.0 | 22.0 | | 76.0 | | 22.0 | 98.0 | |
| Total Split (%) | 6.6% | 6.6% | | 12.4% | 19.0% | 18.2% | | 62.8% | | 18.2% | 81.0% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 121 | |
| Actuated Cycle Length: 121 | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 0 | 9 | 162 | 0 | 112 | 0 | 1800 | 93 | 90 | 2552 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1834 | 1853 | 1782 | 1872 | 0 |
| Adj Flow Rate, veh/h | 1 | 0 | 9 | 169 | 0 | 106 | 0 | 1875 | 80 | 94 | 2658 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 0 |
| Cap, veh/h | 100 | 0 | 49 | 253 | 276 | 356 | 0 | 2758 | 118 | 137 | 2736 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.02 | 0.09 | 0.00 | 0.16 | 0.00 | 0.65 | 0.65 | 0.08 | 0.77 | 0.00 |
| Sat Flow, veh/h | 1239 | 0 | 1493 | 1681 | 1765 | 1500 | 0 | 4775 | 182 | 1697 | 3650 | 0 |
| Grp Volume(v), veh/h | 1 | 0 | 9 | 169 | 0 | 106 | 0 | 1161 | 794 | 94 | 2658 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1239 | 0 | 1493 | 1681 | 1765 | 1500 | 0 | 1321 | 1802 | 1697 | 1778 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.7 | 11.0 | 0.0 | 7.0 | 0.0 | 33.5 | 33.6 | 6.5 | 82.6 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.7 | 11.0 | 0.0 | 7.0 | 0.0 | 33.5 | 33.6 | 6.5 | 82.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.00 | | 0.10 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 100 | 0 | 49 | 253 | 276 | 356 | 0 | 1709 | 1166 | 137 | 2736 | 0 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.19 | 0.67 | 0.00 | 0.30 | 0.00 | 0.68 | 0.68 | 0.69 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 100 | 0 | 49 | 253 | 277 | 356 | 0 | 1709 | 1166 | 238 | 2736 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.00 |
| Uniform Delay (d), s/veh | 56.7 | 0.0 | 57.5 | 49.4 | 0.0 | 37.9 | 0.0 | 13.4 | 13.5 | 54.1 | 12.8 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 1.8 | 6.6 | 0.0 | 0.5 | 0.0 | 2.2 | 3.2 | 2.1 | 5.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.1 | 0.0 | 0.6 | 9.7 | 0.0 | 5.3 | 0.0 | 18.4 | 24.5 | 4.8 | 47.6 | 0.0 |
| LnGrp Delay(d),s/veh | 56.7 | 0.0 | 59.3 | 56.1 | 0.0 | 38.4 | 0.0 | 15.6 | 16.7 | 56.2 | 18.1 | 0.0 |
| LnGrp LOS | E | | E | E | | D | | B | B | E | B | |
| Approach Vol, veh/h | | 10 | | | 275 | | | 1955 | | | 2752 | |
| Approach Delay, s/veh | | 59.0 | | | 49.2 | | | 16.1 | | | 19.4 | |
| Approach LOS | | E | | | D | | | B | | | B | |

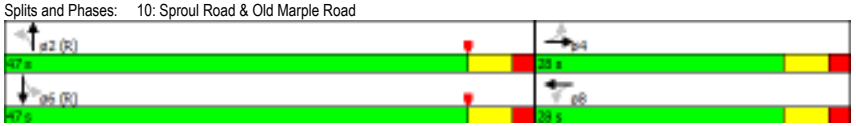
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.7 | 83.3 | 15.0 | 7.9 | | 98.1 | | 22.9 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 70.0 | 10.0 | 3.0 | | 92.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 36.1 | 13.5 | 2.7 | | 85.1 | | 9.5 |
| Green Ext Time (p_c), s | 0.1 | 31.5 | 0.0 | 0.0 | | 6.7 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.8 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 206 | 166 | 55 | 153 | 142 | 12 | 73 | 1119 | 61 | 4 | 1441 | 204 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 28.0 | 28.0 | | 28.0 | 28.0 | | 47.0 | 47.0 | | 47.0 | 47.0 | |
| Total Split (%) | 37.3% | 37.3% | | 37.3% | 37.3% | | 62.7% | 62.7% | | 62.7% | 62.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 4 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 206 | 166 | 55 | 153 | 142 | 12 | 73 | 1119 | 61 | 4 | 1441 | 204 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1883 | 1818 | 1782 | 1756 | 1782 | 1773 | 1751 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 215 | 173 | 45 | 159 | 148 | 9 | 76 | 1166 | 52 | 4 | 1501 | 183 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 269 | 168 | 42 | 241 | 194 | 11 | 71 | 978 | 47 | 48 | 1662 | 201 |
| Arrive On Green | 0.29 | 0.31 | 0.29 | 0.29 | 0.31 | 0.29 | 0.55 | 0.56 | 0.55 | 0.55 | 0.56 | 0.55 |
| Sat Flow, veh/h | 643 | 549 | 138 | 552 | 632 | 35 | 25 | 2049 | 110 | 1 | 3022 | 363 |
| Grp Volume(v), veh/h | 433 | 0 | 0 | 316 | 0 | 0 | 552 | 0 | 742 | 891 | 0 | 797 |
| Grp Sat Flow(s),veh/h/ln | 1331 | 0 | 0 | 1218 | 0 | 0 | 611 | 0 | 1574 | 1804 | 0 | 1582 |
| Q Serve(g_s), s | 3.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.5 | 0.0 | 29.5 | 0.0 | 0.0 | 33.5 |
| Cycle Q Clear(g_c), s | 22.0 | 0.0 | 0.0 | 18.4 | 0.0 | 0.0 | 41.0 | 0.0 | 29.5 | 32.8 | 0.0 | 33.5 |
| Prop In Lane | 0.50 | | 0.10 | 0.50 | | 0.03 | 0.14 | | 0.07 | 0.00 | | 0.23 |
| Lane Grp Cap(c), veh/h | 462 | 0 | 0 | 430 | 0 | 0 | 120 | 0 | 884 | 852 | 0 | 886 |
| V/C Ratio(X) | 0.94 | 0.00 | 0.00 | 0.74 | 0.00 | 0.00 | 4.59 | 0.00 | 0.84 | 1.05 | 0.00 | 0.90 |
| Avail Cap(c_a), veh/h | 462 | 0 | 0 | 430 | 0 | 0 | 389 | 0 | 881 | 1035 | 0 | 886 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.1 | 0.0 | 0.0 | 24.3 | 0.0 | 0.0 | 20.8 | 0.0 | 15.6 | 17.4 | 0.0 | 14.8 |
| Incr Delay (d2), s/veh | 26.8 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 | 1632.9 | 0.0 | 9.4 | 43.4 | 0.0 | 13.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.2 | 0.0 | 0.0 | 11.5 | 0.0 | 0.0 | 98.3 | 0.0 | 25.6 | 52.5 | 0.0 | 24.8 |
| LnGrp Delay(d),s/veh | 53.9 | 0.0 | 0.0 | 30.8 | 0.0 | 0.0 | 1653.7 | 0.0 | 25.0 | 62.8 | 0.0 | 28.7 |
| LnGrp LOS | D | | | C | | | F | | C | F | | C |
| Approach Vol, veh/h | | 433 | | | 316 | | | 1294 | | | 1688 | |
| Approach Delay, s/veh | | 53.9 | | | 30.8 | | | 719.9 | | | 46.7 | |
| Approach LOS | | D | | | C | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 47.0 | | 28.0 | | 47.0 | | 28.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 41.0 | | 22.0 | | 41.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 43.0 | | 24.0 | | 35.5 | | 20.4 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 4.9 | | 0.6 |

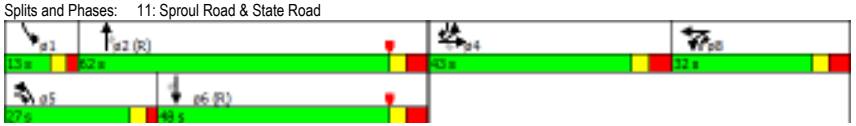
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 279.7 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 426 | 86 | 733 | 313 | 156 | 72 | 317 | 763 | 318 | 94 | 1113 | 534 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 40% | | | 13% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 43.0 | 43.0 | 27.0 | 32.0 | 32.0 | | 27.0 | 62.0 | 32.0 | 13.0 | 48.0 | 43.0 |
| Total Split (%) | 28.7% | 28.7% | 18.0% | 21.3% | 21.3% | | 18.0% | 41.3% | 21.3% | 8.7% | 32.0% | 28.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 426 | 86 | 733 | 313 | 156 | 72 | 317 | 763 | 318 | 94 | 1113 | 534 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1820 | 1844 | 1872 | 1856 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 503 | 0 | 0 | 242 | 274 | 0 | 327 | 787 | 0 | 97 | 1147 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 611 | 0 | 570 | 301 | 313 | 0 | 260 | 1525 | 892 | 103 | 964 | 805 |
| Arrive On Green | 0.17 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.15 | 0.45 | 0.00 | 0.06 | 0.36 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 503 | 0 | 0 | 242 | 274 | 0 | 327 | 787 | 0 | 97 | 1147 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 20.7 | 0.0 | 0.0 | 19.6 | 21.6 | 0.0 | 23.0 | 24.9 | 0.0 | 8.5 | 49.3 | 0.0 |
| Cycle Q Clear(g_c), s | 20.7 | 0.0 | 0.0 | 19.6 | 21.6 | 0.0 | 23.0 | 24.9 | 0.0 | 8.5 | 49.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 611 | 0 | 570 | 301 | 313 | 0 | 260 | 1525 | 892 | 103 | 964 | 805 |
| V/C Ratio(X) | 0.82 | 0.00 | 0.00 | 0.80 | 0.88 | 0.00 | 1.26 | 0.52 | 0.00 | 0.94 | 1.19 | 0.00 |
| Avail Cap(c_a), veh/h | 866 | 0 | 627 | 309 | 322 | 0 | 260 | 1529 | 949 | 103 | 1213 | 805 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.8 | 0.0 | 0.0 | 60.0 | 60.8 | 0.0 | 63.5 | 29.7 | 0.0 | 70.2 | 53.7 | 0.0 |
| Incr Delay (d2), s/veh | 4.5 | 0.0 | 0.0 | 14.0 | 22.2 | 0.0 | 142.8 | 1.3 | 0.0 | 70.4 | 96.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.6 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.9 | 0.0 | 0.0 | 16.3 | 19.0 | 0.0 | 38.0 | 17.8 | 0.0 | 10.1 | 62.0 | 0.0 |
| LnGrp Delay(d),s/veh | 64.4 | 0.0 | 0.0 | 74.0 | 83.0 | 0.0 | 206.3 | 30.9 | 0.0 | 140.7 | 168.2 | 0.0 |
| LnGrp LOS | E | | | E | F | | F | C | | F | F | |
| Approach Vol, veh/h | | 503 | | | 516 | | | 1114 | | | 1244 | |
| Approach Delay, s/veh | | 64.4 | | | 78.8 | | | 82.4 | | | 166.1 | |
| Approach LOS | | E | | | E | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 73.7 | | 32.0 | 27.0 | 59.7 | | 31.3 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 55.0 | | 36.0 | 22.0 | 41.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 11.0 | 27.4 | | 23.2 | 25.5 | 51.8 | | 24.1 |
| Green Ext Time (p_c), s | 0.0 | 10.6 | | 1.7 | 0.0 | 0.0 | | 0.2 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 110.0 |
| HCM 2010 LOS | F |

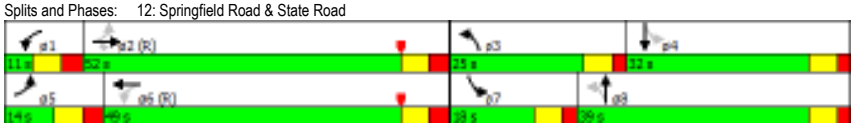
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 181 | 1423 | 529 | 37 | 1221 | 119 | 359 | 444 | 42 | 275 | 485 | 61 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 14.0 | 52.0 | 52.0 | 11.0 | 49.0 | | 25.0 | 39.0 | | 18.0 | 32.0 | |
| Total Split (%) | 11.7% | 43.3% | 43.3% | 9.2% | 40.8% | | 20.8% | 32.5% | | 15.0% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 181 | 1423 | 529 | 37 | 1221 | 119 | 359 | 444 | 42 | 275 | 485 | 61 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1807 | 1827 |
| Adj Flow Rate, veh/h | 183 | 1437 | 0 | 37 | 1233 | 0 | 363 | 448 | 0 | 278 | 490 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 177 | 1366 | 611 | 114 | 1177 | 0 | 344 | 508 | 0 | 247 | 407 | 0 |
| Arrive On Green | 0.07 | 0.39 | 0.00 | 0.03 | 0.36 | 0.00 | 0.17 | 0.28 | 0.00 | 0.11 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Grp Volume(v), veh/h | 183 | 1437 | 0 | 37 | 1233 | 0 | 363 | 448 | 0 | 278 | 490 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Q Serve(g_s), s | 8.0 | 47.0 | 0.0 | 1.7 | 43.0 | 0.0 | 20.0 | 28.7 | 0.0 | 13.0 | 27.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 47.0 | 0.0 | 1.7 | 43.0 | 0.0 | 20.0 | 28.7 | 0.0 | 13.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 177 | 1366 | 611 | 114 | 1177 | 0 | 344 | 508 | 0 | 247 | 407 | 0 |
| V/C Ratio(X) | 1.04 | 1.05 | 0.00 | 0.33 | 1.05 | 0.00 | 1.05 | 0.88 | 0.00 | 1.13 | 1.21 | 0.00 |
| Avail Cap(c_a), veh/h | 177 | 1366 | 611 | 127 | 1177 | 0 | 344 | 508 | 0 | 287 | 407 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 31.4 | 36.5 | 0.0 | 30.4 | 38.5 | 0.0 | 36.0 | 41.3 | 0.0 | 34.6 | 46.5 | 0.0 |
| Incr Delay (d2), s/veh | 77.7 | 39.2 | 0.0 | 1.6 | 39.6 | 0.0 | 63.5 | 16.5 | 0.0 | 94.4 | 113.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 75.2 | 7.5 | 0.0 | 0.0 | 2.9 | 0.0 | 19.6 | 0.9 | 0.0 | 12.8 | 14.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 21.4 | 55.5 | 0.0 | 1.4 | 47.2 | 0.0 | 33.4 | 23.7 | 0.0 | 12.6 | 49.3 | 0.0 |
| LnGrp Delay(d),s/veh | 184.2 | 83.1 | 0.0 | 32.1 | 81.0 | 0.0 | 119.1 | 58.8 | 0.0 | 141.9 | 174.6 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | E | | F | F | |
| Approach Vol, veh/h | | 1620 | | | 1270 | | | 811 | | | 768 | |
| Approach Delay, s/veh | | 94.6 | | | 79.6 | | | 85.8 | | | 162.8 | |
| Approach LOS | | F | | | E | | | F | | | F | |

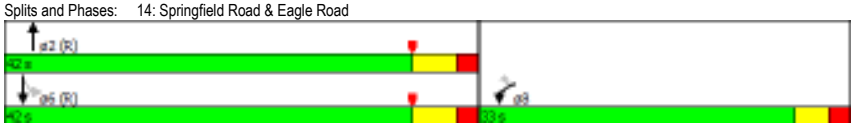
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 53.0 | 25.0 | 32.0 | 14.0 | 49.0 | 18.0 | 39.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 45.0 | 19.0 | 26.0 | 7.0 | 42.0 | 12.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 49.5 | 22.5 | 29.5 | 10.5 | 45.5 | 15.5 | 31.2 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 100.4 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 380 | 87 | 466 | 369 | 213 | 609 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 33.0 | 33.0 | 42.0 | | 42.0 | 42.0 |
| Total Split (%) | 44.0% | 44.0% | 56.0% | | 56.0% | 56.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 13 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 380 | 87 | 466 | 369 | 213 | 609 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1809 | 1809 | 1771 | 1791 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 400 | 74 | 491 | 341 | 224 | 641 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 1 | 1 |
| Cap, veh/h | 487 | 541 | 515 | 334 | 60 | 102 |
| Arrive On Green | 0.28 | 0.28 | 0.60 | 0.59 | 0.59 | 0.60 |
| Sat Flow, veh/h | 1723 | 1537 | 975 | 677 | 95 | 375 |
| Grp Volume(v), veh/h | 400 | 74 | 0 | 832 | 865 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1723 | 1537 | 0 | 1652 | 470 | 0 |
| Q Serve(g_s), s | 16.3 | 2.7 | 0.0 | 30.7 | 13.2 | 0.0 |
| Cycle Q Clear(g_c), s | 16.3 | 2.7 | 0.0 | 30.7 | 43.9 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.41 | 0.26 | |
| Lane Grp Cap(c), veh/h | 487 | 541 | 0 | 815 | 102 | 0 |
| V/C Ratio(X) | 0.82 | 0.14 | 0.00 | 1.02 | 8.50 | 0.00 |
| Avail Cap(c_a), veh/h | 666 | 594 | 0 | 989 | 336 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 25.2 | 16.6 | 0.0 | 19.2 | 22.6 | 0.0 |
| Incr Delay (d2), s/veh | 5.9 | 0.1 | 0.0 | 36.9 | 3374.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.5 | 1.9 | 0.0 | 45.2 | 167.1 | 0.0 |
| LnGrp Delay(d),s/veh | 31.3 | 16.8 | 0.0 | 56.1 | 3397.2 | 0.0 |
| LnGrp LOS | C | B | | F | F | |
| Approach Vol, veh/h | 474 | | 832 | | | 865 |
| Approach Delay, s/veh | 29.0 | | 56.1 | | | 3397.2 |
| Approach LOS | C | | E | | | F |

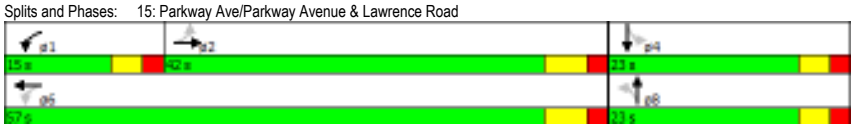
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.9 | | | | 49.9 | | 25.1 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | | | 36.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | | 32.7 | | | | 45.9 | | 18.8 |
| Green Ext Time (p_c), s | | 2.6 | | | | 0.0 | | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 1381.4 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 676 | 230 | 408 | 852 | 5 | 263 | 23 | 267 | 6 | 39 | 32 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 578 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 15.8 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 42.0 | 42.0 | | 15.0 | 57.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 52.5% | 52.5% | | 18.8% | 71.3% | | 28.8% | 28.8% | | 28.8% | 28.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 676 | 230 | 408 | 852 | 5 | 263 | 23 | 267 | 6 | 39 | 32 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1810 | 1827 |
| Adj Flow Rate, veh/h | 30 | 697 | 228 | 421 | 878 | 5 | 271 | 24 | 180 | 6 | 40 | 24 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 68 | 1352 | 495 | 92 | 1035 | 6 | 399 | 42 | 316 | 60 | 251 | 137 |
| Arrive On Green | 0.64 | 0.65 | 0.64 | 0.64 | 0.65 | 0.64 | 0.24 | 0.24 | 0.22 | 0.22 | 0.24 | 0.22 |
| Sat Flow, veh/h | 31 | 2080 | 762 | 3 | 1593 | 9 | 1256 | 177 | 1329 | 48 | 1056 | 576 |
| Grp Volume(v), veh/h | 508 | 0 | 447 | 421 | 0 | 883 | 271 | 0 | 204 | 70 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1378 | 0 | 1495 | 3 | 0 | 1602 | 1256 | 0 | 1506 | 1680 | 0 | 0 |
| Q Serve(g_s), s | 4.8 | 0.0 | 12.1 | 80.0 | 0.0 | 34.4 | 13.8 | 0.0 | 9.6 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 39.2 | 0.0 | 12.1 | 80.0 | 0.0 | 34.4 | 15.9 | 0.0 | 9.6 | 2.6 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.51 | 1.00 | | 0.01 | 1.00 | | 0.88 | 0.09 | | 0.34 |
| Lane Grp Cap(c), veh/h | 926 | 0 | 972 | 0 | 0 | 1041 | 399 | 0 | 358 | 427 | 0 | 0 |
| V/C Ratio(X) | 0.55 | 0.00 | 0.46 | 0.00 | 0.00 | 0.85 | 0.68 | 0.00 | 0.57 | 0.16 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 926 | 0 | 972 | 0 | 0 | 1041 | 399 | 0 | 358 | 427 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 7.8 | 0.0 | 7.1 | 0.0 | 0.0 | 10.9 | 29.0 | 0.0 | 27.3 | 24.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 0.3 | 0.0 | 0.0 | 6.7 | 4.6 | 0.0 | 2.2 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.8 | 0.0 | 8.6 | 0.0 | 0.0 | 23.6 | 10.3 | 0.0 | 7.6 | 2.3 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 8.5 | 0.0 | 7.5 | 0.0 | 0.0 | 17.6 | 33.6 | 0.0 | 29.5 | 24.6 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | C | | |
| Approach Vol, veh/h | | 955 | | | 1304 | | | 475 | | | 70 | |
| Approach Delay, s/veh | | 8.0 | | | 11.9 | | | 31.8 | | | 24.6 | |
| Approach LOS | | A | | | B | | | C | | | C | |

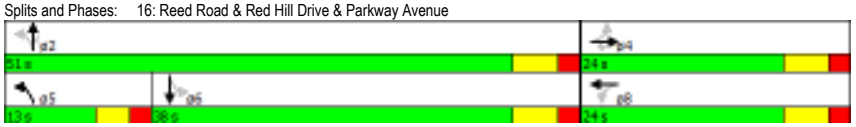
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 57.0 | | 23.0 | | 57.0 | | 23.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 18.0 | | 51.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 41.2 | | 4.6 | | 82.0 | | 18.4 |
| Green Ext Time (p_c), s | | 0.0 | | 2.0 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 61 | 142 | 355 | 37 | 62 | 10 | 371 | 427 | 64 | 5 | 618 | 68 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | | 13.0 | 51.0 | 51.0 | 38.0 | 38.0 | |
| Total Split (%) | 32.0% | 32.0% | 32.0% | 32.0% | 32.0% | | 17.3% | 68.0% | 68.0% | 50.7% | 50.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 73.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 61 | 142 | 355 | 37 | 62 | 10 | 371 | 427 | 64 | 5 | 618 | 68 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1752 | 1729 | 1836 | 1786 | 1836 | 1713 | 1764 | 1680 | 1836 | 1903 | 1836 |
| Adj Flow Rate, veh/h | 64 | 149 | 312 | 39 | 65 | 10 | 391 | 449 | 61 | 5 | 651 | 68 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 155 | 316 | 371 | 112 | 164 | 20 | 379 | 1078 | 873 | 51 | 758 | 58 |
| Arrive On Green | 0.24 | 0.25 | 0.25 | 0.24 | 0.25 | 0.24 | 0.12 | 0.61 | 0.61 | 0.42 | 0.43 | 0.42 |
| Sat Flow, veh/h | 368 | 1262 | 1464 | 248 | 757 | 97 | 1631 | 1764 | 1428 | 3 | 1690 | 175 |
| Grp Volume(v), veh/h | 213 | 0 | 312 | 114 | 0 | 0 | 391 | 449 | 61 | 724 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1631 | 0 | 1464 | 1101 | 0 | 0 | 1631 | 1764 | 1428 | 1868 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 14.8 | 0.5 | 0.0 | 0.0 | 9.0 | 9.7 | 1.3 | 3.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.8 | 0.0 | 14.8 | 8.3 | 0.0 | 0.0 | 9.0 | 9.7 | 1.3 | 26.8 | 0.0 | 0.0 |
| Prop In Lane | 0.30 | | 1.00 | 0.34 | | 0.09 | 1.00 | | 1.00 | 0.01 | | 0.09 |
| Lane Grp Cap(c), veh/h | 449 | 0 | 371 | 285 | 0 | 0 | 379 | 1078 | 873 | 832 | 0 | 0 |
| V/C Ratio(X) | 0.47 | 0.00 | 0.84 | 0.40 | 0.00 | 0.00 | 1.03 | 0.42 | 0.07 | 0.87 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 465 | 0 | 381 | 339 | 0 | 0 | 434 | 1111 | 899 | 868 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 23.7 | 0.0 | 26.2 | 22.5 | 0.0 | 0.0 | 12.8 | 7.5 | 5.8 | 19.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 15.2 | 0.9 | 0.0 | 0.0 | 50.6 | 0.3 | 0.0 | 9.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.0 | 0.0 | 12.4 | 3.8 | 0.0 | 0.0 | 16.8 | 8.4 | 0.9 | 22.9 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 24.4 | 0.0 | 42.6 | 23.4 | 0.0 | 0.0 | 63.4 | 7.7 | 5.9 | 29.2 | 0.0 | 0.0 |
| LnGrp LOS | C | | D | C | | | F | A | A | C | | |
| Approach Vol, veh/h | | 525 | | | 114 | | | 901 | | | 724 | |
| Approach Delay, s/veh | | 35.3 | | | 23.4 | | | 31.8 | | | 29.2 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.5 | | 23.5 | 13.0 | 36.5 | | 23.5 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 45.0 | | 18.0 | 8.0 | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 12.2 | | 17.3 | 11.5 | 28.8 | | 10.3 |
| Green Ext Time (p_c), s | | 6.0 | | 0.2 | 0.0 | 1.7 | | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.3 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 25 | 406 | 123 | 110 | 367 | 35 | 150 | 0 | 105 | 77 | 0 | 49 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 175 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | 3 | | 3 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 3% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Parking (#/hr) | | | 0 | | | | | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | 15.0 | 3.0 | 15.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Minimum Split (s) | 21.0 | 21.0 | 21.0 | 8.0 | 20.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 14.0 | 38.0 | | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 23.3% | 63.3% | | 36.7% | 36.7% | | 36.7% | 36.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 10 (17%), Referenced to phase 2:EBTL and 6:WBT, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 25 | 406 | 123 | 110 | 367 | 35 | 150 | 0 | 105 | 77 | 0 | 49 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1747 | 1765 | 1729 | 1748 | 1764 | 1765 | 1765 | 1800 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 28 | 456 | 138 | 124 | 412 | 39 | 169 | 0 | 118 | 87 | 0 | 55 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 102 | 1287 | 563 | 192 | 944 | 89 | 456 | 0 | 400 | 258 | 23 | 117 |
| Arrive On Green | 0.40 | 0.42 | 0.42 | 0.12 | 0.60 | 0.58 | 0.27 | 0.00 | 0.25 | 0.25 | 0.00 | 0.25 |
| Sat Flow, veh/h | 85 | 3088 | 1350 | 1647 | 1573 | 149 | 1267 | 0 | 1500 | 605 | 87 | 437 |
| Grp Volume(v), veh/h | 256 | 228 | 138 | 124 | 0 | 451 | 169 | 0 | 118 | 142 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1510 | 1350 | 1647 | 0 | 1722 | 1267 | 0 | 1500 | 1129 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 6.2 | 4.0 | 4.3 | 0.0 | 8.5 | 0.0 | 0.0 | 3.8 | 4.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.1 | 6.2 | 4.0 | 4.3 | 0.0 | 8.5 | 6.8 | 0.0 | 3.8 | 7.9 | 0.0 | 0.0 |
| Prop In Lane | 0.11 | | 1.00 | 1.00 | | 0.09 | 1.00 | | 1.00 | 0.61 | | 0.39 |
| Lane Grp Cap(c), veh/h | 732 | 629 | 563 | 192 | 0 | 1033 | 456 | 0 | 400 | 379 | 0 | 0 |
| V/C Ratio(X) | 0.35 | 0.36 | 0.25 | 0.64 | 0.00 | 0.44 | 0.37 | 0.00 | 0.30 | 0.37 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 732 | 629 | 563 | 275 | 0 | 1033 | 499 | 0 | 450 | 423 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 12.0 | 12.0 | 11.4 | 25.3 | 0.0 | 6.5 | 18.7 | 0.0 | 17.9 | 19.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.3 | 1.6 | 1.0 | 3.6 | 0.0 | 1.3 | 0.5 | 0.0 | 0.4 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.9 | 5.2 | 2.9 | 3.9 | 0.0 | 7.8 | 4.3 | 0.0 | 2.9 | 4.0 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 13.3 | 13.6 | 12.4 | 28.9 | 0.0 | 7.9 | 19.2 | 0.0 | 18.3 | 20.5 | 0.0 | 0.0 |
| LnGrp LOS | B | B | B | C | | A | B | | B | C | | |
| Approach Vol, veh/h | | 622 | | | 575 | | | 287 | | | 142 | |
| Approach Delay, s/veh | | 13.2 | | | 12.4 | | | 18.8 | | | 20.5 | |
| Approach LOS | | B | | | B | | | B | | | C | |

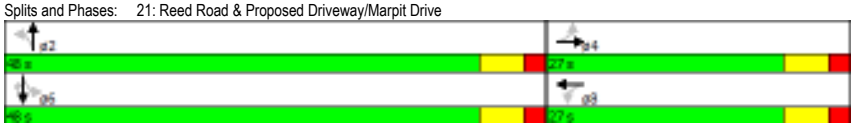
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.0 | 29.0 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 19.0 | | 17.0 | | 33.0 | | 17.0 |
| Max Q Clear Time (g_c+I1), s | 6.8 | 8.7 | | 9.9 | | 10.5 | | 9.3 |
| Green Ext Time (p_c), s | 0.1 | 3.2 | | 1.1 | | 4.2 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.6 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 36 | 21 | 94 | 299 | 18 | 88 | 75 | 444 | 119 | 41 | 807 | 49 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 662 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 15.0 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 1% | 2% | 2% | 1% | 15% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | | 48.0 | 48.0 | | 48.0 | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | | 36.0% | 36.0% | | 64.0% | 64.0% | | 64.0% | 64.0% | 64.0% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 68.6 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 36 | 21 | 94 | 299 | 18 | 88 | 75 | 444 | 119 | 41 | 807 | 49 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1731 | 1779 | 1800 | 1765 | 1768 | 1800 | 1565 | 1782 | 1765 |
| Adj Flow Rate, veh/h | 38 | 22 | 99 | 315 | 19 | 86 | 79 | 467 | 117 | 43 | 849 | 52 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 15 | 1 | 2 |
| Cap, veh/h | 392 | 82 | 371 | 378 | 83 | 374 | 203 | 782 | 196 | 344 | 1020 | 858 |
| Arrive On Green | 0.29 | 0.29 | 0.28 | 0.29 | 0.29 | 0.29 | 0.57 | 0.57 | 0.56 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1216 | 280 | 1262 | 1176 | 281 | 1273 | 583 | 1366 | 342 | 695 | 1782 | 1500 |
| Grp Volume(v), veh/h | 38 | 0 | 121 | 315 | 0 | 105 | 79 | 0 | 584 | 43 | 849 | 52 |
| Grp Sat Flow(s),veh/h/ln | 1216 | 0 | 1542 | 1176 | 0 | 1555 | 583 | 0 | 1708 | 695 | 1782 | 1500 |
| Q Serve(g_s), s | 1.8 | 0.0 | 4.6 | 17.9 | 0.0 | 3.8 | 9.6 | 0.0 | 16.7 | 3.2 | 29.1 | 1.1 |
| Cycle Q Clear(g_c), s | 5.7 | 0.0 | 4.6 | 22.0 | 0.0 | 3.8 | 38.7 | 0.0 | 16.7 | 19.4 | 29.1 | 1.1 |
| Prop In Lane | 1.00 | | 0.82 | 1.00 | | 0.82 | 1.00 | | 0.20 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 392 | 0 | 454 | 378 | 0 | 457 | 203 | 0 | 977 | 344 | 1020 | 858 |
| V/C Ratio(X) | 0.10 | 0.00 | 0.27 | 0.83 | 0.00 | 0.23 | 0.39 | 0.00 | 0.60 | 0.13 | 0.83 | 0.06 |
| Avail Cap(c_a), veh/h | 392 | 0 | 454 | 378 | 0 | 457 | 205 | 0 | 982 | 346 | 1025 | 862 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.1 | 0.0 | 20.6 | 29.4 | 0.0 | 20.0 | 28.9 | 0.0 | 10.5 | 16.5 | 13.1 | 7.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.3 | 14.6 | 0.0 | 0.3 | 1.2 | 0.0 | 1.0 | 0.2 | 5.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.1 | 0.0 | 3.6 | 12.5 | 0.0 | 3.0 | 2.9 | 0.0 | 12.7 | 1.1 | 22.4 | 0.9 |
| LnGrp Delay(d),s/veh | 22.2 | 0.0 | 20.9 | 44.0 | 0.0 | 20.2 | 30.1 | 0.0 | 11.5 | 16.7 | 19.0 | 7.1 |
| LnGrp LOS | C | | C | D | | C | C | | B | B | B | A |
| Approach Vol, veh/h | | 159 | | | 420 | | | 663 | | | 944 | |
| Approach Delay, s/veh | | 21.2 | | | 38.0 | | | 13.7 | | | 18.3 | |
| Approach LOS | | C | | | D | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 47.8 | | 27.0 | | 47.8 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | | 42.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 41.2 | | 8.2 | | 31.6 | | 24.5 |
| Green Ext Time (p_c), s | | 0.6 | | 2.1 | | 5.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.9 |
| HCM 2010 LOS | C |

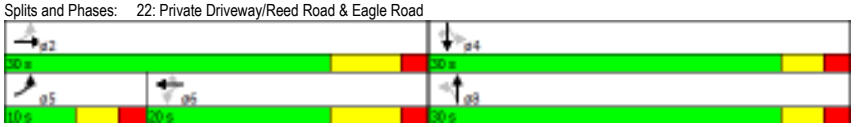
## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: PM PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 170 | 396 | 0 | 1 | 298 | 470 | 0 | 0 | 0 | 699 | 1 | 459 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | | | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 10.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 30.0 | 30.0 | | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 16.7% | 50.0% | | 33.3% | 33.3% | 33.3% | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road






## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: PM PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 170 | 396 | 0 | 1 | 298 | 470 | 0 | 0 | 0 | 699 | 1 | 459 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1844 |
| Adj Flow Rate, veh/h | 177 | 412 | 0 | 1 | 310 | 405 | 0 | 0 | 0 | 728 | 1 | 443 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cap, veh/h | 347 | 756 | 0 | 60 | 403 | 342 | 0 | 823 | 0 | 274 | 255 | 679 |
| Arrive On Green | 0.10 | 0.40 | 0.00 | 0.22 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.42 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1466 | 0 | 1900 | 0 | 1302 | 2 | 1567 |
| Grp Volume(v), veh/h | 177 | 412 | 0 | 311 | 0 | 405 | 0 | 0 | 0 | 729 | 0 | 443 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1304 | 0 | 1567 |
| Q Serve(g_s), s | 4.1 | 10.0 | 0.0 | 0.0 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 13.4 |
| Cycle Q Clear(g_c), s | 4.1 | 10.0 | 0.0 | 10.3 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 13.4 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 347 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 734 | 0 | 679 |
| V/C Ratio(X) | 0.51 | 0.54 | 0.00 | 0.72 | 0.00 | 1.18 | 0.00 | 0.00 | 0.00 | 0.99 | 0.00 | 0.65 |
| Avail Cap(c_a), veh/h | 350 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 663 | 0 | 679 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.9 | 13.8 | 0.0 | 21.6 | 0.0 | 23.0 | 0.0 | 0.0 | 0.0 | 18.4 | 0.0 | 13.4 |
| Incr Delay (d2), s/veh | 1.2 | 1.2 | 0.0 | 6.4 | 0.0 | 108.5 | 0.0 | 0.0 | 0.0 | 31.7 | 0.0 | 2.2 |
| Initial Q Delay(d3),s/veh | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 17.6 | 0.0 | 0.0 | 0.0 | 6.9 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.9 | 9.2 | 0.0 | 9.8 | 0.0 | 30.7 | 0.0 | 0.0 | 0.0 | 27.2 | 0.0 | 10.3 |
| LnGrp Delay(d),s/veh | 16.6 | 15.0 | 0.0 | 28.1 | 0.0 | 149.1 | 0.0 | 0.0 | 0.0 | 57.0 | 0.0 | 15.7 |
| LnGrp LOS | B | B | | C | | F | | | | E | | B |
| Approach Vol, veh/h | | 589 | | | 716 | | | 0 | | | 1172 | |
| Approach Delay, s/veh | | 15.5 | | | 96.6 | | | 0.0 | | | 41.4 | |
| Approach LOS | | B | | | F | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.0 | | 30.0 | 10.0 | 20.0 | | 30.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 23.0 | | 25.0 | 5.0 | 13.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 12.5 | | 27.0 | 6.6 | 16.5 | | 0.0 |
| Green Ext Time (p_c), s | | 5.6 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 51.2 |
| HCM 2010 LOS | D |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 658 | 1300 | 6 | 909 | 1876 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 678 | 1346 | 0 | 937 | 1934 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 39.0 | 36.0 | | 39.0 | 75.0 |
| Total Split (%) | | 52.0% | 48.0% | | 52.0% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 31.0 | 29.0 | | 31.0 | 75.0 |
| Actuated g/C Ratio | | 0.41 | 0.39 | | 0.41 | 1.00 |
| v/c Ratio | | 0.64 | 1.02 | | 1.39 | 1.15 |
| Control Delay | | 14.6 | 42.4 | | 206.4 | 80.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 14.6 | 42.4 | | 206.4 | 80.2 |
| LOS | | B | D | | F | F |
| Approach Delay | | | 42.4 | | | 121.4 |
| Approach LOS | | | D | | | F |
| Queue Length 50th (ft) | | 140 | ~327 | | ~591 | ~242 |
| Queue Length 95th (ft) | | m138 | m265 | | #808 | #496 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1065 | 1325 | | 676 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.64 | 1.02 | | 1.39 | 1.15 |

**Intersection Summary**

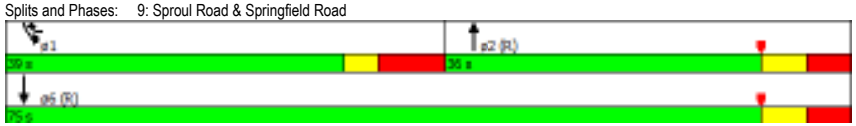
Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 70 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 84.9 Intersection LOS: F
Intersection Capacity Utilization 110.1% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 107 | 69 | 122 | 19 | 30 | 18 | 65 | 409 | 4 | 23 | 520 | 96 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 216 | | | 248 | | | 406 | | | 578 | |
| Travel Time (s) | | 5.9 | | | 6.8 | | | 11.1 | | | 15.8 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 44.6 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 107 | 69 | 122 | 0 | 19 | 30 | 18 | 0 | 65 | 409 | 4 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 25 |
| Mvmt Flow | 0 | 114 | 73 | 130 | 0 | 20 | 32 | 19 | 0 | 69 | 435 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.7 | 12.9 | 43.6 |
| HCM LOS | B | B | E |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 14% | 61% | 0% | 28% | 4% |
| Vol Thru, % | 86% | 39% | 0% | 45% | 81% |
| Vol Right, % | 1% | 0% | 100% | 27% | 15% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 478 | 176 | 122 | 67 | 639 |
| LT Vol | 65 | 107 | 0 | 19 | 23 |
| Through Vol | 409 | 69 | 0 | 30 | 520 |
| RT Vol | 4 | 0 | 122 | 18 | 96 |
| Lane Flow Rate | 509 | 187 | 130 | 71 | 680 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.905 | 0.419 | 0.254 | 0.162 | 1 |
| Departure Headway (Hd) | 6.406 | 8.056 | 7.052 | 8.178 | 6.206 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 564 | 446 | 509 | 436 | 585 |
| Service Time | 4.459 | 5.815 | 4.811 | 6.276 | 4.299 |
| HCM Lane V/C Ratio | 0.902 | 0.419 | 0.255 | 0.163 | 1.162 |
| HCM Control Delay | 43.6 | 16.5 | 12.2 | 12.9 | 62.5 |
| HCM Lane LOS | E | C | B | B | F |
| HCM 95th-tile Q | 10.8 | 2 | 1 | 0.6 | 14.6 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 23 | 520 | 96 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 24 | 553 | 102 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 62.5 |
| HCM LOS | F |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 18 | 1827 | 3 | 54 | 2872 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 1827 | 3 | 54 | 2872 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 19 | 1884 | 3 | 56 | 2961 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3477 | 943 | 0 | 0 | 1887 | 0 |
| Stage 1 | 1885 | - | - | - | - | - |
| Stage 2 | 1592 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *3 | *389 | - | - | *470 | - |
| Stage 1 | *403 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *3 | *389 | - | - | *470 | - |
| Mov Cap-2 Maneuver | *3 | - | - | - | - | - |
| Stage 1 | *403 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.7 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 389 | * 470 | - |
| HCM Lane V/C Ratio | - | - | 0.048 | 0.118 | - |
| HCM Control Delay (s) | - | - | 14.7 | 13.7 | 0 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.4 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 121 | 103 | 26 | 695 | 788 | 276 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 39.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 121 | 103 | 26 | 695 | 788 | 276 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 1 | 0 | 1 | 0 | 1 | 1 |
| Mvmt Flow | 123 | 105 | 27 | 709 | 804 | 282 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1707 | 945 | 1086 | 0 | - | 0 |
| Stage 1 | 945 | - | - | - | - | - |
| Stage 2 | 762 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *~ 108 | 409 | 331 | - | - | - |
| Stage 1 | *430 | - | - | - | - | - |
| Stage 2 | *534 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 93 | 409 | 331 | - | - | - |
| Mov Cap-2 Maneuver | *~ 93 | - | - | - | - | - |
| Stage 1 | *430 | - | - | - | - | - |
| Stage 2 | *462 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 350.1 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 331 | - | 144 | - | - |
| HCM Lane V/C Ratio | 0.08 | - | 1.587 | - | - |
| HCM Control Delay (s) | 16.8 | 0 | $ 350.1 | - | - |
| HCM Lane LOS | C | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 15.9 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 204 | 510 | 18 | 0 | 484 | 29 | 0 | 0 | 11 | 26 | 0 | 78 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 30 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 382 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 8.7 | | | 7.8 | |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 204 | 510 | 18 | 0 | 484 | 29 | 0 | 0 | 11 | 26 | 0 | 78 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 232 | 580 | 20 | 0 | 550 | 33 | 0 | 0 | 12 | 30 | 0 | 89 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 583 | 0 | 0 | 600 | 0 | 0 | 1664 | 1636 | 300 | 1319 | 1630 | 566 |
| Stage 1 | - | - | - | - | - | - | 1053 | 1053 | - | 566 | 566 | - |
| Stage 2 | - | - | - | - | - | - | 611 | 583 | - | 753 | 1064 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.7 | 6.53 | 7.2 | 7.5 | 6.53 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 2.9 | 2.8 | 4.019 | 2.9 |
| Pot Cap-1 Maneuver | *984 | - | - | 950 | - | - | *152 | *177 | 767 | *399 | *179 | *814 |
| Stage 1 | - | - | - | - | - | - | *265 | *302 | - | *843 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *843 | *588 | - | *418 | *299 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *984 | - | - | 950 | - | - | *111 | *135 | 767 | *321 | *136 | *814 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *111 | *135 | - | *321 | *136 | - |
| Stage 1 | - | - | - | - | - | - | *203 | *231 | - | *644 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *751 | *588 | - | *314 | *229 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 9.8 | 12.7 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 767 | * 984 | - | - | 950 | - | - | 588 |
| HCM Lane V/C Ratio | 0.016 | 0.236 | - | - | - | - | - | 0.201 |
| HCM Control Delay (s) | 9.8 | 9.8 | - | - | 0 | - | - | 12.7 |
| HCM Lane LOS | A | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0.9 | - | - | 0 | - | - | 0.7 |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 54 | 311 | 555 | 41 | 199 | 816 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 25.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 54 | 311 | 555 | 41 | 199 | 816 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 59 | 338 | 603 | 45 | 216 | 887 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1923 | 603 | 0 | 0 | 603 | 0 |
| Stage 1 | 603 | - | - | - | - | - |
| Stage 2 | 1320 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 97 | 545 | - | - | 743 | - |
| Stage 1 | 659 | - | - | - | - | - |
| Stage 2 | 314 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 41 | 545 | - | - | 743 | - |
| Mov Cap-2 Maneuver | 111 | - | - | - | - | - |
| Stage 1 | 659 | - | - | - | - | - |
| Stage 2 | 134 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 130 | 0 | 2.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 345 | 743 | - |
| HCM Lane V/C Ratio | - | - | 1.15 | 0.291 | - |
| HCM Control Delay (s) | - | - | 130 | 11.8 | 0 |
| HCM Lane LOS | - | - | F | B | A |
| HCM 95th %tile Q(veh) | - | - | 15.9 | 1.2 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 14 | 515 | 403 | 25 | 72 | 42 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 14 | 515 | 403 | 25 | 72 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 1 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 15 | 548 | 429 | 27 | 77 | 45 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 456 | 0 | - | 0 | 1021 | 229 |
| Stage 1 | - | - | - | - | 443 | - |
| Stage 2 | - | - | - | - | 578 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.1 | 7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.9 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1061 | - | - | - | 249 | 871 |
| Stage 1 | - | - | - | - | 700 | - |
| Stage 2 | - | - | - | - | 619 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1061 | - | - | - | 245 | 870 |
| Mov Cap-2 Maneuver | - | - | - | - | 245 | - |
| Stage 1 | - | - | - | - | 699 | - |
| Stage 2 | - | - | - | - | 610 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 21.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1061 | - | - | - | 333 |
| HCM Lane V/C Ratio | 0.014 | - | - | - | 0.364 |
| HCM Control Delay (s) | 8.4 | - | - | - | 21.9 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.6 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 372 | 193 | 393 | 344 | 60 | 129 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1366 | | | 666 | 608 | |
| Travel Time (s) | 31.0 | | | 15.1 | 13.8 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 51.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 372 | 193 | 393 | 344 | 60 | 129 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Mvmt Flow | 380 | 197 | 401 | 351 | 61 | 132 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 380 | 0 | 1533 | 380 |
| Stage 1 | - | - | - | - | 380 | - |
| Stage 2 | - | - | - | - | 1153 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 889 | - | ~ 50 | 623 |
| Stage 1 | - | - | - | - | 615 | - |
| Stage 2 | - | - | - | - | 154 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 889 | - | ~ 22 | 623 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 22 | - |
| Stage 1 | - | - | - | - | 615 | - |
| Stage 2 | - | - | - | - | 68 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 6.6 | $ 381.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 22 | 623 | - | - | 889 | - |
| HCM Lane V/C Ratio | 2.783 | 0.211 | - | - | 0.451 | - |
| HCM Control Delay (s) | $ 1174.7 | 12.3 | - | - | 12.3 | 0 |
| HCM Lane LOS | F | B | - | - | B | A |
| HCM 95th %tile Q(veh) | 7.8 | 0.8 | - | - | 2.4 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 124 | 1626 | 109 | 135 | 2477 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 124 | 1626 | 109 | 135 | 2477 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 128 | 1676 | 112 | 139 | 2554 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3287 | 894 | 0 | 0 | 1789 | 0 |
| Stage 1 | 1732 | - | - | - | - | - |
| Stage 2 | 1555 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | - | *737 | - | - | *891 | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *68 | - | - | - | - | - |
| Platoon blocked, % | 2 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | - | *737 | - | - | *891 | - |
| Mov Cap-2 Maneuver | *49 | - | - | - | - | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *58 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.9 | 0 | 0.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 737 | * 891 | - |
| HCM Lane V/C Ratio | - | - | 0.173 | 0.156 | - |
| HCM Control Delay (s) | - | - | 10.9 | 9.8 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.6 | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 557 | 6 | 3 | 499 | 2 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 557 | 6 | 3 | 499 | 2 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 1 | 2 | 2 | 1 | 2 | 2 |
| Mvmt Flow | 605 | 7 | 3 | 542 | 2 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 612 | 0 | 1158 | 306 |
| Stage 1 | - | - | - | - | 609 | - |
| Stage 2 | - | - | - | - | 549 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | - | - | 1189 | - | 313 | *957 |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 604 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | 1189 | - | 312 | *957 |
| Mov Cap-2 Maneuver | - | - | - | - | 312 | - |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 602 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 402 | - | - | 1189 | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.003 | - |
| HCM Control Delay (s) | 14 | - | - | 8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 709 | 606 | 10 | 0 | 69 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 3% | 1% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 709 | 606 | 10 | 0 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 3 | 1 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 771 | 659 | 11 | 0 | 75 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 670 | 0 | - | 0 | 1049 | 335 |
| Stage 1 | - | - | - | - | 664 | - |
| Stage 2 | - | - | - | - | 385 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1126 | - | - | - | 363 | *926 |
| Stage 1 | - | - | - | - | 859 | - |
| Stage 2 | - | - | - | - | 685 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | 1126 | - | - | - | 363 | *926 |
| Mov Cap-2 Maneuver | - | - | - | - | 363 | - |
| Stage 1 | - | - | - | - | 859 | - |
| Stage 2 | - | - | - | - | 685 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1126 | - | - | - | 926 |
| HCM Lane V/C Ratio | - | - | - | - | 0.081 |
| HCM Control Delay (s) | 0 | - | - | - | 9.2 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 44 | 99 | 134 | 60 | 5 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 44 | 99 | 134 | 60 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 0 | 2 |
| Mvmt Flow | 6 | 50 | 112 | 152 | 68 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 448 | 71 | 74 | 0 | - | 0 |
| Stage 1 | 71 | - | - | - | - | - |
| Stage 2 | 377 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 647 | 1059 | 1133 | - | - | - |
| Stage 1 | 1111 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 576 | 1059 | 1133 | - | - | - |
| Mov Cap-2 Maneuver | 576 | - | - | - | - | - |
| Stage 1 | 1111 | - | - | - | - | - |
| Stage 2 | 707 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.9 | 3.6 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1133 | - | 976 | - | - |
| HCM Lane V/C Ratio | 0.099 | - | 0.057 | - | - |
| HCM Control Delay (s) | 8.5 | 0 | 8.9 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 34 | 1640 | 39 | 0 | 2442 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 30 | | 40 | | | 40 |
| Link Distance (ft) | 147 | | 437 | | | 633 |
| Travel Time (s) | 3.3 | | 7.4 | | | 10.8 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 4% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 34 | 1640 | 39 | 0 | 2442 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 4 |
| Mvmt Flow | 0 | 35 | 1708 | 41 | 0 | 2544 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2980 | 854 | 0 | 0 | 1708 | 0 |
| Stage 1 | 1708 | - | - | - | - | - |
| Stage 2 | 1272 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *2 | *474 | - | - | *574 | - |
| Stage 1 | *491 | - | - | - | - | - |
| Stage 2 | *68 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *2 | *474 | - | - | *574 | - |
| Mov Cap-2 Maneuver | *55 | - | - | - | - | - |
| Stage 1 | *491 | - | - | - | - | - |
| Stage 2 | *68 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.2 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 474 | * 574 | - |
| HCM Lane V/C Ratio | - | - | 0.075 | - | - |
| HCM Control Delay (s) | - | - | 13.2 | 0 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0 | - |

**Notes**

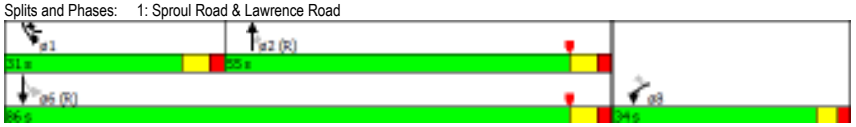
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 547 | 542 | 1502 | 574 | 380 | 1409 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 34.0 | 31.0 | 55.0 | 55.0 | 31.0 | 86.0 |
| Total Split (%) | 28.3% | 25.8% | 45.8% | 45.8% | 25.8% | 71.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 547 | 542 | 1502 | 574 | 380 | 1409 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 558 | 436 | 1533 | 518 | 388 | 1438 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 416 | 689 | 1390 | 657 | 438 | 2425 |
| Arrive On Green | 0.25 | 0.25 | 0.14 | 0.14 | 0.21 | 0.68 |
| Sat Flow, veh/h | 1663 | 1485 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 558 | 436 | 1533 | 518 | 388 | 1438 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 30.0 | 27.1 | 51.2 | 38.2 | 21.1 | 26.0 |
| Cycle Q Clear(g_c), s | 30.0 | 27.1 | 51.2 | 38.2 | 21.1 | 26.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 416 | 689 | 1390 | 657 | 438 | 2425 |
| V/C Ratio(X) | 1.34 | 0.63 | 1.10 | 0.79 | 0.89 | 0.59 |
| Avail Cap(c_a), veh/h | 416 | 678 | 1424 | 669 | 450 | 2425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 0.33 | 0.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.27 | 0.27 | 0.09 | 0.09 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.0 | 24.4 | 51.7 | 46.6 | 38.6 | 10.6 |
| Incr Delay (d2), s/veh | 158.3 | 0.5 | 47.5 | 0.9 | 18.4 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 4.7 | 0.0 | 8.3 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 57.7 | 13.9 | 57.7 | 18.9 | 23.0 | 19.1 |
| LnGrp Delay(d),s/veh | 203.3 | 24.9 | 103.9 | 47.5 | 65.3 | 11.6 |
| LnGrp LOS | F | C | F | D | E | B |
| Approach Vol, veh/h | 994 | | 2051 | | | 1826 |
| Approach Delay, s/veh | 125.1 | | 89.7 | | | 23.0 |
| Approach LOS | F | | F | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 29.8 | 56.2 | | | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 25.0 | 49.0 | | | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 23.6 | 53.7 | | | | 28.5 | | 32.5 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | | | | 33.4 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 71.9
HCM 2010 LOS E

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 47 | 242 | 13 | 240 | 44 | 1790 | 176 | 180 | 1813 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 544 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 9.3 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 46.0 | 46.0 | | 46.0 | 46.0 | 22.0 | 10.0 | 52.0 | 52.0 | 22.0 | 64.0 | |
| Total Split (%) | 38.3% | 38.3% | | 38.3% | 38.3% | 18.3% | 8.3% | 43.3% | 43.3% | 18.3% | 53.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 47 | 242 | 13 | 240 | 44 | 1790 | 176 | 180 | 1813 | 12 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1796 | 1800 | 1764 | 1764 | 1764 | 1764 | 1729 | 1816 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 43 | 257 | 14 | 211 | 47 | 1904 | 0 | 191 | 1929 | 12 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cap, veh/h | 37 | 41 | 45 | 210 | 8 | 725 | 123 | 1287 | 618 | 245 | 1762 | 6 |
| Arrive On Green | 0.33 | 0.34 | 0.33 | 0.33 | 0.34 | 0.34 | 0.04 | 0.44 | 0.00 | 0.07 | 0.34 | 0.33 |
| Sat Flow, veh/h | 0 | 121 | 133 | 444 | 24 | 1499 | 1680 | 3286 | 1544 | 1714 | 3485 | 22 |
| Grp Volume(v), veh/h | 82 | 0 | 0 | 271 | 0 | 211 | 47 | 1904 | 0 | 191 | 946 | 995 |
| Grp Sat Flow(s),veh/h/ln | 254 | 0 | 0 | 468 | 0 | 1499 | 1680 | 1643 | 1544 | 1714 | 1710 | 1796 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.9 | 1.8 | 52.4 | 0.0 | 8.9 | 60.6 | 60.6 |
| Cycle Q Clear(g_c), s | 40.0 | 0.0 | 0.0 | 40.0 | 0.0 | 10.9 | 1.8 | 52.4 | 0.0 | 8.9 | 60.6 | 60.6 |
| Prop In Lane | 0.24 | | 0.52 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 122 | 0 | 0 | 215 | 0 | 725 | 123 | 1287 | 618 | 245 | 862 | 906 |
| V/C Ratio(X) | 0.67 | 0.00 | 0.00 | 1.26 | 0.00 | 0.29 | 0.38 | 1.48 | 0.00 | 0.78 | 1.10 | 1.10 |
| Avail Cap(c_a), veh/h | 122 | 0 | 0 | 215 | 0 | 670 | 144 | 1434 | 674 | 317 | 863 | 907 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.49 | 0.49 | 0.49 |
| Uniform Delay (d), s/veh | 32.4 | 0.0 | 0.0 | 45.1 | 0.0 | 18.7 | 29.2 | 36.5 | 0.0 | 36.5 | 39.7 | 39.7 |
| Incr Delay (d2), s/veh | 13.5 | 0.0 | 0.0 | 150.1 | 0.0 | 0.2 | 1.9 | 220.0 | 0.0 | 4.5 | 53.3 | 53.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.5 | 0.0 | 2.2 | 5.7 | 5.4 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 0.0 | 0.0 | 16.1 | 0.0 | 7.6 | 1.7 | 111.1 | 0.0 | 9.9 | 75.9 | 79.8 |
| LnGrp Delay(d),s/veh | 45.9 | 0.0 | 0.0 | 195.1 | 0.0 | 18.9 | 31.1 | 264.0 | 0.0 | 43.2 | 98.8 | 98.6 |
| LnGrp LOS | D | | | F | | B | C | F | | D | F | F |
| Approach Vol, veh/h | | 82 | | | 482 | | | 1951 | | | 2132 | |
| Approach Delay, s/veh | | 45.9 | | | 118.0 | | | 258.4 | | | 93.7 | |
| Approach LOS | | D | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 16.6 | 57.4 | | 46.0 | 8.4 | 65.6 | | 46.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 17.0 | 46.0 | | 40.0 | 5.0 | 58.0 | | 40.0 |
| Max Q Clear Time (g_c+I1), s | 11.4 | 54.9 | | 42.0 | 4.3 | 63.1 | | 42.0 |
| Green Ext Time (p_c), s | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |

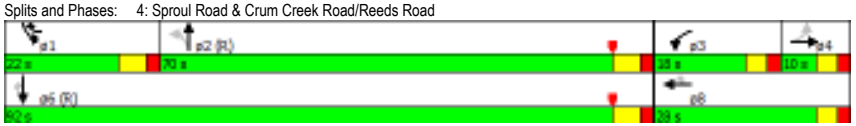
**Intersection Summary**

HCM 2010 Ctrl Delay 164.5
HCM 2010 LOS F

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 15 | 34 | 24 | 282 | 35 | 261 | 56 | 1942 | 294 | 436 | 1684 | 51 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 428 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.3 | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 2% | 4% | 1% | 2% | 0% | 4% | 2% | 2% | 0% | 1% | 2% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 10.0 | 10.0 | | 18.0 | 28.0 | 22.0 | 70.0 | 70.0 | | 22.0 | 92.0 | 92.0 |
| Total Split (%) | 8.3% | 8.3% | | 15.0% | 23.3% | 18.3% | 58.3% | 58.3% | | 18.3% | 76.7% | 76.7% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 69 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 15 | 34 | 24 | 282 | 35 | 261 | 56 | 1942 | 294 | 436 | 1684 | 51 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1768 | 1818 | 1818 | 1800 | 1836 | 1713 | 1817 | 1853 | 1818 | 1872 | 1854 |
| Adj Flow Rate, veh/h | 15 | 34 | 17 | 285 | 35 | 215 | 57 | 1962 | 231 | 440 | 1701 | 40 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 1 | 2 | 0 | 4 | 2 | 2 | 0 | 1 | 2 |
| Cap, veh/h | 115 | 56 | 28 | 377 | 352 | 526 | 182 | 2164 | 253 | 476 | 2595 | 1136 |
| Arrive On Green | 0.05 | 0.05 | 0.04 | 0.11 | 0.20 | 0.20 | 0.18 | 0.18 | 0.18 | 0.14 | 0.73 | 0.72 |
| Sat Flow, veh/h | 1098 | 1113 | 557 | 3359 | 1800 | 1561 | 254 | 3962 | 463 | 3359 | 3557 | 1576 |
| Grp Volume(v), veh/h | 15 | 0 | 51 | 285 | 35 | 215 | 57 | 1327 | 866 | 440 | 1701 | 40 |
| Grp Sat Flow(s),veh/h/ln | 1098 | 0 | 1670 | 1679 | 1800 | 1561 | 254 | 1345 | 1735 | 1679 | 1778 | 1576 |
| Q Serve(g_s), s | 1.6 | 0.0 | 3.6 | 9.9 | 1.9 | 12.7 | 24.5 | 58.0 | 58.8 | 15.5 | 29.7 | 0.9 |
| Cycle Q Clear(g_c), s | 1.6 | 0.0 | 3.6 | 9.9 | 1.9 | 12.7 | 32.2 | 58.0 | 58.8 | 15.5 | 29.7 | 0.9 |
| Prop In Lane | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 115 | 0 | 83 | 377 | 352 | 526 | 182 | 1469 | 948 | 476 | 2595 | 1136 |
| V/C Ratio(X) | 0.13 | 0.00 | 0.61 | 0.76 | 0.10 | 0.41 | 0.31 | 0.90 | 0.91 | 0.92 | 0.66 | 0.04 |
| Avail Cap(c_a), veh/h | 115 | 0 | 83 | 392 | 360 | 533 | 182 | 1469 | 948 | 476 | 2595 | 1136 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.9 | 0.0 | 56.0 | 51.7 | 39.6 | 30.6 | 39.0 | 46.1 | 46.4 | 50.9 | 8.4 | 4.8 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 12.3 | 7.9 | 0.1 | 0.5 | 4.4 | 9.4 | 14.6 | 24.0 | 1.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.9 | 0.0 | 3.5 | 8.7 | 1.7 | 9.4 | 3.5 | 31.5 | 41.5 | 13.7 | 21.2 | 0.7 |
| LnGrp Delay(d),s/veh | 55.4 | 0.0 | 68.3 | 59.6 | 39.7 | 31.1 | 43.5 | 55.5 | 61.0 | 74.8 | 9.7 | 4.8 |
| LnGrp LOS | E | | E | E | D | C | D | E | E | E | A | A |
| Approach Vol, veh/h | | 66 | | | 535 | | | 2250 | | | 2181 | |
| Approach Delay, s/veh | | 65.4 | | | 46.8 | | | 57.3 | | | 22.8 | |
| Approach LOS | | E | | | D | | | E | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.0 | 70.5 | 17.5 | 10.0 | | 92.5 | | 27.5 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 64.0 | 13.0 | 5.0 | | 86.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 18.0 | 61.3 | 12.4 | 5.6 | | 32.2 | | 15.2 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | 0.1 | 0.0 | | 42.2 | | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 41.3 |
| HCM 2010 LOS | D |

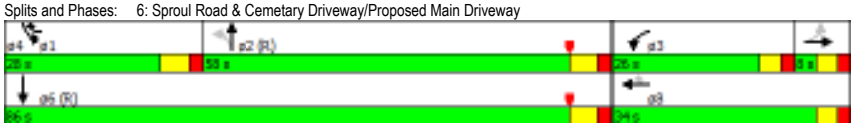
## 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 20 | 0 | 137 | 515 | 0 | 226 | 29 | 1513 | 344 | 259 | 1379 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 26.0 | 34.0 | 28.0 | 58.0 | 58.0 | | 28.0 | 86.0 | |
| Total Split (%) | 6.7% | 6.7% | | 21.7% | 28.3% | 23.3% | 48.3% | 48.3% | | 23.3% | 71.7% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 19 (16%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway







## 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 20 | 0 | 137 | 515 | 0 | 226 | 29 | 1513 | 344 | 259 | 1379 | 1 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1714 | 1872 | 1800 | 1863 | 1791 | 1791 | 1782 | 1832 | 1853 | 1747 | 1835 | 1853 |
| Adj Flow Rate, veh/h | 22 | 0 | 0 | 554 | 0 | 178 | 31 | 1627 | 270 | 278 | 1483 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 5 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 |
| Cap, veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 207 | 1803 | 298 | 318 | 2353 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.18 | 0.00 | 0.24 | 0.44 | 0.44 | 0.44 | 0.19 | 0.68 | 0.00 |
| Sat Flow, veh/h | 1106 | 1872 | 0 | 3442 | 1791 | 1523 | 339 | 4079 | 674 | 1664 | 3578 | 0 |
| Grp Volume(v), veh/h | 22 | 0 | 0 | 554 | 0 | 178 | 31 | 1211 | 686 | 278 | 1483 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1106 | 1872 | 0 | 1721 | 1791 | 1523 | 339 | 1520 | 1713 | 1664 | 1743 | 0 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.0 | 18.8 | 0.0 | 9.1 | 6.8 | 44.3 | 44.8 | 19.5 | 28.9 | 0.0 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 0.0 | 18.8 | 0.0 | 9.1 | 7.7 | 44.3 | 44.8 | 19.5 | 28.9 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.39 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 207 | 1344 | 757 | 318 | 2353 | 0 |
| V/C Ratio(X) | 0.23 | 0.00 | 0.00 | 0.88 | 0.00 | 0.28 | 0.15 | 0.90 | 0.91 | 0.87 | 0.63 | 0.00 |
| Avail Cap(c_a), veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 207 | 1344 | 757 | 319 | 2353 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 57.2 | 0.0 | 0.0 | 47.7 | 0.0 | 22.5 | 21.1 | 31.1 | 31.2 | 47.1 | 11.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.2 | 0.0 | 0.0 | 13.4 | 0.0 | 0.2 | 0.5 | 3.7 | 6.6 | 22.3 | 1.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 0.0 | 0.0 | 15.3 | 0.0 | 7.0 | 1.2 | 23.3 | 27.0 | 16.4 | 20.4 | 0.0 |
| LnGrp Delay(d),s/veh | 58.4 | 0.0 | 0.0 | 61.0 | 0.0 | 22.7 | 21.6 | 34.8 | 37.7 | 69.4 | 12.3 | 0.0 |
| LnGrp LOS | E | | | E | | C | C | C | D | E | B | |
| Approach Vol, veh/h | | 22 | | | 732 | | | 1928 | | | 1761 | |
| Approach Delay, s/veh | | 58.4 | | | 51.7 | | | 35.6 | | | 21.3 | |
| Approach LOS | | E | | | D | | | D | | | C | |

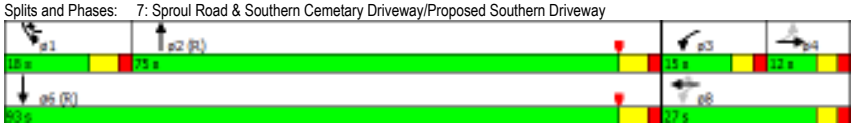
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.0 | 58.0 | 26.0 | 8.0 | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 22.0 | 52.0 | 21.0 | 3.0 | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 22.0 | 47.3 | 21.3 | 4.9 | | 31.4 | | 11.1 |
| Green Ext Time (p_c), s | 0.0 | 4.4 | 0.0 | 0.0 | | 31.4 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.7 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 12 | 0 | 70 | 170 | 0 | 115 | 0 | 2054 | 122 | 128 | 1821 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 12.0 | 12.0 | | 15.0 | 27.0 | 18.0 | | 75.0 | | 18.0 | 93.0 | |
| Total Split (%) | 10.0% | 10.0% | | 12.5% | 22.5% | 15.0% | | 62.5% | | 15.0% | 77.5% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 23 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 12 | 0 | 70 | 170 | 0 | 115 | 0 | 2054 | 122 | 128 | 1821 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1834 | 1853 | 1782 | 1872 | 0 |
| Adj Flow Rate, veh/h | 13 | 0 | 60 | 183 | 0 | 95 | 0 | 2209 | 96 | 138 | 1958 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 0 |
| Cap, veh/h | 140 | 0 | 97 | 251 | 333 | 415 | 0 | 2594 | 112 | 178 | 2619 | 0 |
| Arrive On Green | 0.06 | 0.00 | 0.06 | 0.09 | 0.00 | 0.18 | 0.00 | 0.59 | 0.59 | 0.21 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1252 | 0 | 1522 | 1681 | 1765 | 1500 | 0 | 4838 | 190 | 1697 | 3650 | 0 |
| Grp Volume(v), veh/h | 13 | 0 | 60 | 183 | 0 | 95 | 0 | 1397 | 908 | 138 | 1958 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1252 | 0 | 1522 | 1681 | 1765 | 1500 | 0 | 1394 | 1800 | 1697 | 1778 | 0 |
| Q Serve(g_s), s | 1.2 | 0.0 | 4.6 | 11.0 | 0.0 | 5.9 | 0.0 | 49.5 | 50.1 | 9.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 4.6 | 11.0 | 0.0 | 5.9 | 0.0 | 49.5 | 50.1 | 9.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.00 | | 0.11 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 140 | 0 | 97 | 251 | 333 | 415 | 0 | 1644 | 1062 | 178 | 2619 | 0 |
| V/C Ratio(X) | 0.09 | 0.00 | 0.62 | 0.73 | 0.00 | 0.23 | 0.00 | 0.85 | 0.86 | 0.77 | 0.75 | 0.00 |
| Avail Cap(c_a), veh/h | 143 | 0 | 101 | 251 | 338 | 420 | 0 | 1644 | 1062 | 184 | 2619 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.64 | 0.64 | 0.00 |
| Uniform Delay (d), s/veh | 53.2 | 0.0 | 55.3 | 46.5 | 0.0 | 33.5 | 0.0 | 20.2 | 20.4 | 46.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 10.3 | 10.3 | 0.0 | 0.3 | 0.0 | 5.7 | 8.8 | 12.1 | 1.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.8 | 0.0 | 4.0 | 10.3 | 0.0 | 4.4 | 0.0 | 27.5 | 35.9 | 7.8 | 0.8 | 0.0 |
| LnGrp Delay(d),s/veh | 53.5 | 0.0 | 65.6 | 56.8 | 0.0 | 33.8 | 0.0 | 25.9 | 29.2 | 58.2 | 1.3 | 0.0 |
| LnGrp LOS | D | | E | E | | C | | C | C | E | A | |
| Approach Vol, veh/h | | 73 | | | 278 | | | 2305 | | | 2096 | |
| Approach Delay, s/veh | | 63.4 | | | 48.9 | | | 27.2 | | | 5.0 | |
| Approach LOS | | E | | | D | | | C | | | A | |

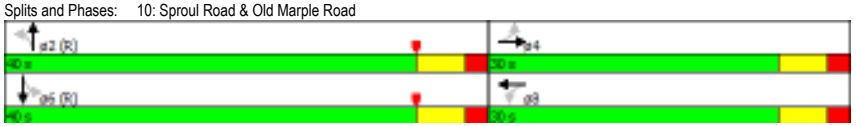
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 17.6 | 75.8 | 15.0 | 11.6 | | 93.4 | | 26.6 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 69.0 | 10.0 | 7.0 | | 87.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 52.6 | 13.5 | 6.6 | | 2.5 | | 7.9 |
| Green Ext Time (p_c), s | 0.0 | 15.3 | 0.0 | 0.0 | | 61.9 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 241 | 103 | 55 | 179 | 139 | 10 | 67 | 1624 | 71 | 3 | 1245 | 176 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 325 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 42.9% | 42.9% | | 42.9% | 42.9% | | 57.1% | 57.1% | | 57.1% | 57.1% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 13 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 70 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 241 | 103 | 55 | 179 | 139 | 10 | 67 | 1624 | 71 | 3 | 1245 | 176 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1881 | 1818 | 1782 | 1746 | 1782 | 1773 | 1751 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 256 | 110 | 46 | 190 | 148 | 4 | 71 | 1728 | 71 | 3 | 1324 | 173 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 368 | 128 | 52 | 321 | 221 | 5 | 61 | 1122 | 22 | 52 | 1377 | 191 |
| Arrive On Green | 0.34 | 0.35 | 0.34 | 0.34 | 0.35 | 0.34 | 0.49 | 0.51 | 0.49 | 0.49 | 0.51 | 0.49 |
| Sat Flow, veh/h | 815 | 365 | 148 | 689 | 633 | 16 | 20 | 2127 | 93 | 0 | 2709 | 378 |
| Grp Volume(v), veh/h | 412 | 0 | 0 | 342 | 0 | 0 | 668 | 0 | 1202 | 777 | 0 | 723 |
| Grp Sat Flow(s),veh/h/ln | 1329 | 0 | 0 | 1337 | 0 | 0 | 663 | 0 | 1577 | 1508 | 0 | 1579 |
| Q Serve(g_s), s | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 0.0 | 35.5 | 0.0 | 0.0 | 29.1 |
| Cycle Q Clear(g_c), s | 21.1 | 0.0 | 0.0 | 15.8 | 0.0 | 0.0 | 34.5 | 0.0 | 35.5 | 34.5 | 0.0 | 29.1 |
| Prop In Lane | 0.62 | | 0.11 | 0.56 | | 0.01 | 0.11 | | 0.06 | 0.00 | | 0.24 |
| Lane Grp Cap(c), veh/h | 529 | 0 | 0 | 528 | 0 | 0 | 390 | 0 | 805 | 796 | 0 | 802 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.00 | 0.65 | 0.00 | 0.00 | 1.71 | 0.00 | 1.49 | 0.98 | 0.00 | 0.90 |
| Avail Cap(c_a), veh/h | 539 | 0 | 0 | 539 | 0 | 0 | 384 | 0 | 801 | 796 | 0 | 802 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.2 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 15.7 | 0.0 | 17.2 | 16.3 | 0.0 | 15.8 |
| Incr Delay (d2), s/veh | 7.1 | 0.0 | 0.0 | 2.6 | 0.0 | 0.0 | 331.6 | 0.0 | 228.2 | 26.7 | 0.0 | 15.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.7 | 0.0 | 0.0 | 10.5 | 0.0 | 0.0 | 79.3 | 0.0 | 120.7 | 26.9 | 0.0 | 22.7 |
| LnGrp Delay(d),s/veh | 29.2 | 0.0 | 0.0 | 22.7 | 0.0 | 0.0 | 352.6 | 0.0 | 248.4 | 42.9 | 0.0 | 31.1 |
| LnGrp LOS | C | | | C | | | F | | F | D | | C |
| Approach Vol, veh/h | | 412 | | | 342 | | | 1870 | | | 1500 | |
| Approach Delay, s/veh | | 29.2 | | | 22.7 | | | 285.7 | | | 37.2 | |
| Approach LOS | | C | | | C | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.5 | | 29.5 | | 40.5 | | 29.5 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 24.0 | | 34.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 37.5 | | 23.1 | | 36.5 | | 17.8 |
| Green Ext Time (p_c), s | | 0.0 | | 0.3 | | 0.0 | | 1.8 |

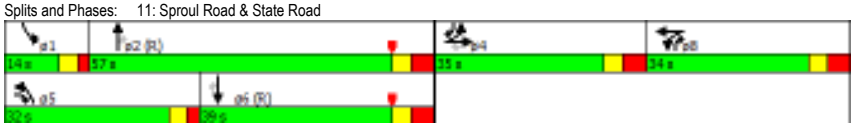
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 147.9 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 669 | 59 | 467 | 276 | 246 | 115 | 393 | 1014 | 323 | 93 | 820 | 605 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 46% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 35.0 | 35.0 | 32.0 | 34.0 | 34.0 | | 32.0 | 57.0 | 34.0 | 14.0 | 39.0 | 35.0 |
| Total Split (%) | 25.0% | 25.0% | 22.9% | 24.3% | 24.3% | | 22.9% | 40.7% | 24.3% | 10.0% | 27.9% | 25.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 669 | 59 | 467 | 276 | 246 | 115 | 393 | 1014 | 323 | 93 | 820 | 605 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1833 | 1826 | 1872 | 1860 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 748 | 0 | 0 | 275 | 281 | 0 | 414 | 1067 | 0 | 98 | 863 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 728 | 0 | 632 | 326 | 341 | 0 | 339 | 1256 | 855 | 122 | 798 | 681 |
| Arrive On Green | 0.21 | 0.00 | 0.00 | 0.18 | 0.18 | 0.00 | 0.20 | 0.38 | 0.00 | 0.07 | 0.26 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 748 | 0 | 0 | 275 | 281 | 0 | 414 | 1067 | 0 | 98 | 863 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 29.0 | 0.0 | 0.0 | 20.9 | 20.4 | 0.0 | 28.0 | 39.7 | 0.0 | 7.9 | 35.6 | 0.0 |
| Cycle Q Clear(g_c), s | 29.0 | 0.0 | 0.0 | 20.9 | 20.4 | 0.0 | 28.0 | 39.7 | 0.0 | 7.9 | 35.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 728 | 0 | 632 | 326 | 341 | 0 | 339 | 1256 | 855 | 122 | 798 | 681 |
| V/C Ratio(X) | 1.03 | 0.00 | 0.00 | 0.84 | 0.82 | 0.00 | 1.22 | 0.85 | 0.00 | 0.80 | 1.08 | 0.00 |
| Avail Cap(c_a), veh/h | 728 | 0 | 632 | 357 | 372 | 0 | 339 | 1302 | 855 | 122 | 866 | 701 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 55.5 | 0.0 | 0.0 | 55.7 | 55.6 | 0.0 | 56.0 | 40.4 | 0.0 | 64.0 | 53.5 | 0.0 |
| Incr Delay (d2), s/veh | 40.7 | 0.0 | 0.0 | 15.6 | 13.0 | 0.0 | 122.6 | 7.3 | 0.0 | 30.3 | 56.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 33.0 | 0.0 | 0.0 | 3.9 | 5.6 | 0.0 | 17.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 36.2 | 0.0 | 0.0 | 18.3 | 18.8 | 0.0 | 46.4 | 27.6 | 0.0 | 8.3 | 38.9 | 0.0 |
| LnGrp Delay(d),s/veh | 129.2 | 0.0 | 0.0 | 75.3 | 74.2 | 0.0 | 195.7 | 47.7 | 0.0 | 94.3 | 109.6 | 0.0 |
| LnGrp LOS | F | | | E | E | | F | D | | F | F | |
| Approach Vol, veh/h | | 748 | | | 556 | | | 1481 | | | 961 | |
| Approach Delay, s/veh | | 129.2 | | | 74.7 | | | 89.1 | | | 108.0 | |
| Approach LOS | | F | | | E | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.0 | 59.8 | | 35.0 | 32.0 | 41.8 | | 31.2 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 9.0 | 50.0 | | 28.0 | 27.0 | 32.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 42.2 | | 31.5 | 30.5 | 38.1 | | 23.4 |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 0.0 | 0.0 | | 0.7 |

**Intersection Summary**

HCM 2010 Ctrl Delay 99.8
HCM 2010 LOS F

**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 233 | 1460 | 460 | 41 | 1342 | 196 | 392 | 484 | 44 | 211 | 427 | 38 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 12.0 | 56.0 | 56.0 | 11.0 | 55.0 | | 21.0 | 42.0 | | 11.0 | 32.0 | |
| Total Split (%) | 10.0% | 46.7% | 46.7% | 9.2% | 45.8% | | 17.5% | 35.0% | | 9.2% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 12: Springfield Road & State Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 233 | 1460 | 460 | 41 | 1342 | 196 | 392 | 484 | 44 | 211 | 427 | 38 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1731 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 245 | 1537 | 0 | 43 | 1413 | 0 | 413 | 509 | 0 | 222 | 449 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 147 | 1475 | 660 | 119 | 1343 | 0 | 285 | 552 | 0 | 146 | 407 | 0 |
| Arrive On Green | 0.05 | 0.42 | 0.00 | 0.04 | 0.41 | 0.00 | 0.13 | 0.31 | 0.00 | 0.05 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3375 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 245 | 1537 | 0 | 43 | 1413 | 0 | 413 | 509 | 0 | 222 | 449 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 6.0 | 50.7 | 0.0 | 1.8 | 49.0 | 0.0 | 16.0 | 33.0 | 0.0 | 6.0 | 27.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.0 | 50.7 | 0.0 | 1.8 | 49.0 | 0.0 | 16.0 | 33.0 | 0.0 | 6.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 147 | 1475 | 660 | 119 | 1343 | 0 | 285 | 552 | 0 | 146 | 407 | 0 |
| V/C Ratio(X) | 1.66 | 1.04 | 0.00 | 0.36 | 1.05 | 0.00 | 1.45 | 0.92 | 0.00 | 1.52 | 1.10 | 0.00 |
| Avail Cap(c_a), veh/h | 147 | 1475 | 660 | 129 | 1343 | 0 | 285 | 552 | 0 | 175 | 407 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 29.3 | 34.6 | 0.0 | 29.1 | 35.5 | 0.0 | 34.6 | 40.2 | 0.0 | 42.3 | 46.5 | 0.0 |
| Incr Delay (d2), s/veh | 325.9 | 35.2 | 0.0 | 1.8 | 39.5 | 0.0 | 220.3 | 21.1 | 0.0 | 265.3 | 75.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 42.3 | 23.1 | 0.0 | 0.0 | 25.1 | 0.0 | 50.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 35.8 | 61.9 | 0.0 | 1.5 | 58.2 | 0.0 | 54.4 | 27.0 | 0.0 | 19.4 | 39.6 | 0.0 |
| LnGrp Delay(d),s/veh | 397.5 | 92.9 | 0.0 | 30.9 | 100.1 | 0.0 | 305.0 | 61.6 | 0.0 | 307.6 | 122.0 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | E | | F | F | |
| Approach Vol, veh/h | | 1782 | | | 1456 | | | 922 | | | 671 | |
| Approach Delay, s/veh | | 134.8 | | | 98.1 | | | 170.6 | | | 183.4 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.3 | 56.7 | 21.0 | 32.0 | 12.0 | 55.0 | 11.0 | 42.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 49.0 | 15.0 | 26.0 | 5.0 | 48.0 | 5.0 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 53.2 | 18.5 | 29.5 | 8.5 | 51.5 | 8.5 | 35.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |

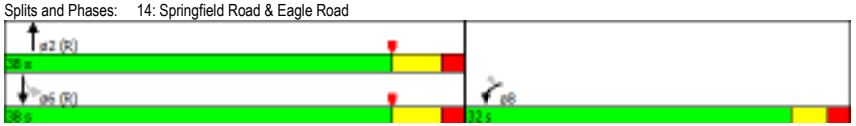
**Intersection Summary**

HCM 2010 Ctrl Delay 137.3
HCM 2010 LOS F

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 364 | 128 | 675 | 196 | 102 | 523 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 32.0 | 32.0 | 38.0 | | 38.0 | 38.0 |
| Total Split (%) | 45.7% | 45.7% | 54.3% | | 54.3% | 54.3% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 10 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 364 | 128 | 675 | 196 | 102 | 523 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1693 | 1773 | 1791 | 1809 | 1794 |
| Adj Flow Rate, veh/h | 396 | 121 | 734 | 164 | 111 | 568 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 494 | 520 | 716 | 148 | 60 | 221 |
| Arrive On Green | 0.28 | 0.28 | 0.59 | 0.57 | 0.57 | 0.59 |
| Sat Flow, veh/h | 1740 | 1439 | 1404 | 314 | 48 | 598 |
| Grp Volume(v), veh/h | 396 | 121 | 0 | 898 | 679 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1439 | 0 | 1718 | 646 | 0 |
| Q Serve(g_s), s | 14.8 | 4.6 | 0.0 | 31.6 | 8.7 | 0.0 |
| Cycle Q Clear(g_c), s | 14.8 | 4.6 | 0.0 | 31.6 | 40.2 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.18 | 0.16 | |
| Lane Grp Cap(c), veh/h | 494 | 520 | 0 | 810 | 212 | 0 |
| V/C Ratio(X) | 0.80 | 0.23 | 0.00 | 1.11 | 3.21 | 0.00 |
| Avail Cap(c_a), veh/h | 696 | 576 | 0 | 1012 | 431 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 23.3 | 15.7 | 0.0 | 18.6 | 20.4 | 0.0 |
| Incr Delay (d2), s/veh | 4.5 | 0.2 | 0.0 | 65.8 | 993.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.3 | 3.0 | 0.0 | 54.6 | 106.0 | 0.0 |
| LnGrp Delay(d),s/veh | 28.0 | 15.9 | 0.0 | 84.4 | 1014.3 | 0.0 |
| LnGrp LOS | C | B | | F | F | |
| Approach Vol, veh/h | 517 | | 898 | | | 679 |
| Approach Delay, s/veh | 25.2 | | 84.4 | | | 1014.3 |
| Approach LOS | C | | F | | | F |

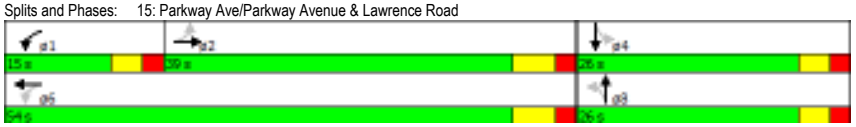
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.2 | | | | 46.2 | | 23.8 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | | | 32.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | | 33.6 | | | | 42.2 | | 17.3 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 371.3 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 747 | 134 | 234 | 828 | 9 | 209 | 26 | 342 | 6 | 14 | 44 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 623 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 17.0 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 39.0 | 39.0 | | 15.0 | 54.0 | | 26.0 | 26.0 | | 26.0 | 26.0 | |
| Total Split (%) | 48.8% | 48.8% | | 18.8% | 67.5% | | 32.5% | 32.5% | | 32.5% | 32.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 74.6 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 747 | 134 | 234 | 828 | 9 | 209 | 26 | 342 | 6 | 14 | 44 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1774 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1800 | 1827 |
| Adj Flow Rate, veh/h | 32 | 812 | 142 | 254 | 900 | 9 | 227 | 28 | 284 | 7 | 15 | 46 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 71 | 1511 | 281 | 76 | 974 | 11 | 299 | 38 | 382 | 62 | 107 | 249 |
| Arrive On Green | 0.60 | 0.61 | 0.60 | 0.60 | 0.61 | 0.60 | 0.28 | 0.28 | 0.26 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 38 | 2466 | 461 | 2 | 1591 | 19 | 1259 | 137 | 1391 | 45 | 389 | 907 |
| Grp Volume(v), veh/h | 514 | 0 | 472 | 388 | 0 | 775 | 227 | 0 | 312 | 68 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1433 | 0 | 1533 | 13 | 0 | 1599 | 1259 | 0 | 1528 | 1341 | 0 | 0 |
| Q Serve(g_s), s | 3.5 | 0.0 | 13.9 | 58.1 | 0.0 | 29.2 | 7.4 | 0.0 | 15.0 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 32.7 | 0.0 | 13.9 | 58.1 | 0.0 | 29.2 | 22.0 | 0.0 | 15.0 | 15.1 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.30 | 0.65 | | 0.01 | 1.00 | | 0.91 | 0.10 | | 0.68 |
| Lane Grp Cap(c), veh/h | 902 | 0 | 939 | 0 | 0 | 979 | 299 | 0 | 420 | 402 | 0 | 0 |
| V/C Ratio(X) | 0.57 | 0.00 | 0.50 | 0.00 | 0.00 | 0.79 | 0.76 | 0.00 | 0.74 | 0.17 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 907 | 0 | 939 | 0 | 0 | 979 | 299 | 0 | 420 | 402 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 9.1 | 0.0 | 8.8 | 0.0 | 0.0 | 11.7 | 32.1 | 0.0 | 26.9 | 22.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.4 | 0.0 | 0.0 | 4.5 | 10.8 | 0.0 | 7.0 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.5 | 0.0 | 10.1 | 0.0 | 0.0 | 20.1 | 9.9 | 0.0 | 11.4 | 2.1 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 10.0 | 0.0 | 9.3 | 0.0 | 0.0 | 16.2 | 42.9 | 0.0 | 33.8 | 22.5 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | D | | C | C | | |
| Approach Vol, veh/h | | 986 | | | 1163 | | | 539 | | | 68 | |
| Approach Delay, s/veh | | 9.6 | | | 10.8 | | | 37.6 | | | 22.5 | |
| Approach LOS | | A | | | B | | | D | | | C | |

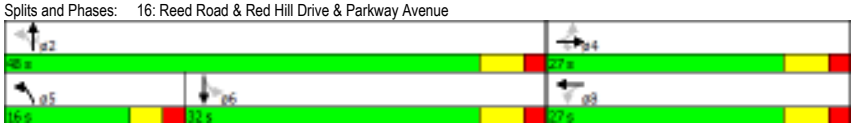
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 54.0 | | 26.0 | | 54.0 | | 26.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 33.0 | | 21.0 | | 48.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 34.7 | | 17.1 | | 60.1 | | 24.5 |
| Green Ext Time (p_c), s | | 0.0 | | 1.1 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 134 | 105 | 298 | 23 | 113 | 3 | 310 | 356 | 28 | 4 | 310 | 90 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 16.0 | 48.0 | 48.0 | 32.0 | 32.0 | |
| Total Split (%) | 36.0% | 36.0% | 36.0% | 36.0% | 36.0% | | 21.3% | 64.0% | 64.0% | 42.7% | 42.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 65.3 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 134 | 105 | 298 | 23 | 113 | 3 | 310 | 356 | 28 | 4 | 310 | 90 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1737 | 1747 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1860 | 1836 |
| Adj Flow Rate, veh/h | 141 | 111 | 272 | 24 | 119 | 2 | 326 | 375 | 27 | 4 | 326 | 80 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 198 | 133 | 484 | 62 | 240 | 3 | 567 | 919 | 789 | 55 | 421 | 102 |
| Arrive On Green | 0.31 | 0.33 | 0.33 | 0.31 | 0.33 | 0.31 | 0.17 | 0.53 | 0.53 | 0.28 | 0.29 | 0.28 |
| Sat Flow, veh/h | 353 | 408 | 1485 | 0 | 738 | 10 | 1647 | 1747 | 1499 | 5 | 1440 | 350 |
| Grp Volume(v), veh/h | 252 | 0 | 272 | 145 | 0 | 0 | 326 | 375 | 27 | 410 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 761 | 0 | 1485 | 748 | 0 | 0 | 1647 | 1747 | 1499 | 1794 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 10.2 | 0.0 | 0.0 | 0.0 | 8.3 | 8.7 | 0.6 | 0.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 21.0 | 0.0 | 10.2 | 21.0 | 0.0 | 0.0 | 8.3 | 8.7 | 0.6 | 14.4 | 0.0 | 0.0 |
| Prop In Lane | 0.56 | | 1.00 | 0.17 | | 0.01 | 1.00 | | 1.00 | 0.01 | | 0.20 |
| Lane Grp Cap(c), veh/h | 320 | 0 | 484 | 295 | 0 | 0 | 567 | 919 | 789 | 552 | 0 | 0 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.56 | 0.49 | 0.00 | 0.00 | 0.58 | 0.41 | 0.03 | 0.74 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 320 | 0 | 484 | 295 | 0 | 0 | 572 | 1112 | 955 | 744 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.4 | 0.0 | 18.8 | 17.9 | 0.0 | 0.0 | 10.5 | 9.7 | 7.7 | 22.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 12.4 | 0.0 | 1.5 | 1.3 | 0.0 | 0.0 | 1.4 | 0.3 | 0.0 | 2.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.7 | 0.0 | 7.7 | 3.8 | 0.0 | 0.0 | 7.0 | 7.6 | 0.4 | 12.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 34.8 | 0.0 | 20.3 | 19.2 | 0.0 | 0.0 | 11.9 | 9.9 | 7.7 | 24.8 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | B | | | B | A | A | C | | |
| Approach Vol, veh/h | | 524 | | | 145 | | | 728 | | | 410 | |
| Approach Delay, s/veh | | 27.2 | | | 19.2 | | | 10.7 | | | 24.8 | |
| Approach LOS | | C | | | B | | | B | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.5 | | 27.0 | 15.8 | 24.7 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | 11.0 | 26.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 11.2 | | 23.0 | 10.8 | 16.4 | | 23.0 |
| Green Ext Time (p_c), s | | 3.3 | | 0.0 | 0.0 | 2.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 35 | 333 | 176 | 158 | 328 | 63 | 174 | 0 | 124 | 81 | 0 | 40 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 150 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 1% | 2% | 0% |
| Parking (#/hr) | | | 0 | | | | | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | 15.0 | 3.0 | 15.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 8.0 | 21.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 17.0 | 37.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 28.3% | 61.7% | | 38.3% | 38.3% | | 38.3% | 38.3% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 9 (15%), Referenced to phase 2:EBTL and 6:WBT, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 35 | 333 | 176 | 158 | 328 | 63 | 174 | 0 | 124 | 81 | 0 | 40 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1779 | 1765 | 1729 | 1749 | 1764 | 1765 | 1765 | 1800 | 1800 | 1788 | 1800 |
| Adj Flow Rate, veh/h | 37 | 354 | 187 | 168 | 349 | 67 | 185 | 0 | 132 | 86 | 0 | 43 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 138 | 1144 | 519 | 246 | 856 | 164 | 464 | 0 | 400 | 264 | 20 | 92 |
| Arrive On Green | 0.37 | 0.38 | 0.38 | 0.15 | 0.60 | 0.58 | 0.27 | 0.00 | 0.25 | 0.25 | 0.00 | 0.25 |
| Sat Flow, veh/h | 176 | 2978 | 1350 | 1647 | 1427 | 274 | 1286 | 0 | 1500 | 614 | 75 | 344 |
| Grp Volume(v), veh/h | 204 | 187 | 187 | 168 | 0 | 416 | 185 | 0 | 132 | 129 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1616 | 1538 | 1350 | 1647 | 0 | 1701 | 1286 | 0 | 1500 | 1033 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 5.1 | 5.9 | 5.8 | 0.0 | 7.8 | 0.0 | 0.0 | 4.3 | 4.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 4.8 | 5.1 | 5.9 | 5.8 | 0.0 | 7.8 | 7.3 | 0.0 | 4.3 | 8.3 | 0.0 | 0.0 |
| Prop In Lane | 0.18 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 1.00 | 0.67 | | 0.33 |
| Lane Grp Cap(c), veh/h | 665 | 591 | 519 | 246 | 0 | 1021 | 464 | 0 | 400 | 358 | 0 | 0 |
| V/C Ratio(X) | 0.31 | 0.32 | 0.36 | 0.68 | 0.00 | 0.41 | 0.40 | 0.00 | 0.33 | 0.36 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 665 | 591 | 519 | 357 | 0 | 1021 | 529 | 0 | 475 | 423 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 12.9 | 12.9 | 13.2 | 24.2 | 0.0 | 6.4 | 18.8 | 0.0 | 18.1 | 20.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.2 | 1.4 | 1.9 | 3.3 | 0.0 | 1.2 | 0.6 | 0.0 | 0.5 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.7 | 4.3 | 4.4 | 5.1 | 0.0 | 7.1 | 4.8 | 0.0 | 3.3 | 3.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 14.1 | 14.4 | 15.1 | 27.5 | 0.0 | 7.6 | 19.4 | 0.0 | 18.6 | 20.9 | 0.0 | 0.0 |
| LnGrp LOS | B | B | B | C | | A | B | | B | C | | |
| Approach Vol, veh/h | | 578 | | | 584 | | | 317 | | | 129 | |
| Approach Delay, s/veh | | 14.5 | | | 13.3 | | | 19.1 | | | 20.9 | |
| Approach LOS | | B | | | B | | | B | | | C | |

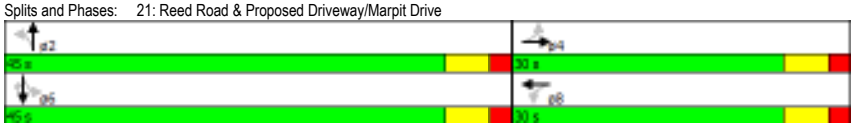
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 27.1 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 15.0 | | 18.0 | | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 8.3 | 8.4 | | 10.3 | | 9.8 | | 9.8 |
| Green Ext Time (p_c), s | 0.2 | 2.2 | | 1.1 | | 3.7 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 42 | 24 | 99 | 201 | 30 | 73 | 109 | 385 | 139 | 82 | 458 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 529 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 12.0 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 2% | 4% | 2% | 1% | 3% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | 45.0 |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 50.5 | |
| Natural Cycle: 40 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 42 | 24 | 99 | 201 | 30 | 73 | 109 | 385 | 139 | 82 | 458 | 55 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1748 | 1741 | 1800 | 1765 | 1773 | 1800 | 1782 | 1782 | 1765 |
| Adj Flow Rate, veh/h | 45 | 26 | 106 | 216 | 32 | 29 | 117 | 414 | 126 | 88 | 492 | 59 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| Cap, veh/h | 502 | 96 | 391 | 442 | 265 | 240 | 381 | 645 | 196 | 358 | 881 | 742 |
| Arrive On Green | 0.31 | 0.31 | 0.30 | 0.31 | 0.31 | 0.31 | 0.49 | 0.49 | 0.48 | 0.49 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1266 | 304 | 1241 | 1175 | 842 | 763 | 808 | 1305 | 397 | 825 | 1782 | 1500 |
| Grp Volume(v), veh/h | 45 | 0 | 132 | 216 | 0 | 61 | 117 | 0 | 540 | 88 | 492 | 59 |
| Grp Sat Flow(s),veh/h/ln | 1266 | 0 | 1546 | 1175 | 0 | 1606 | 808 | 0 | 1703 | 825 | 1782 | 1500 |
| Q Serve(g_s), s | 1.4 | 0.0 | 3.4 | 8.7 | 0.0 | 1.4 | 6.2 | 0.0 | 12.4 | 4.6 | 10.1 | 1.1 |
| Cycle Q Clear(g_c), s | 2.8 | 0.0 | 3.4 | 11.7 | 0.0 | 1.4 | 16.3 | 0.0 | 12.4 | 16.5 | 10.1 | 1.1 |
| Prop In Lane | 1.00 | | 0.80 | 1.00 | | 0.48 | 1.00 | | 0.23 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 502 | 0 | 487 | 442 | 0 | 506 | 381 | 0 | 842 | 358 | 881 | 742 |
| V/C Ratio(X) | 0.09 | 0.00 | 0.27 | 0.49 | 0.00 | 0.12 | 0.31 | 0.00 | 0.64 | 0.25 | 0.56 | 0.08 |
| Avail Cap(c_a), veh/h | 706 | 0 | 737 | 632 | 0 | 765 | 598 | 0 | 1299 | 580 | 1359 | 1144 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.8 | 0.0 | 13.8 | 17.6 | 0.0 | 12.8 | 15.0 | 0.0 | 9.9 | 15.7 | 9.3 | 7.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.3 | 0.8 | 0.0 | 0.1 | 0.5 | 0.0 | 0.8 | 0.4 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.9 | 0.0 | 2.7 | 5.3 | 0.0 | 1.2 | 2.5 | 0.0 | 9.9 | 1.9 | 8.7 | 0.8 |
| LnGrp Delay(d),s/veh | 13.9 | 0.0 | 14.1 | 18.5 | 0.0 | 12.9 | 15.4 | 0.0 | 10.7 | 16.1 | 9.8 | 7.0 |
| LnGrp LOS | B | | B | B | | B | B | | B | B | A | A |
| Approach Vol, veh/h | | 177 | | | 277 | | | 657 | | | 639 | |
| Approach Delay, s/veh | | 14.0 | | | 17.2 | | | 11.6 | | | 10.4 | |
| Approach LOS | | B | | | B | | | B | | | B | |

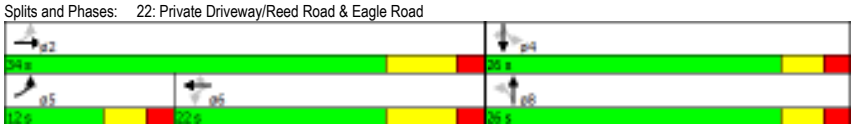
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.9 | | 21.5 | | 30.9 | | 21.5 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 39.0 | | 24.0 | | 39.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 18.8 | | 5.4 | | 19.0 | | 14.2 |
| Green Ext Time (p_c), s | | 6.0 | | 1.8 | | 6.0 | | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 195 | 230 | 0 | 0 | 322 | 442 | 1 | 0 | 1 | 541 | 0 | 215 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 34.0 | | 22.0 | 22.0 | 22.0 | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 |
| Total Split (%) | 20.0% | 56.7% | | 36.7% | 36.7% | 36.7% | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 59.6 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 195 | 230 | 0 | 0 | 322 | 442 | 1 | 0 | 1 | 541 | 0 | 215 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1808 |
| Adj Flow Rate, veh/h | 210 | 247 | 0 | 0 | 346 | 303 | 1 | 0 | 1 | 582 | 0 | 220 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cap, veh/h | 412 | 848 | 0 | 0 | 453 | 386 | 91 | 31 | 31 | 448 | 0 | 568 |
| Arrive On Green | 0.13 | 0.46 | 0.00 | 0.00 | 0.26 | 0.26 | 0.35 | 0.00 | 0.35 | 0.35 | 0.00 | 0.37 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 83 | 83 | 893 | 0 | 1537 |
| Grp Volume(v), veh/h | 210 | 247 | 0 | 0 | 346 | 303 | 2 | 0 | 0 | 582 | 0 | 220 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 166 | 0 | 0 | 893 | 0 | 1537 |
| Q Serve(g_s), s | 4.5 | 5.0 | 0.0 | 0.0 | 10.9 | 11.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.2 |
| Cycle Q Clear(g_c), s | 4.5 | 5.0 | 0.0 | 0.0 | 10.9 | 11.4 | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 6.2 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 412 | 848 | 0 | 0 | 453 | 386 | 149 | 0 | 0 | 433 | 0 | 568 |
| V/C Ratio(X) | 0.51 | 0.29 | 0.00 | 0.00 | 0.76 | 0.79 | 0.01 | 0.00 | 0.00 | 1.35 | 0.00 | 0.39 |
| Avail Cap(c_a), veh/h | 422 | 866 | 0 | 0 | 466 | 396 | 150 | 0 | 0 | 438 | 0 | 570 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.9 | 9.9 | 0.0 | 0.0 | 20.2 | 20.5 | 15.2 | 0.0 | 0.0 | 22.1 | 0.0 | 13.8 |
| Incr Delay (d2), s/veh | 1.0 | 0.3 | 0.0 | 0.0 | 8.0 | 10.8 | 0.0 | 0.0 | 0.0 | 170.1 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 | 0.9 | 0.0 | 0.0 | 0.0 | 12.3 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.0 | 4.6 | 0.0 | 0.0 | 10.4 | 9.9 | 0.0 | 0.0 | 0.0 | 51.8 | 0.0 | 4.9 |
| LnGrp Delay(d),s/veh | 14.3 | 10.3 | 0.0 | 0.0 | 28.4 | 32.2 | 15.2 | 0.0 | 0.0 | 204.5 | 0.0 | 14.2 |
| LnGrp LOS | B | B | | | C | C | B | | | F | | B |
| Approach Vol, veh/h | | 457 | | | 649 | | | 2 | | | 802 | |
| Approach Delay, s/veh | | 12.1 | | | 30.2 | | | 15.2 | | | 152.3 | |
| Approach LOS | | B | | | C | | | B | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 33.3 | | 26.0 | 11.8 | 21.5 | | 26.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 21.0 | 7.0 | 15.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 7.5 | | 23.0 | 7.0 | 13.9 | | 23.0 |
| Green Ext Time (p_c), s | | 6.3 | | 0.0 | 0.0 | 0.7 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 77.1 |
| HCM 2010 LOS | E |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 716 | 1419 | 3 | 682 | 1377 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 738 | 1466 | 0 | 703 | 1420 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 33.0 | 37.0 | | 33.0 | 70.0 |
| Total Split (%) | | 47.1% | 52.9% | | 47.1% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 25.0 | 30.0 | | 25.0 | 70.0 |
| Actuated g/C Ratio | | 0.36 | 0.43 | | 0.36 | 1.00 |
| v/c Ratio | | 0.80 | 1.00 | | 1.20 | 0.84 |
| Control Delay | | 25.9 | 38.2 | | 132.1 | 5.9 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 25.9 | 38.2 | | 132.1 | 5.9 |
| LOS | | C | D | | F | A |
| Approach Delay | | | 38.2 | | | 47.7 |
| Approach LOS | | | D | | | D |
| Queue Length 50th (ft) | | 198 | 347 | | ~377 | 0 |
| Queue Length 95th (ft) | | m202 | m203 | | #570 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 920 | 1470 | | 584 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.80 | 1.00 | | 1.20 | 0.84 |

**Intersection Summary**

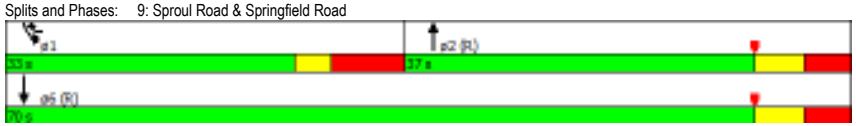
Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 6 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 40.7 — Intersection LOS: D
Intersection Capacity Utilization 93.9% — ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 126 | 53 | 165 | 9 | 42 | 22 | 111 | 339 | 4 | 24 | 230 | 121 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 184 | | | 229 | | | 361 | | | 623 | |
| Travel Time (s) | | 5.0 | | | 6.2 | | | 9.8 | | | 17.0 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 23.8 |
| Intersection LOS | C |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 126 | 53 | 165 | 0 | 9 | 42 | 22 | 0 | 111 | 339 | 4 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 0 | 1 | 2 | 11 | 0 | 5 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 0 | 135 | 57 | 177 | 0 | 10 | 45 | 24 | 0 | 119 | 365 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.3 | 12.5 | 34.2 |
| HCM LOS | B | B | D |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 24% | 70% | 0% | 12% | 6% |
| Vol Thru, % | 75% | 30% | 0% | 58% | 61% |
| Vol Right, % | 1% | 0% | 100% | 30% | 32% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 454 | 179 | 165 | 73 | 375 |
| LT Vol | 111 | 126 | 0 | 9 | 24 |
| Through Vol | 339 | 53 | 0 | 42 | 230 |
| RT Vol | 4 | 0 | 165 | 22 | 121 |
| Lane Flow Rate | 488 | 192 | 177 | 78 | 403 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.843 | 0.413 | 0.327 | 0.171 | 0.692 |
| Departure Headway (Hd) | 6.217 | 7.724 | 6.643 | 7.822 | 6.177 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 581 | 466 | 539 | 456 | 585 |
| Service Time | 4.269 | 5.484 | 4.403 | 5.91 | 4.233 |
| HCM Lane V/C Ratio | 0.84 | 0.412 | 0.328 | 0.171 | 0.689 |
| HCM Control Delay | 34.2 | 15.9 | 12.6 | 12.5 | 22.1 |
| HCM Lane LOS | D | C | B | B | C |
| HCM 95th-tile Q | 9 | 2 | 1.4 | 0.6 | 5.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 24 | 230 | 121 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 26 | 247 | 130 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 22.1 |
| HCM LOS | C |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 17 | 2187 | 5 | 19 | 2125 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 17 | 2187 | 5 | 19 | 2125 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 17 | 2232 | 5 | 19 | 2168 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3357 | 1120 | 0 | 0 | 2237 | 0 |
| Stage 1 | 2234 | - | - | - | - | - |
| Stage 2 | 1123 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *4 | *228 | - | - | *276 | - |
| Stage 1 | *236 | - | - | - | - | - |
| Stage 2 | *250 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *4 | *228 | - | - | *275 | - |
| Mov Cap-2 Maneuver | *4 | - | - | - | - | - |
| Stage 1 | *236 | - | - | - | - | - |
| Stage 2 | *250 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 22.1 | 0 | 0.2 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 228 | * 275 | - |
| HCM Lane V/C Ratio | - | - | 0.076 | 0.071 | - |
| HCM Control Delay (s) | - | - | 22.1 | 19.1 | 0 |
| HCM Lane LOS | - | - | C | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.2 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 78 | 107 | 74 | 809 | 615 | 260 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 59.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 78 | 107 | 74 | 809 | 615 | 260 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 0 | 0 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 90 | 123 | 85 | 930 | 707 | 299 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1956 | 856 | 1006 | 0 | - | 0 |
| Stage 1 | 856 | - | - | - | - | - |
| Stage 2 | 1100 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | ~ 75 | 431 | 483 | - | - | - |
| Stage 1 | 470 | - | - | - | - | - |
| Stage 2 | 285 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | ~ 48 | 431 | 483 | - | - | - |
| Mov Cap-2 Maneuver | ~ 48 | - | - | - | - | - |
| Stage 1 | 470 | - | - | - | - | - |
| Stage 2 | 181 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 618.8 | 1.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 483 | - | 99 | - | - |
| HCM Lane V/C Ratio | 0.176 | - | 2.148 | - | - |
| HCM Control Delay (s) | 14 | 0 | $ 618.8 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | 18.5 | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 295 | 459 | 30 | 0 | 476 | 96 | 0 | 0 | 12 | 60 | 0 | 159 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 375 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 10.2 | | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | | 1 | | | | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 295 | 459 | 30 | 0 | 476 | 96 | 0 | 0 | 12 | 60 | 0 | 159 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 311 | 483 | 32 | 0 | 501 | 101 | 0 | 0 | 13 | 63 | 0 | 167 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 602 | 0 | 0 | 515 | 0 | 0 | 1755 | 1722 | 258 | 1415 | 1688 | 552 |
| Stage 1 | - | - | - | - | - | - | 1120 | 1120 | - | 552 | 552 | - |
| Stage 2 | - | - | - | - | - | - | 635 | 602 | - | 863 | 1136 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.5 | 6.53 | 6.5 | 7.5 | 6.53 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.3 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 2.9 | 2.8 | 4.019 | 2.9 |
| Pot Cap-1 Maneuver | *984 | - | - | 1014 | - | - | *126 | *148 | 863 | *310 | *159 | *814 |
| Stage 1 | - | - | - | - | - | - | *271 | *281 | - | *843 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *843 | *588 | - | *354 | *276 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *984 | - | - | 1013 | - | - | *76 | *101 | 862 | *230 | *109 | *814 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *76 | *101 | - | *230 | *109 | - |
| Stage 1 | - | - | - | - | - | - | *185 | *192 | - | *577 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *670 | *588 | - | *238 | *189 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 3.9 | 0 | 9.2 | 19.2 |
| HCM LOS | | | A | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 862 | * 984 | - | - | 1013 | - | - | 480 |
| HCM Lane V/C Ratio | 0.015 | 0.316 | - | - | - | - | - | 0.48 |
| HCM Control Delay (s) | 9.2 | 10.3 | - | - | 0 | - | - | 19.2 |
| HCM Lane LOS | A | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0 | 1.4 | - | - | 0 | - | - | 2.6 |

| Notes |
|---|

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 52 | 238 | 482 | 28 | 159 | 555 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 5.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 52 | 238 | 482 | 28 | 159 | 555 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 55 | 253 | 513 | 30 | 169 | 590 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1442 | 513 | 0 | 0 | 513 | 0 |
| Stage 1 | 513 | - | - | - | - | - |
| Stage 2 | 929 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 184 | 609 | - | - | 799 | - |
| Stage 1 | 720 | - | - | - | - | - |
| Stage 2 | 471 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 126 | 609 | - | - | 799 | - |
| Mov Cap-2 Maneuver | 250 | - | - | - | - | - |
| Stage 1 | 720 | - | - | - | - | - |
| Stage 2 | 323 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24.6 | 0 | 2.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 484 | 799 | - |
| HCM Lane V/C Ratio | - | - | 0.637 | 0.212 | - |
| HCM Control Delay (s) | - | - | 24.6 | 10.7 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 4.4 | 0.8 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 264 | 435 | 9 | 22 | 42 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 5 | 5 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 11% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 264 | 435 | 9 | 22 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 5 | 5 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 0 | 1 | 1 | 11 | 0 | 0 |
| Mvmt Flow | 6 | 338 | 558 | 12 | 28 | 54 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 574 | 0 | - | 0 | 919 | 290 |
| Stage 1 | - | - | - | - | 568 | - |
| Stage 2 | - | - | - | - | 351 | - |
| Critical Hdwy | 4.3 | - | - | - | 6.2 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5 | - |
| Follow-up Hdwy | 3 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 761 | - | - | - | 353 | 765 |
| Stage 1 | - | - | - | - | 643 | - |
| Stage 2 | - | - | - | - | 850 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 761 | - | - | - | 346 | 761 |
| Mov Cap-2 Maneuver | - | - | - | - | 346 | - |
| Stage 1 | - | - | - | - | 639 | - |
| Stage 2 | - | - | - | - | 839 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 12.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 761 | - | - | - | 539 |
| HCM Lane V/C Ratio | 0.008 | - | - | - | 0.152 |
| HCM Control Delay (s) | 9.8 | - | - | - | 12.9 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.5 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 226 | 69 | 163 | 334 | 102 | 174 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1458 | | | 574 | 532 | |
| Travel Time (s) | 33.1 | | | 13.0 | 12.1 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 12.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 226 | 69 | 163 | 334 | 102 | 174 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 240 | 73 | 173 | 355 | 109 | 185 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 240 | 0 | 942 | 240 |
| Stage 1 | - | - | - | - | 240 | - |
| Stage 2 | - | - | - | - | 702 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 994 | - | 173 | 785 |
| Stage 1 | - | - | - | - | 787 | - |
| Stage 2 | - | - | - | - | 346 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 994 | - | 135 | 785 |
| Mov Cap-2 Maneuver | - | - | - | - | 135 | - |
| Stage 1 | - | - | - | - | 787 | - |
| Stage 2 | - | - | - | - | 271 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 3.1 | 42.1 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 135 | 785 | - | - | 994 | - |
| HCM Lane V/C Ratio | 0.804 | 0.236 | - | - | 0.174 | - |
| HCM Control Delay (s) | 95.2 | 11 | - | - | 9.4 | 0 |
| HCM Lane LOS | F | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 4.9 | 0.9 | - | - | 0.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 151 | 1580 | 179 | 172 | 1640 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 14 | 12 | 13 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 2% | 1% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 151 | 1580 | 179 | 172 | 1640 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 1 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 157 | 1646 | 186 | 179 | 1708 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2952 | 916 | 0 | 0 | 1832 | 0 |
| Stage 1 | 1739 | - | - | - | - | - |
| Stage 2 | 1213 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *10 | *737 | - | - | 884 | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *491 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *8 | *737 | - | - | 884 | - |
| Mov Cap-2 Maneuver | *240 | - | - | - | - | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *392 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.2 | 0 | 1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 737 | 884 | - |
| HCM Lane V/C Ratio | - | - | 0.213 | 0.203 | - |
| HCM Control Delay (s) | - | - | 11.2 | 10.1 | - |
| HCM Lane LOS | - | - | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.8 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 537 | 4 | 2 | 510 | 3 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 1% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 537 | 4 | 2 | 510 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 2 | 2 | 1 | 2 | 2 |
| Mvmt Flow | 565 | 4 | 2 | 537 | 3 | 2 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 569 | 0 | 1108 | 285 |
| Stage 1 | - | - | - | - | 567 | - |
| Stage 2 | - | - | - | - | 541 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | - | - | 1154 | - | 294 | *1014 |
| Stage 1 | - | - | - | - | 905 | - |
| Stage 2 | - | - | - | - | 611 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | 1154 | - | 293 | *1014 |
| Mov Cap-2 Maneuver | - | - | - | - | 293 | - |
| Stage 1 | - | - | - | - | 905 | - |
| Stage 2 | - | - | - | - | 610 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 409 | - | - | 1154 | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.002 | - |
| HCM Control Delay (s) | 13.9 | - | - | 8.1 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 765 | 547 | 7 | 0 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 765 | 547 | 7 | 0 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 789 | 564 | 7 | 0 | 32 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 571 | 0 | - | 0 | 962 | 286 |
| Stage 1 | - | - | - | - | 568 | - |
| Stage 2 | - | - | - | - | 394 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | *1197 | - | - | - | *440 | *926 |
| Stage 1 | - | - | - | - | *957 | - |
| Stage 2 | - | - | - | - | *676 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | *1197 | - | - | - | *440 | *926 |
| Mov Cap-2 Maneuver | - | - | - | - | *440 | - |
| Stage 1 | - | - | - | - | *957 | - |
| Stage 2 | - | - | - | - | *676 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 1197 | - | - | - | 926 |
| HCM Lane V/C Ratio | - | - | - | - | 0.035 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 2 | 26 | 49 | 342 | 194 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 26 | 49 | 342 | 194 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 0 | 2 |
| Mvmt Flow | 2 | 27 | 52 | 360 | 204 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 668 | 205 | 206 | 0 | - | 0 |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 463 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 475 | 889 | 1021 | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 720 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 445 | 889 | 1021 | - | - | - |
| Mov Cap-2 Maneuver | 445 | - | - | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 674 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.5 | 1.1 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1021 | - | 830 | - | - |
| HCM Lane V/C Ratio | 0.051 | - | 0.036 | - | - |
| HCM Control Delay (s) | 8.7 | 0 | 9.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.1 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 19 | 1991 | 24 | 0 | 2100 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 153 | | 428 | | | 98 |
| Travel Time (s) | 4.2 | | 7.3 | | | 1.7 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 19 | 1991 | 24 | 0 | 2100 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 19 | 2011 | 24 | 0 | 2121 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3072 | 1006 | 0 | 0 | 2011 | 0 |
| Stage 1 | 2011 | - | - | - | - | - |
| Stage 2 | 1061 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *1 | *299 | - | - | *362 | - |
| Stage 1 | *310 | - | - | - | - | - |
| Stage 2 | *262 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *1 | *299 | - | - | *362 | - |
| Mov Cap-2 Maneuver | *130 | - | - | - | - | - |
| Stage 1 | *310 | - | - | - | - | - |
| Stage 2 | *262 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.9 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 299 | * 362 | - |
| HCM Lane V/C Ratio | - | - | 0.064 | - | - |
| HCM Control Delay (s) | - | - | 17.9 | 0 | - |
| HCM Lane LOS | - | - | C | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0 | - |

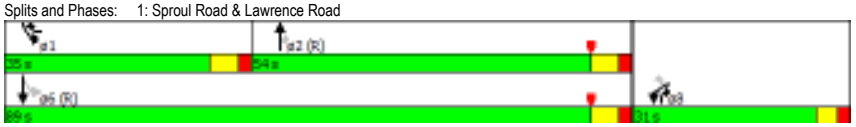
| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

# *2020 PROJECTED CONDITIONS WITH IMPROVEMENTS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 350 | 649 | 1288 | 395 | 407 | 887 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 331 | | 389 | | | 1061 |
| Travel Time (s) | 5.0 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 31.0 | 35.0 | 54.0 | 31.0 | 35.0 | 89.0 |
| Total Split (%) | 25.8% | 29.2% | 45.0% | 25.8% | 29.2% | 74.2% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 6 (5%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 80 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 350 | 649 | 1288 | 395 | 407 | 887 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1781 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 357 | 594 | 1314 | 311 | 415 | 905 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 692 | 615 | 1323 | 1069 | 473 | 2419 |
| Arrive On Green | 0.22 | 0.22 | 1.00 | 1.00 | 0.14 | 0.70 |
| Sat Flow, veh/h | 3075 | 1514 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 357 | 594 | 1314 | 311 | 415 | 905 |
| Grp Sat Flow(s),veh/h/ln | 1537 | 1514 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 12.2 | 27.0 | 0.0 | 0.0 | 11.9 | 12.8 |
| Cycle Q Clear(g_c), s | 12.2 | 27.0 | 0.0 | 0.0 | 11.9 | 12.8 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 692 | 615 | 1323 | 1069 | 473 | 2419 |
| V/C Ratio(X) | 0.52 | 0.97 | 0.99 | 0.29 | 0.88 | 0.37 |
| Avail Cap(c_a), veh/h | 692 | 552 | 1681 | 1132 | 667 | 2419 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.74 | 0.74 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.0 | 34.0 | 11.0 | 1.0 | 16.0 | 7.3 |
| Incr Delay (d2), s/veh | 0.7 | 28.9 | 19.6 | 0.5 | 9.4 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 10.4 | 0.0 | 1.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.4 | 30.6 | 32.6 | 2.3 | 21.1 | 10.3 |
| LnGrp Delay(d),s/veh | 41.9 | 62.9 | 41.1 | 1.5 | 26.5 | 7.8 |
| LnGrp LOS | D | E | D | A | C | A |
| Approach Vol, veh/h | 951 | | 1625 | | | 1320 |
| Approach Delay, s/veh | 55.0 | | 33.5 | | | 13.6 |
| Approach LOS | E | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 21.8 | 67.2 | | | | 89.0 | | 31.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 29.0 | 48.0 | | | | 83.0 | | 26.0 |
| Max Q Clear Time (g_c+I1), s | 14.4 | 2.5 | | | | 15.3 | | 29.5 |
| Green Ext Time (p_c), s | 1.3 | 18.7 | | | | 20.7 | | 0.0 |

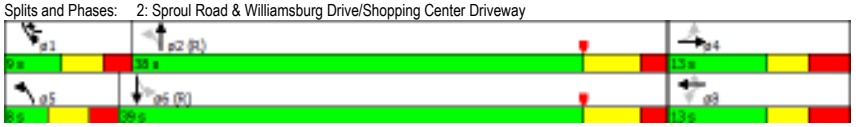
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.0 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 40 | 15 | 37 | 72 | 6 | 79 | 26 | 1618 | 81 | 84 | 1298 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 611 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.4 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 9.0 | 8.0 | 38.0 | | 9.0 | 39.0 | |
| Total Split (%) | 21.7% | 21.7% | | 21.7% | 21.7% | 15.0% | 13.3% | 63.3% | | 15.0% | 65.0% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 40 | 15 | 37 | 72 | 6 | 79 | 26 | 1618 | 81 | 84 | 1298 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1698 | 1800 | 1764 | 1739 | 1696 | 1764 | 1697 | 1835 | 1748 | 1781 | 1800 |
| Adj Flow Rate, veh/h | 42 | 16 | 38 | 75 | 6 | 75 | 27 | 1685 | 0 | 88 | 1352 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 4 | 3 | 5 | 5 |
| Cap, veh/h | 126 | 43 | 54 | 272 | 18 | 285 | 391 | 2434 | 0 | 379 | 2049 | 26 |
| Arrive On Green | 0.12 | 0.13 | 0.12 | 0.12 | 0.13 | 0.13 | 0.07 | 1.00 | 0.00 | 0.13 | 1.00 | 1.00 |
| Sat Flow, veh/h | 300 | 323 | 408 | 1173 | 134 | 1442 | 1680 | 4548 | 0 | 1664 | 3423 | 43 |
| Grp Volume(v), veh/h | 96 | 0 | 0 | 81 | 0 | 75 | 27 | 1685 | 0 | 88 | 668 | 701 |
| Grp Sat Flow(s),veh/h/ln | 1030 | 0 | 0 | 1307 | 0 | 1442 | 1680 | 1425 | 0 | 1664 | 1692 | 1774 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 0.4 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 0.0 | 3.5 | 0.0 | 2.6 | 0.4 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| Prop In Lane | 0.44 | | 0.40 | 0.93 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 206 | 0 | 0 | 268 | 0 | 285 | 391 | 2434 | 0 | 379 | 1013 | 1062 |
| V/C Ratio(X) | 0.47 | 0.00 | 0.00 | 0.30 | 0.00 | 0.26 | 0.07 | 0.69 | 0.00 | 0.23 | 0.66 | 0.66 |
| Avail Cap(c_a), veh/h | 206 | 0 | 0 | 268 | 0 | 285 | 445 | 2434 | 0 | 414 | 1013 | 1062 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.90 | 0.90 | 0.90 |
| Uniform Delay (d), s/veh | 25.5 | 0.0 | 0.0 | 24.4 | 0.0 | 20.4 | 4.6 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.6 | 0.0 | 0.0 | 0.6 | 0.0 | 0.5 | 0.1 | 1.6 | 0.0 | 0.3 | 3.0 | 2.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.0 | 0.0 | 0.0 | 2.4 | 0.0 | 2.0 | 0.3 | 0.7 | 0.0 | 1.0 | 1.5 | 1.5 |
| LnGrp Delay(d),s/veh | 27.2 | 0.0 | 0.0 | 25.1 | 0.0 | 20.9 | 4.7 | 1.7 | 0.0 | 4.3 | 3.0 | 2.9 |
| LnGrp LOS | C | | | C | | C | A | A | | A | A | A |
| Approach Vol, veh/h | | 96 | | | 156 | | | 1712 | | | 1457 | |
| Approach Delay, s/veh | | 27.2 | | | 23.0 | | | 1.8 | | | 3.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.8 | 39.2 | | 13.0 | 6.1 | 40.9 | | 13.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 32.0 | | 7.0 | 3.0 | 33.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | 3.7 | 2.5 | | 7.8 | 2.9 | 2.5 | | 5.5 |
| Green Ext Time (p_c), s | 0.0 | 19.0 | | 0.0 | 0.0 | 19.4 | | 0.1 |

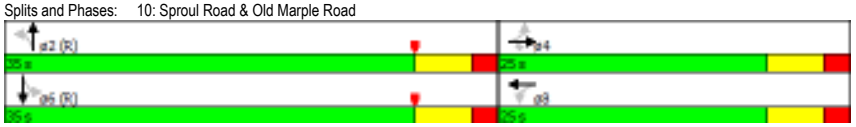
**Intersection Summary**

HCM 2010 Ctrl Delay 4.0
HCM 2010 LOS A

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 135 | 74 | 38 | 217 | 238 | 1 | 169 | 1194 | 40 | 1 | 819 | 147 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | | 35.0 | 35.0 | | 35.0 | 35.0 | |
| Total Split (%) | 41.7% | 41.7% | 41.7% | 41.7% | 41.7% | | 58.3% | 58.3% | | 58.3% | 58.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 135 | 74 | 38 | 217 | 238 | 1 | 169 | 1194 | 40 | 1 | 819 | 147 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1795 | 1765 | 1782 | 1714 | 1782 | 1705 | 1720 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 144 | 79 | 35 | 231 | 253 | 1 | 180 | 1270 | 34 | 1 | 871 | 127 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 0 | 4 | 4 |
| Cap, veh/h | 319 | 155 | 500 | 308 | 257 | 1 | 255 | 1627 | 43 | 183 | 1464 | 213 |
| Arrive On Green | 0.32 | 0.33 | 0.33 | 0.32 | 0.33 | 0.32 | 0.48 | 0.50 | 0.48 | 0.48 | 0.50 | 0.48 |
| Sat Flow, veh/h | 660 | 465 | 1500 | 659 | 771 | 3 | 514 | 3252 | 87 | 412 | 2928 | 427 |
| Grp Volume(v), veh/h | 223 | 0 | 35 | 485 | 0 | 0 | 180 | 638 | 666 | 1 | 497 | 501 |
| Grp Sat Flow(s),veh/h/ln | 1125 | 0 | 1500 | 1432 | 0 | 0 | 514 | 1634 | 1705 | 412 | 1671 | 1684 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.0 | 9.3 | 0.0 | 0.0 | 15.8 | 19.2 | 19.2 | 0.1 | 12.7 | 12.8 |
| Cycle Q Clear(g_c), s | 9.7 | 0.0 | 1.0 | 19.0 | 0.0 | 0.0 | 29.0 | 19.2 | 19.2 | 19.8 | 12.7 | 12.8 |
| Prop In Lane | 0.65 | | 1.00 | 0.48 | | 0.00 | 1.00 | | 0.05 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 455 | 0 | 500 | 542 | 0 | 0 | 255 | 817 | 853 | 183 | 836 | 842 |
| V/C Ratio(X) | 0.49 | 0.00 | 0.07 | 0.89 | 0.00 | 0.00 | 0.70 | 0.78 | 0.78 | 0.01 | 0.59 | 0.59 |
| Avail Cap(c_a), veh/h | 455 | 0 | 500 | 542 | 0 | 0 | 255 | 817 | 852 | 184 | 836 | 842 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.6 | 0.0 | 13.7 | 20.5 | 0.0 | 0.0 | 24.1 | 12.4 | 12.4 | 21.7 | 10.7 | 10.8 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.1 | 17.3 | 0.0 | 0.0 | 15.1 | 7.3 | 7.0 | 0.1 | 3.1 | 3.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.9 | 0.0 | 0.7 | 16.0 | 0.0 | 0.0 | 7.2 | 15.5 | 16.0 | 0.0 | 10.7 | 10.8 |
| LnGrp Delay(d),s/veh | 17.4 | 0.0 | 13.7 | 37.7 | 0.0 | 0.0 | 39.1 | 19.7 | 19.5 | 21.7 | 13.8 | 13.9 |
| LnGrp LOS | B | | B | D | | | D | B | B | C | B | B |
| Approach Vol, veh/h | | 258 | | | 485 | | | 1484 | | | 999 | |
| Approach Delay, s/veh | | 16.9 | | | 37.7 | | | 22.0 | | | 13.8 | |
| Approach LOS | | B | | | D | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 35.0 | | 25.0 | | 35.0 | | 25.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 29.0 | | 19.0 | | 29.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 31.0 | | 11.7 | | 21.8 | | 21.0 |
| Green Ext Time (p_c), s | | 0.0 | | 1.9 | | 5.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.4 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 333 | 15 | 312 | 165 | 72 | 61 | 477 | 1151 | 324 | 21 | 583 | 428 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 48% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 20.0 | 20.0 | 48.0 | 20.0 | 20.0 | | 48.0 | 70.0 | 20.0 | 10.0 | 32.0 | 20.0 |
| Total Split (%) | 16.7% | 16.7% | 40.0% | 16.7% | 16.7% | | 40.0% | 58.3% | 16.7% | 8.3% | 26.7% | 16.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 333 | 15 | 312 | 165 | 72 | 61 | 477 | 1151 | 324 | 21 | 583 | 428 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1826 | 1788 | 1844 | 1872 | 1814 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 358 | 0 | 0 | 124 | 143 | 0 | 497 | 1199 | 0 | 22 | 607 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 406 | 0 | 764 | 190 | 193 | 0 | 630 | 1959 | 1028 | 44 | 719 | 500 |
| Arrive On Green | 0.12 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.36 | 0.57 | 0.00 | 0.03 | 0.22 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 358 | 0 | 0 | 124 | 143 | 0 | 497 | 1199 | 0 | 22 | 607 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 12.2 | 0.0 | 0.0 | 8.0 | 9.2 | 0.0 | 31.8 | 28.4 | 0.0 | 1.5 | 21.0 | 0.0 |
| Cycle Q Clear(g_c), s | 12.2 | 0.0 | 0.0 | 8.0 | 9.2 | 0.0 | 31.8 | 28.4 | 0.0 | 1.5 | 21.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 406 | 0 | 764 | 190 | 193 | 0 | 630 | 1959 | 1028 | 44 | 719 | 500 |
| V/C Ratio(X) | 0.88 | 0.00 | 0.00 | 0.65 | 0.74 | 0.00 | 0.79 | 0.61 | 0.00 | 0.50 | 0.84 | 0.00 |
| Avail Cap(c_a), veh/h | 406 | 0 | 747 | 208 | 212 | 0 | 622 | 1922 | 1011 | 86 | 719 | 500 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.2 | 0.0 | 0.0 | 51.5 | 52.0 | 0.0 | 34.3 | 16.7 | 0.0 | 57.7 | 45.1 | 0.0 |
| Incr Delay (d2), s/veh | 19.7 | 0.0 | 0.0 | 6.3 | 11.8 | 0.0 | 6.8 | 1.4 | 0.0 | 8.4 | 11.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.3 | 0.0 | 0.0 | 7.7 | 9.0 | 0.0 | 24.3 | 19.2 | 0.0 | 1.5 | 16.2 | 0.0 |
| LnGrp Delay(d),s/veh | 71.9 | 0.0 | 0.0 | 57.7 | 63.8 | 0.0 | 44.2 | 18.2 | 0.0 | 66.1 | 56.6 | 0.0 |
| LnGrp LOS | E | | | E | E | | D | B | | E | E | |
| Approach Vol, veh/h | | 358 | | | 267 | | | 1696 | | | 629 | |
| Approach Delay, s/veh | | 71.9 | | | 61.0 | | | 25.8 | | | 57.0 | |
| Approach LOS | | E | | | E | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.1 | 74.1 | | 20.0 | 49.2 | 32.0 | | 18.8 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 63.0 | | 13.0 | 43.0 | * 25 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 30.9 | | 14.7 | 34.3 | 23.5 | | 11.7 |
| Green Ext Time (p_c), s | 0.0 | 9.2 | | 0.0 | 4.1 | 0.4 | | 0.1 |

**Intersection Summary**

HCM 2010 Ctrl Delay 41.2
HCM 2010 LOS D

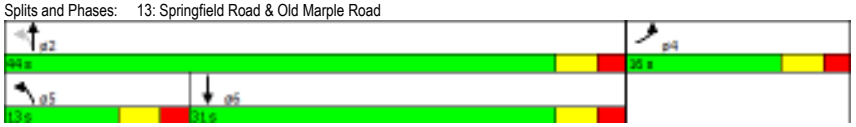
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 43 | 48 | 59 | 832 | 489 | 409 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 538 | |
| Travel Time (s) | 10.6 | | | 23.1 | 14.7 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | | 8.0 | 13.0 | 13.0 | |
| Total Split (s) | 16.0 | | 13.0 | 44.0 | 31.0 | |
| Total Split (%) | 26.7% | | 21.7% | 73.3% | 51.7% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | Max | Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 57.7 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 13: Springfield Road & Old Marple Road








| Movement | EBL | EBR | NBL | NBT | SBT | SBR | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Volume (veh/h) | 43 | 48 | 59 | 832 | 489 | 409 | | |
| Number | 7 | 14 | 5 | 2 | 6 | 16 | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Adj Sat Flow, veh/h/ln | 1701 | 1800 | 1800 | 1733 | 1723 | 1809 | | |
| Adj Flow Rate, veh/h | 44 | 49 | 61 | 858 | 504 | 422 | | |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | | |
| Percent Heavy Veh, % | 0 | 0 | 4 | 4 | 5 | 5 | | |
| Cap, veh/h | 71 | 80 | 72 | 503 | 651 | 545 | | |
| Arrive On Green | 0.10 | 0.08 | 0.73 | 0.75 | 0.75 | 0.73 | | |
| Sat Flow, veh/h | 714 | 795 | 0 | 671 | 868 | 727 | | |
| Grp Volume(v), veh/h | 94 | 0 | 919 | 0 | 0 | 926 | | |
| Grp Sat Flow(s),veh/h/ln | 1525 | 0 | 672 | 0 | 0 | 1595 | | |
| Q Serve(g_s), s | 3.2 | 0.0 | 32.0 | 0.0 | 0.0 | 18.8 | | |
| Cycle Q Clear(g_c), s | 3.2 | 0.0 | 32.0 | 0.0 | 0.0 | 18.8 | | |
| Prop In Lane | 0.47 | 0.52 | 0.07 | | | 0.46 | | |
| Lane Grp Cap(c), veh/h | 153 | 0 | 0 | 0 | 0 | 1196 | | |
| V/C Ratio(X) | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.77 | | |
| Avail Cap(c_a), veh/h | 343 | 0 | 0 | 0 | 0 | 1196 | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | | |
| Uniform Delay (d), s/veh | 23.3 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | | |
| Incr Delay (d2), s/veh | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| %ile BackOfQ(95%),veh/ln | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 14.5 | | |
| LnGrp Delay(d),s/veh | 27.3 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | | |
| LnGrp LOS | C | | | | | A | | |
| Approach Vol, veh/h | 94 | | | 919 | 926 | | | |
| Approach Delay, s/veh | 27.3 | | | 0.0 | 9.1 | | | |
| Approach LOS | C | | | A | A | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 44.0 | | 9.3 | | 44.0 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 39.0 | | 11.0 | | 26.0 | | |
| Max Q Clear Time (g_c+I1), s | | 34.0 | | 5.7 | | 20.8 | | |
| Green Ext Time (p_c), s | | 3.8 | | 0.1 | | 3.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.7 |
| HCM 2010 LOS | A |

**Notes**

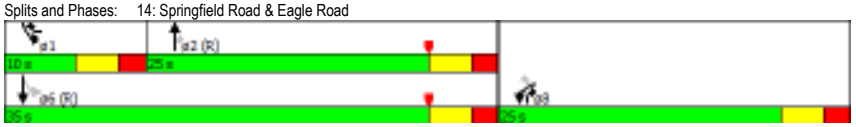
User approved volume balancing among the lanes for turning movement.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 576 | 250 | 634 | 275 | 39 | 348 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 513 | | 538 | | | 517 |
| Travel Time (s) | 10.0 | | 14.7 | | | 14.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Total Split (s) | 25.0 | 10.0 | 25.0 | 25.0 | 10.0 | 35.0 |
| Total Split (%) | 41.7% | 16.7% | 41.7% | 41.7% | 16.7% | 58.3% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 576 | 250 | 634 | 275 | 39 | 348 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1863 | 1756 | 1774 | 1723 | 1739 |
| Adj Flow Rate, veh/h | 626 | 199 | 689 | 256 | 42 | 378 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 5 | 5 | 4 |
| Cap, veh/h | 609 | 625 | 712 | 1139 | 198 | 899 |
| Arrive On Green | 0.35 | 0.35 | 0.41 | 0.41 | 0.04 | 0.52 |
| Sat Flow, veh/h | 1740 | 1583 | 1756 | 1508 | 1641 | 1739 |
| Grp Volume(v), veh/h | 626 | 199 | 689 | 256 | 42 | 378 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1583 | 1756 | 1508 | 1641 | 1739 |
| Q Serve(g_s), s | 21.0 | 5.2 | 23.0 | 3.0 | 0.8 | 8.1 |
| Cycle Q Clear(g_c), s | 21.0 | 5.2 | 23.0 | 3.0 | 0.8 | 8.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 609 | 625 | 712 | 1139 | 198 | 899 |
| V/C Ratio(X) | 1.03 | 0.32 | 0.97 | 0.22 | 0.21 | 0.42 |
| Avail Cap(c_a), veh/h | 609 | 625 | 712 | 1139 | 296 | 899 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.57 | 0.57 | 0.79 | 0.79 |
| Uniform Delay (d), s/veh | 19.5 | 12.6 | 17.5 | 2.2 | 13.9 | 9.0 |
| Incr Delay (d2), s/veh | 43.7 | 0.3 | 18.7 | 0.3 | 0.4 | 1.2 |
| Initial Q Delay(d3),s/veh | 22.7 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 35.3 | 4.2 | 19.8 | 5.2 | 0.7 | 7.0 |
| LnGrp Delay(d),s/veh | 85.9 | 12.9 | 36.7 | 2.4 | 14.3 | 10.1 |
| LnGrp LOS | F | B | D | A | B | B |
| Approach Vol, veh/h | 825 | | 945 | | | 420 |
| Approach Delay, s/veh | 68.3 | | 27.4 | | | 10.5 |
| Approach LOS | E | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 6.7 | 28.3 | | | | 35.0 | | 25.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 20.0 | | | | 30.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 25.5 | | | | 10.6 | | 23.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 5.9 | | 0.0 |

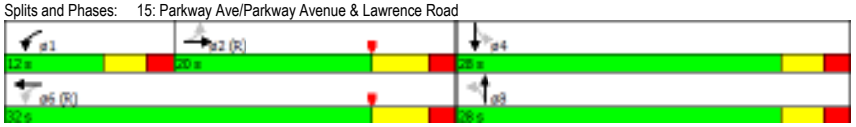
**Intersection Summary**

HCM 2010 Ctrl Delay 39.6
HCM 2010 LOS D

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 6 | 813 | 106 | 157 | 594 | 5 | 398 | 15 | 386 | 8 | 10 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 410 | | | 911 | | | 596 | | | 466 | |
| Travel Time (s) | | 6.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 20.0 | 20.0 | | 12.0 | 32.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 33.3% | 33.3% | | 20.0% | 53.3% | | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 26 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 6 | 813 | 106 | 157 | 594 | 5 | 398 | 15 | 386 | 8 | 10 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1717 | 1791 | 1791 | 1628 | 1791 | 1721 | 1735 | 1773 | 1827 | 1761 | 1827 |
| Adj Flow Rate, veh/h | 6 | 838 | 109 | 162 | 612 | 2 | 410 | 15 | 338 | 8 | 10 | 0 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 63 | 1276 | 165 | 95 | 709 | 3 | 555 | 58 | 563 | 196 | 213 | 0 |
| Arrive On Green | 0.43 | 0.45 | 0.43 | 0.43 | 0.45 | 0.43 | 0.40 | 0.40 | 0.38 | 0.38 | 0.40 | 0.00 |
| Sat Flow, veh/h | 5 | 2837 | 367 | 3 | 1575 | 6 | 1293 | 63 | 1421 | 290 | 553 | 0 |
| Grp Volume(v), veh/h | 508 | 0 | 445 | 293 | 0 | 483 | 410 | 0 | 353 | 18 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1711 | 0 | 1498 | 104 | 0 | 1481 | 1293 | 0 | 1484 | 843 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 14.0 | 28.2 | 0.0 | 16.0 | 10.4 | 0.0 | 11.4 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 14.1 | 0.0 | 14.0 | 28.2 | 0.0 | 16.0 | 21.4 | 0.0 | 11.4 | 11.5 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.25 | 0.55 | | 0.00 | 1.00 | | 0.96 | 0.44 | | 0.00 |
| Lane Grp Cap(c), veh/h | 802 | 0 | 674 | 0 | 0 | 666 | 555 | 0 | 595 | 395 | 0 | 0 |
| V/C Ratio(X) | 0.63 | 0.00 | 0.66 | 0.00 | 0.00 | 0.72 | 0.74 | 0.00 | 0.59 | 0.05 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 802 | 0 | 674 | 0 | 0 | 666 | 568 | 0 | 594 | 410 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.86 | 0.00 | 0.86 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 13.0 | 0.0 | 13.0 | 0.0 | 0.0 | 13.5 | 18.5 | 0.0 | 14.6 | 11.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 3.8 | 0.0 | 5.0 | 0.0 | 0.0 | 6.7 | 4.3 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.3 | 0.0 | 10.9 | 0.0 | 0.0 | 12.2 | 11.2 | 0.0 | 8.4 | 0.3 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 16.8 | 0.0 | 18.0 | 0.0 | 0.0 | 20.2 | 22.8 | 0.0 | 16.1 | 12.0 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | C | C | | B | B | | |
| Approach Vol, veh/h | | 953 | | | 776 | | | 763 | | | 18 | |
| Approach Delay, s/veh | | 17.4 | | | 12.6 | | | 19.7 | | | 12.0 | |
| Approach LOS | | B | | | B | | | B | | | B | |

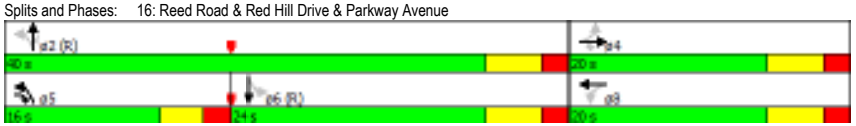
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.0 | | 28.0 | | 32.0 | | 28.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 14.0 | | 23.0 | | 26.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | | 16.1 | | 13.5 | | 30.2 | | 23.9 |
| Green Ext Time (p_c), s | | 0.0 | | 2.6 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 16.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 69 | 60 | 277 | 31 | 98 | 4 | 277 | 711 | 122 | 4 | 195 | 44 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 20.0 | 20.0 | 16.0 | 20.0 | 20.0 | | 16.0 | 40.0 | 40.0 | 24.0 | 24.0 | |
| Total Split (%) | 33.3% | 33.3% | 26.7% | 33.3% | 33.3% | | 26.7% | 66.7% | 66.7% | 40.0% | 40.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 35 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 69 | 60 | 277 | 31 | 98 | 4 | 277 | 711 | 122 | 4 | 195 | 44 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1618 | 1618 | 1747 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1806 | 1836 |
| Adj Flow Rate, veh/h | 71 | 62 | 245 | 32 | 101 | 4 | 286 | 733 | 114 | 4 | 201 | 42 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 348 | 324 | 527 | 119 | 274 | 10 | 756 | 1085 | 950 | 64 | 593 | 122 |
| Arrive On Green | 0.18 | 0.20 | 0.20 | 0.18 | 0.20 | 0.18 | 0.15 | 0.63 | 0.63 | 0.40 | 0.41 | 0.40 |
| Sat Flow, veh/h | 1109 | 1618 | 1485 | 224 | 1373 | 48 | 1500 | 1713 | 1499 | 6 | 1439 | 296 |
| Grp Volume(v), veh/h | 71 | 62 | 245 | 137 | 0 | 0 | 286 | 733 | 114 | 247 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1109 | 1618 | 1485 | 1645 | 0 | 0 | 1500 | 1713 | 1499 | 1741 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 1.9 | 7.7 | 0.0 | 0.0 | 0.0 | 5.5 | 16.4 | 1.8 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 1.9 | 7.7 | 4.0 | 0.0 | 0.0 | 5.5 | 16.4 | 1.8 | 5.8 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.23 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.17 |
| Lane Grp Cap(c), veh/h | 348 | 324 | 527 | 375 | 0 | 0 | 756 | 1085 | 950 | 749 | 0 | 0 |
| V/C Ratio(X) | 0.20 | 0.19 | 0.46 | 0.37 | 0.00 | 0.00 | 0.38 | 0.68 | 0.12 | 0.33 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 403 | 405 | 601 | 453 | 0 | 0 | 825 | 1085 | 950 | 751 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 21.0 | 20.0 | 15.0 | 20.9 | 0.0 | 0.0 | 5.8 | 7.1 | 4.4 | 12.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.3 | 0.6 | 0.6 | 0.0 | 0.0 | 0.3 | 3.4 | 0.3 | 1.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.9 | 1.6 | 5.9 | 3.8 | 0.0 | 0.0 | 4.2 | 13.4 | 1.4 | 5.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 21.3 | 20.3 | 15.7 | 21.5 | 0.0 | 0.0 | 6.1 | 10.4 | 4.6 | 13.3 | 0.0 | 0.0 |
| LnGrp LOS | C | C | B | C | | | A | B | A | B | | |
| Approach Vol, veh/h | | 378 | | | 137 | | | 1133 | | | 247 | |
| Approach Delay, s/veh | | 17.5 | | | 21.5 | | | 8.8 | | | 13.3 | |
| Approach LOS | | B | | | C | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.0 | | 17.0 | 13.3 | 29.8 | | 17.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 14.0 | 11.0 | 18.0 | | 14.0 |
| Max Q Clear Time (g_c+I1), s | | 18.9 | | 10.2 | 8.0 | 7.8 | | 6.0 |
| Green Ext Time (p_c), s | | 4.2 | | 0.8 | 0.3 | 3.5 | | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.0 |
| HCM 2010 LOS | B |

## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

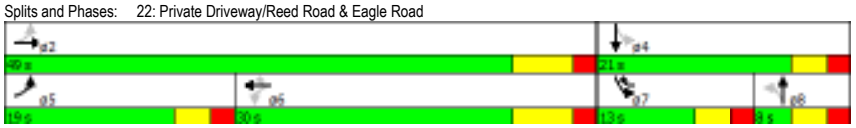
Timing Plan: AM PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 443 | 148 | 2 | 2 | 422 | 868 | 5 | 3 | 3 | 248 | 3 | 77 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 15 | 12 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 9.0 | 8.0 | 8.0 | | 9.0 | 12.0 | |
| Total Split (s) | 19.0 | 49.0 | | 30.0 | 30.0 | 13.0 | 8.0 | 8.0 | | 13.0 | 21.0 | |
| Total Split (%) | 27.1% | 70.0% | | 42.9% | 42.9% | 18.6% | 11.4% | 11.4% | | 18.6% | 30.0% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

### Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 61.5
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road






## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: AM PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 443 | 148 | 2 | 2 | 422 | 868 | 5 | 3 | 3 | 248 | 3 | 77 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1657 | 1752 | 1773 |
| Adj Flow Rate, veh/h | 471 | 157 | 2 | 2 | 449 | 829 | 5 | 3 | 3 | 264 | 3 | 73 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 7 | 66 | 66 |
| Cap, veh/h | 521 | 1089 | 14 | 53 | 585 | 691 | 101 | 15 | 15 | 428 | 14 | 341 |
| Arrive On Green | 0.22 | 0.62 | 0.60 | 0.33 | 0.35 | 0.35 | 0.04 | 0.05 | 0.04 | 0.13 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1782 | 1758 | 22 | 1 | 1693 | 1455 | 513 | 309 | 308 | 1578 | 59 | 1439 |
| Grp Volume(v), veh/h | 471 | 0 | 159 | 451 | 0 | 829 | 11 | 0 | 0 | 264 | 0 | 76 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 1130 | 0 | 0 | 1578 | 0 | 1498 |
| Q Serve(g_s), s | 11.5 | 0.0 | 2.6 | 0.0 | 0.0 | 24.0 | 0.7 | 0.0 | 0.0 | 9.0 | 0.0 | 2.8 |
| Cycle Q Clear(g_c), s | 11.5 | 0.0 | 2.6 | 16.7 | 0.0 | 24.0 | 0.7 | 0.0 | 0.0 | 9.0 | 0.0 | 2.8 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 1.00 | | 0.96 |
| Lane Grp Cap(c), veh/h | 521 | 0 | 1102 | 613 | 0 | 691 | 115 | 0 | 0 | 428 | 0 | 355 |
| V/C Ratio(X) | 0.90 | 0.00 | 0.14 | 0.74 | 0.00 | 1.20 | 0.10 | 0.00 | 0.00 | 0.62 | 0.00 | 0.21 |
| Avail Cap(c_a), veh/h | 537 | 0 | 1102 | 613 | 0 | 691 | 124 | 0 | 0 | 428 | 0 | 367 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.7 | 0.0 | 5.5 | 20.3 | 0.0 | 18.2 | 32.0 | 0.0 | 0.0 | 25.7 | 0.0 | 21.3 |
| Incr Delay (d2), s/veh | 18.4 | 0.0 | 0.1 | 5.2 | 0.0 | 103.1 | 0.4 | 0.0 | 0.0 | 2.7 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.4 | 0.0 | 2.4 | 13.8 | 0.0 | 62.3 | 0.4 | 0.0 | 0.0 | 2.0 | 0.0 | 2.1 |
| LnGrp Delay(d),s/veh | 42.1 | 0.0 | 5.6 | 25.6 | 0.0 | 134.3 | 32.4 | 0.0 | 0.0 | 28.4 | 0.0 | 21.6 |
| LnGrp LOS | D | | A | C | | F | C | | | C | | C |
| Approach Vol, veh/h | | 630 | | | 1280 | | | 11 | | | 340 | |
| Approach Delay, s/veh | | 32.9 | | | 96.0 | | | 32.4 | | | 26.8 | |
| Approach LOS | | C | | | F | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 49.0 | | 20.4 | 19.0 | 30.0 | 13.0 | 7.4 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 16.0 | 14.0 | 23.0 | 8.0 | 3.0 |
| Max Q Clear Time (g_c+I1), s | | 4.6 | | 5.3 | 14.0 | 26.5 | 11.5 | 2.7 |
| Green Ext Time (p_c), s | | 16.7 | | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |

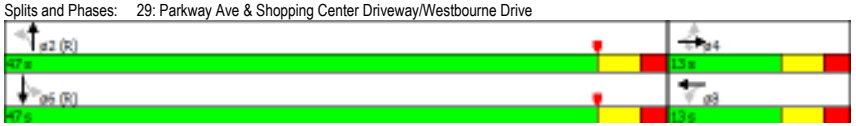
### Intersection Summary

| | |
|---|---|
| HCM 2010 Ctrl Delay | 67.7 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 57 | 16 | 33 | 18 | 22 | 29 | 49 | 649 | 2 | 18 | 194 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 192 | | | 246 | | | 388 | | | 596 | |
| Travel Time (s) | | 5.2 | | | 6.7 | | | 10.6 | | | 16.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 47.0 | 47.0 | | 47.0 | 47.0 | |
| Total Split (%) | 21.7% | 21.7% | 21.7% | 21.7% | 21.7% | | 78.3% | 78.3% | | 78.3% | 78.3% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 57 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 57 | 16 | 33 | 18 | 22 | 29 | 49 | 649 | 2 | 18 | 194 | 53 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1592 | 1690 | 1809 | 1852 | 1809 | 1836 | 1875 | 1836 | 1863 | 1895 | 1863 |
| Adj Flow Rate, veh/h | 61 | 17 | 35 | 19 | 23 | 31 | 52 | 690 | 2 | 19 | 206 | 56 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 13 | 13 | 13 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 223 | 42 | 157 | 97 | 59 | 60 | 120 | 1321 | 4 | 108 | 1015 | 263 |
| Arrive On Green | 0.09 | 0.11 | 0.11 | 0.09 | 0.11 | 0.09 | 0.74 | 0.76 | 0.74 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1054 | 378 | 1423 | 198 | 539 | 544 | 74 | 1746 | 5 | 58 | 1342 | 348 |
| Grp Volume(v), veh/h | 78 | 0 | 35 | 73 | 0 | 0 | 744 | 0 | 0 | 281 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1432 | 0 | 1423 | 1281 | 0 | 0 | 1824 | 0 | 0 | 1747 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.3 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 2.9 | 0.0 | 1.3 | 3.7 | 0.0 | 0.0 | 9.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.78 | | 1.00 | 0.26 | | 0.42 | 0.07 | | 0.00 | 0.07 | | 0.20 |
| Lane Grp Cap(c), veh/h | 241 | 0 | 157 | 195 | 0 | 0 | 1414 | 0 | 0 | 1357 | 0 | 0 |
| V/C Ratio(X) | 0.32 | 0.00 | 0.22 | 0.37 | 0.00 | 0.00 | 0.53 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 290 | 0 | 213 | 258 | 0 | 0 | 1414 | 0 | 0 | 1357 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.4 | 0.0 | 24.4 | 25.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.7 | 1.2 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.0 | 1.0 | 2.3 | 0.0 | 0.0 | 9.7 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 26.2 | 0.0 | 25.1 | 26.7 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | A | | | A | | |
| Approach Vol, veh/h | | 113 | | | 73 | | | 744 | | | 281 | |
| Approach Delay, s/veh | | 25.8 | | | 26.7 | | | 4.4 | | | 0.3 | |
| Approach LOS | | C | | | C | | | A | | | A | |

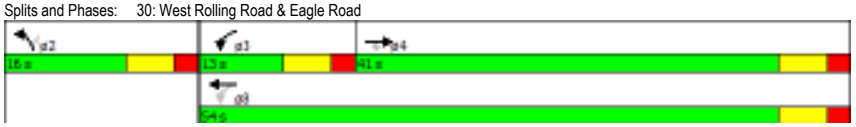
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.4 | | 10.6 | | 49.4 | | 10.6 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 8.0 | | 42.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | | 11.8 | | 4.9 | | 2.5 | | 5.7 |
| Green Ext Time (p_c), s | | 5.1 | | 0.2 | | 5.3 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.8 |
| HCM 2010 LOS | A |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 248 | 33 | 56 | 461 | 257 | 339 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1295 | | | 737 | 472 | |
| Travel Time (s) | 29.4 | | | 16.8 | 10.7 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 41.0 | 41.0 | 13.0 | 54.0 | 16.0 | 16.0 |
| Total Split (%) | 58.6% | 58.6% | 18.6% | 77.1% | 22.9% | 22.9% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 43.2 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 30: West Rolling Road & Eagle Road








| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 248 | 33 | 56 | 461 | 257 | 339 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1732 | 1836 | 1764 | 1700 | 1627 | 1675 |
| Adj Flow Rate, veh/h | 285 | 38 | 64 | 530 | 295 | 390 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 6 | 0 | 4 | 4 | 4 | 1 |
| Cap, veh/h | 649 | 585 | 119 | 637 | 507 | 466 |
| Arrive On Green | 0.37 | 0.37 | 0.35 | 0.37 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1732 | 1561 | 1 | 1698 | 1549 | 1424 |
| Grp Volume(v), veh/h | 285 | 38 | 594 | 0 | 295 | 390 |
| Grp Sat Flow(s),veh/h/ln | 1732 | 1561 | 1700 | 0 | 1549 | 1424 |
| Q Serve(g_s), s | 4.1 | 0.5 | 5.5 | 0.0 | 5.3 | 8.5 |
| Cycle Q Clear(g_c), s | 4.1 | 0.5 | 5.5 | 0.0 | 5.3 | 8.5 |
| Prop In Lane | | 1.00 | 0.11 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 649 | 585 | 0 | 0 | 507 | 466 |
| V/C Ratio(X) | 0.44 | 0.06 | 0.00 | 0.00 | 0.58 | 0.84 |
| Avail Cap(c_a), veh/h | 1856 | 1672 | 0 | 0 | 507 | 466 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 7.9 | 6.7 | 0.0 | 0.0 | 9.4 | 10.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.0 | 1.7 | 12.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.6 | 0.4 | 0.0 | 0.0 | 4.4 | 8.6 |
| LnGrp Delay(d),s/veh | 8.3 | 6.8 | 0.0 | 0.0 | 11.1 | 23.0 |
| LnGrp LOS | A | A | | | B | C |
| Approach Vol, veh/h | 323 | | | 594 | 685 | |
| Approach Delay, s/veh | 8.1 | | | 0.0 | 17.9 | |
| Approach LOS | A | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 16.0 | | 17.6 | | | | 17.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 10.0 | | 35.0 | | | | 48.0 |
| Max Q Clear Time (g_c+I1), s | | 10.5 | | 6.1 | | | | 7.5 |
| Green Ext Time (p_c), s | | 0.0 | | 4.0 | | | | 4.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.3 |
| HCM 2010 LOS | A |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 873 | 1396 | 0 | 372 | 897 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1676 | 3287 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1676 | 3287 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 517 | | 565 | | | 405 |
| Travel Time (s) | 14.1 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 919 | 1469 | 0 | 392 | 944 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 60.0 | 60.0 | | 60.0 | 120.0 |
| Total Split (%) | | 50.0% | 50.0% | | 50.0% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 49.0 | 56.0 | | 49.0 | 120.0 |
| Actuated g/C Ratio | | 0.41 | 0.47 | | 0.41 | 1.00 |
| v/c Ratio | | 0.87 | 0.92 | | 0.57 | 0.29 |
| Control Delay | | 31.9 | 34.2 | | 24.4 | 0.2 |
| Queue Delay | | 0.4 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 32.3 | 34.2 | | 24.4 | 0.2 |
| LOS | | C | C | | C | A |
| Approach Delay | | | 34.2 | | | 7.3 |
| Approach LOS | | | C | | | A |
| Queue Length 50th (ft) | | 286 | 432 | | 240 | 0 |
| Queue Length 95th (ft) | | m274 | #726 | | 249 | 0 |
| Internal Link Dist (ft) | 437 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Base Capacity (vph) | | 1116 | 1601 | | 726 | 3287 |
| Starvation Cap Reductn | | 29 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.85 | 0.92 | | 0.54 | 0.29 |

## Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 73 (61%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 24.1 — Intersection LOS: C
Intersection Capacity Utilization 85.5% — ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 33 | 2438 | 56 | 50 | 1312 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 33 | 2438 | 56 | 50 | 1312 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 37 | 2709 | 62 | 56 | 1458 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3580 | 1386 | 0 | 0 | 2771 | 0 |
| Stage 1 | 2740 | - | - | - | - | - |
| Stage 2 | 840 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | 3 | 120 | - | - | 149 | - |
| Stage 1 | 26 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 2 | 120 | - | - | 149 | - |
| Mov Cap-2 Maneuver | 2 | - | - | - | - | - |
| Stage 1 | 26 | - | - | - | - | - |
| Stage 2 | 252 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 47.7 | 0 | 1.6 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 120 | 149 | - |
| HCM Lane V/C Ratio | - | - | 0.306 | 0.373 | - |
| HCM Control Delay (s) | - | - | 47.7 | 42.9 | - |
| HCM Lane LOS | - | - | E | E | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 1.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 9 | 105 | 1018 | 30 | 191 | 303 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 9 | 105 | 1018 | 30 | 191 | 303 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 9 | 107 | 1039 | 31 | 195 | 309 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1738 | 1039 | 0 | 0 | 1039 | 0 |
| Stage 1 | 1039 | - | - | - | - | - |
| Stage 2 | 699 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 115 | 279 | - | - | 554 | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 579 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 66 | 279 | - | - | 554 | - |
| Mov Cap-2 Maneuver | 196 | - | - | - | - | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 333 | - | - | - | - | - |

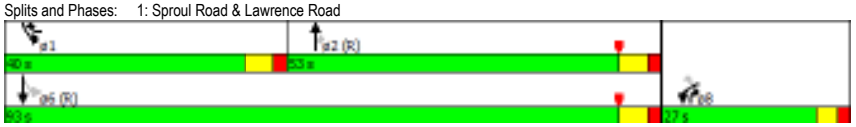
| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 25.6 | 0 | 5.8 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 196 | 279 | 554 | - |
| HCM Lane V/C Ratio | - | - | 0.047 | 0.384 | 0.352 | - |
| HCM Control Delay (s) | - | - | 24.3 | 25.7 | 15 | 0 |
| HCM Lane LOS | - | - | C | D | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 1.7 | 1.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 553 | 587 | 1291 | 474 | 540 | 1653 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 328 | | 389 | | | 1061 |
| Travel Time (s) | 5.0 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 27.0 | 40.0 | 53.0 | 27.0 | 40.0 | 93.0 |
| Total Split (%) | 22.5% | 33.3% | 44.2% | 22.5% | 33.3% | 77.5% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 553 | 587 | 1291 | 474 | 540 | 1653 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1816 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 576 | 549 | 1345 | 410 | 562 | 1722 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 618 | 746 | 1348 | 927 | 585 | 2634 |
| Arrive On Green | 0.19 | 0.19 | 0.80 | 0.80 | 0.29 | 0.73 |
| Sat Flow, veh/h | 3227 | 1544 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 576 | 549 | 1345 | 410 | 562 | 1722 |
| Grp Sat Flow(s),veh/h/ln | 1613 | 1544 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 21.1 | 23.0 | 47.5 | 9.0 | 32.7 | 29.5 |
| Cycle Q Clear(g_c), s | 21.1 | 23.0 | 47.5 | 9.0 | 32.7 | 29.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 618 | 746 | 1348 | 927 | 585 | 2634 |
| V/C Ratio(X) | 0.93 | 0.74 | 1.00 | 0.44 | 0.96 | 0.65 |
| Avail Cap(c_a), veh/h | 618 | 746 | 1348 | 927 | 586 | 2634 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.76 | 0.76 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.9 | 24.9 | 12.0 | 3.9 | 37.0 | 8.2 |
| Incr Delay (d2), s/veh | 21.0 | 3.8 | 20.8 | 1.2 | 27.4 | 1.3 |
| Initial Q Delay(d3),s/veh | 2.5 | 0.0 | 7.1 | 0.0 | 13.2 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 17.2 | 21.7 | 32.9 | 9.2 | 33.8 | 21.1 |
| LnGrp Delay(d),s/veh | 71.4 | 28.7 | 40.0 | 5.1 | 77.6 | 9.5 |
| LnGrp LOS | E | C | D | A | E | A |
| Approach Vol, veh/h | 1125 | | 1755 | | | 2284 |
| Approach Delay, s/veh | 50.5 | | 31.8 | | | 26.2 |
| Approach LOS | D | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 40.0 | 53.0 | | | | 93.0 | | 27.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 34.0 | 47.0 | | | | 87.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | 35.2 | 50.0 | | | | 32.0 | | 25.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 34.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.4 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 45 | 253 | 13 | 215 | 41 | 1503 | 129 | 191 | 2144 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 633 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.8 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 8.0 | 8.0 | 41.0 | | 8.0 | 41.0 | |
| Total Split (%) | 18.3% | 18.3% | | 18.3% | 18.3% | 13.3% | 13.3% | 68.3% | | 13.3% | 68.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 45 | 253 | 13 | 215 | 41 | 1503 | 129 | 191 | 2144 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1764 | 1800 | 1764 | 1764 | 1747 | 1764 | 1748 | 1835 | 1800 | 1854 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 45 | 258 | 13 | 201 | 42 | 1534 | 0 | 195 | 2188 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 76 | 18 | 18 | 246 | 7 | 241 | 248 | 2800 | 0 | 430 | 2237 | 17 |
| Arrive On Green | 0.08 | 0.10 | 0.08 | 0.08 | 0.10 | 0.10 | 0.08 | 1.00 | 0.00 | 0.13 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 180 | 184 | 1292 | 65 | 1422 | 1680 | 4859 | 0 | 1714 | 3578 | 31 |
| Grp Volume(v), veh/h | 89 | 0 | 0 | 271 | 0 | 201 | 42 | 1534 | 0 | 195 | 1075 | 1132 |
| Grp Sat Flow(s),veh/h/ln | 364 | 0 | 0 | 1357 | 0 | 1422 | 1680 | 1556 | 0 | 1714 | 1761 | 1848 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.5 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 | 6.0 | 0.5 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Prop In Lane | 0.26 | | 0.51 | 0.95 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 106 | 0 | 0 | 230 | 0 | 241 | 248 | 2800 | 0 | 430 | 1100 | 1155 |
| V/C Ratio(X) | 0.84 | 0.00 | 0.00 | 1.18 | 0.00 | 0.83 | 0.17 | 0.55 | 0.00 | 0.45 | 0.98 | 0.98 |
| Avail Cap(c_a), veh/h | 106 | 0 | 0 | 230 | 0 | 241 | 331 | 2800 | 0 | 430 | 1100 | 1154 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.61 | 0.61 | 0.61 |
| Uniform Delay (d), s/veh | 27.9 | 0.0 | 0.0 | 28.3 | 0.0 | 24.3 | 8.1 | 0.0 | 0.0 | 3.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 42.4 | 0.0 | 0.0 | 115.6 | 0.0 | 21.4 | 0.3 | 0.8 | 0.0 | 0.5 | 16.6 | 16.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.1 | 1.1 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 0.0 | 0.0 | 20.2 | 0.0 | 8.1 | 0.6 | 0.4 | 0.0 | 2.5 | 8.3 | 8.6 |
| LnGrp Delay(d),s/veh | 70.3 | 0.0 | 0.0 | 143.9 | 0.0 | 45.7 | 8.5 | 0.8 | 0.0 | 4.6 | 17.6 | 17.6 |
| LnGrp LOS | E | | | F | | D | A | A | | A | B | B |
| Approach Vol, veh/h | | 89 | | | 472 | | | 1576 | | | 2402 | |
| Approach Delay, s/veh | | 70.3 | | | 102.1 | | | 1.0 | | | 16.6 | |
| Approach LOS | | E | | | F | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.0 | 41.0 | | 11.0 | 6.5 | 42.5 | | 11.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 35.0 | | 5.0 | 3.0 | 35.0 | | 5.0 |
| Max Q Clear Time (g_c+I1), s | 5.2 | 2.5 | | 7.0 | 3.0 | 2.5 | | 8.5 |
| Green Ext Time (p_c), s | 0.0 | 26.3 | | 0.0 | 0.0 | 26.3 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 206 | 166 | 55 | 153 | 142 | 12 | 73 | 1119 | 61 | 4 | 1441 | 204 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | | 37.0 | 37.0 | | 37.0 | 37.0 | |
| Total Split (%) | 38.3% | 38.3% | 38.3% | 38.3% | 38.3% | | 61.7% | 61.7% | | 61.7% | 61.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | 0.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 6.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 206 | 166 | 55 | 153 | 142 | 12 | 73 | 1119 | 61 | 4 | 1441 | 204 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1882 | 1818 | 1782 | 1756 | 1782 | 1705 | 1754 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 215 | 173 | 45 | 159 | 148 | 9 | 76 | 1166 | 52 | 4 | 1501 | 183 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 313 | 177 | 438 | 266 | 208 | 11 | 137 | 1733 | 77 | 231 | 1650 | 196 |
| Arrive On Green | 0.28 | 0.30 | 0.28 | 0.28 | 0.30 | 0.28 | 0.52 | 0.53 | 0.52 | 0.52 | 0.53 | 0.52 |
| Sat Flow, veh/h | 732 | 589 | 1545 | 586 | 693 | 37 | 267 | 3249 | 145 | 448 | 3089 | 373 |
| Grp Volume(v), veh/h | 388 | 0 | 45 | 316 | 0 | 0 | 76 | 598 | 620 | 4 | 828 | 856 |
| Grp Sat Flow(s),veh/h/ln | 1321 | 0 | 1545 | 1316 | 0 | 0 | 267 | 1666 | 1728 | 448 | 1718 | 1743 |
| Q Serve(g_s), s | 3.6 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 3.9 | 15.7 | 15.7 | 0.4 | 26.0 | 27.1 |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 1.3 | 13.4 | 0.0 | 0.0 | 31.0 | 15.7 | 15.7 | 16.6 | 26.0 | 27.1 |
| Prop In Lane | 0.55 | | 1.00 | 0.50 | | 0.03 | 1.00 | | 0.08 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 468 | 0 | 438 | 463 | 0 | 0 | 137 | 889 | 922 | 231 | 917 | 930 |
| V/C Ratio(X) | 0.83 | 0.00 | 0.10 | 0.68 | 0.00 | 0.00 | 0.55 | 0.67 | 0.67 | 0.02 | 0.90 | 0.92 |
| Avail Cap(c_a), veh/h | 468 | 0 | 438 | 463 | 0 | 0 | 138 | 889 | 922 | 231 | 917 | 930 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.4 | 0.0 | 15.9 | 19.4 | 0.0 | 0.0 | 29.6 | 10.2 | 10.2 | 17.1 | 12.6 | 13.0 |
| Incr Delay (d2), s/veh | 11.9 | 0.0 | 0.1 | 4.1 | 0.0 | 0.0 | 15.2 | 4.0 | 3.9 | 0.1 | 13.9 | 15.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.7 | 0.0 | 1.0 | 9.4 | 0.0 | 0.0 | 3.3 | 12.8 | 13.2 | 0.1 | 22.3 | 23.7 |
| LnGrp Delay(d),s/veh | 33.3 | 0.0 | 16.0 | 23.5 | 0.0 | 0.0 | 44.7 | 14.2 | 14.1 | 17.3 | 26.5 | 28.6 |
| LnGrp LOS | C | | B | C | | | D | B | B | B | C | C |
| Approach Vol, veh/h | | 433 | | | 316 | | | 1294 | | | 1688 | |
| Approach Delay, s/veh | | 31.5 | | | 23.5 | | | 16.0 | | | 27.6 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 37.0 | | 23.0 | | 37.0 | | 23.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 31.0 | | 17.0 | | 31.0 | | 17.0 |
| Max Q Clear Time (g_c+I1), s | | 33.0 | | 19.0 | | 29.1 | | 15.4 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 1.8 | | 0.6 |

**Intersection Summary**

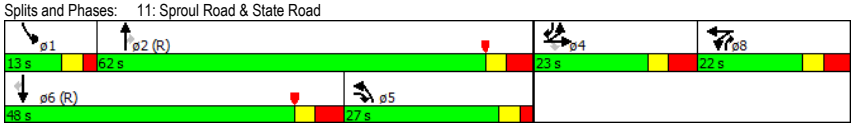
| | |
|---|---|
| HCM 2010 Ctrl Delay | 23.7 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 426 | 86 | 733 | 313 | 156 | 72 | 317 | 763 | 318 | 94 | 1113 | 534 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 40% | | | 13% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 23.0 | 23.0 | 27.0 | 22.0 | 22.0 | | 27.0 | 62.0 | 22.0 | 13.0 | 48.0 | 23.0 |
| Total Split (%) | 19.2% | 19.2% | 22.5% | 18.3% | 18.3% | | 22.5% | 51.7% | 18.3% | 10.8% | 40.0% | 19.2% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 426 | 86 | 733 | 313 | 156 | 72 | 317 | 763 | 318 | 94 | 1113 | 534 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1820 | 1844 | 1872 | 1856 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 503 | 0 | 0 | 242 | 274 | 0 | 327 | 787 | 0 | 97 | 1147 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 498 | 0 | 861 | 238 | 247 | 0 | 692 | 2413 | 1274 | 129 | 1185 | 745 |
| Arrive On Green | 0.14 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.42 | 0.71 | 0.00 | 0.08 | 0.35 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 503 | 0 | 0 | 242 | 274 | 0 | 327 | 787 | 0 | 97 | 1147 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 16.0 | 16.0 | 0.0 | 16.6 | 10.4 | 0.0 | 6.7 | 40.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 16.0 | 16.0 | 0.0 | 16.6 | 10.4 | 0.0 | 6.7 | 40.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 498 | 0 | 861 | 238 | 247 | 0 | 692 | 2413 | 1274 | 129 | 1185 | 745 |
| V/C Ratio(X) | 1.01 | 0.00 | 0.00 | 1.02 | 1.11 | 0.00 | 0.47 | 0.33 | 0.00 | 0.75 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 498 | 0 | 882 | 238 | 247 | 0 | 715 | 2413 | 1294 | 129 | 1185 | 745 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 51.5 | 0.0 | 0.0 | 52.0 | 52.0 | 0.0 | 26.1 | 6.5 | 0.0 | 54.4 | 38.8 | 0.0 |
| Incr Delay (d2), s/veh | 43.1 | 0.0 | 0.0 | 63.1 | 89.1 | 0.0 | 0.5 | 0.4 | 0.0 | 22.1 | 19.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 7.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.7 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 20.7 | 0.0 | 0.0 | 21.6 | 25.7 | 0.0 | 12.7 | 8.8 | 0.0 | 7.1 | 31.2 | 0.0 |
| LnGrp Delay(d),s/veh | 101.7 | 0.0 | 0.0 | 115.2 | 141.1 | 0.0 | 26.6 | 6.9 | 0.0 | 76.5 | 64.0 | 0.0 |
| LnGrp LOS | F | | | F | F | | C | A | | E | E | |
| Approach Vol, veh/h | | 503 | | | 516 | | | 1114 | | | 1244 | |
| Approach Delay, s/veh | | 101.7 | | | 129.0 | | | 12.7 | | | 64.9 | |
| Approach LOS | | F | | | F | | | B | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 91.7 | | 23.0 | 56.7 | 48.0 | | 22.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 55.0 | | 16.0 | 22.0 | * 41 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 12.9 | | 19.5 | 19.1 | 42.5 | | 18.5 |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | 1.1 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 63.0
HCM 2010 LOS E

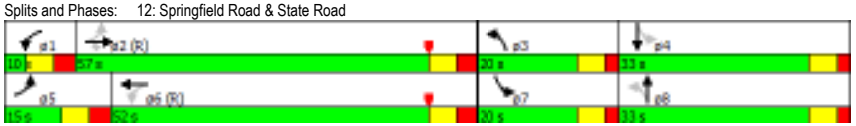
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 181 | 1423 | 529 | 37 | 1221 | 119 | 359 | 444 | 42 | 275 | 485 | 61 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 15.0 | 57.0 | 57.0 | 10.0 | 52.0 | | 20.0 | 33.0 | | 20.0 | 33.0 | |
| Total Split (%) | 12.5% | 47.5% | 47.5% | 8.3% | 43.3% | | 16.7% | 27.5% | | 16.7% | 27.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 181 | 1423 | 529 | 37 | 1221 | 119 | 359 | 444 | 42 | 275 | 485 | 61 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1807 | 1827 |
| Adj Flow Rate, veh/h | 183 | 1437 | 0 | 37 | 1233 | 0 | 363 | 448 | 0 | 278 | 490 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 191 | 1484 | 664 | 115 | 1259 | 0 | 273 | 418 | 0 | 275 | 422 | 0 |
| Arrive On Green | 0.08 | 0.43 | 0.00 | 0.03 | 0.38 | 0.00 | 0.13 | 0.23 | 0.00 | 0.08 | 0.16 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Grp Volume(v), veh/h | 183 | 1437 | 0 | 37 | 1233 | 0 | 363 | 448 | 0 | 278 | 490 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Q Serve(g_s), s | 7.9 | 48.3 | 0.0 | 1.6 | 44.5 | 0.0 | 15.0 | 28.0 | 0.0 | 15.0 | 28.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.9 | 48.3 | 0.0 | 1.6 | 44.5 | 0.0 | 15.0 | 28.0 | 0.0 | 15.0 | 28.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 191 | 1484 | 664 | 115 | 1259 | 0 | 273 | 418 | 0 | 275 | 422 | 0 |
| V/C Ratio(X) | 0.96 | 0.97 | 0.00 | 0.32 | 0.98 | 0.00 | 1.33 | 1.07 | 0.00 | 1.01 | 1.16 | 0.00 |
| Avail Cap(c_a), veh/h | 197 | 1484 | 664 | 122 | 1259 | 0 | 273 | 418 | 0 | 275 | 422 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.24 | 0.24 | 0.00 |
| Uniform Delay (d), s/veh | 34.2 | 33.9 | 0.0 | 29.7 | 36.6 | 0.0 | 33.9 | 46.0 | 0.0 | 36.6 | 50.6 | 0.0 |
| Incr Delay (d2), s/veh | 51.3 | 16.9 | 0.0 | 1.6 | 20.9 | 0.0 | 170.9 | 64.3 | 0.0 | 28.7 | 79.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 56.2 | 0.9 | 0.0 | 0.0 | 0.2 | 0.0 | 19.5 | 15.9 | 0.0 | 0.0 | 14.6 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 17.0 | 35.7 | 0.0 | 1.4 | 31.8 | 0.0 | 41.6 | 40.3 | 0.0 | 20.4 | 43.9 | 0.0 |
| LnGrp Delay(d),s/veh | 141.7 | 51.7 | 0.0 | 31.3 | 57.7 | 0.0 | 224.4 | 126.2 | 0.0 | 65.3 | 144.8 | 0.0 |
| LnGrp LOS | F | D | | C | E | | F | F | | F | F | |
| Approach Vol, veh/h | | 1620 | | | 1270 | | | 811 | | | 768 | |
| Approach Delay, s/veh | | 61.9 | | | 56.9 | | | 170.1 | | | 116.0 | |
| Approach LOS | | E | | | E | | | F | | | F | |

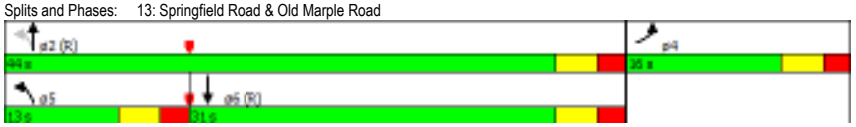
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.9 | 57.1 | 20.0 | 33.0 | 15.0 | 52.0 | 20.0 | 33.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 50.0 | 14.0 | 27.0 | 8.0 | 45.0 | 14.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 4.1 | 50.8 | 17.5 | 30.5 | 10.4 | 47.0 | 17.5 | 30.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 89.4 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 121 | 103 | 26 | 695 | 788 | 276 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 552 | |
| Travel Time (s) | 10.6 | | | 23.1 | 15.1 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | | 4.0 | 4.0 | 4.0 | |
| Minimum Split (s) | 13.0 | | 9.0 | 13.0 | 13.0 | |
| Total Split (s) | 16.0 | | 13.0 | 44.0 | 31.0 | |
| Total Split (%) | 26.7% | | 21.7% | 73.3% | 51.7% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 13: Springfield Road & Old Marple Road








| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 121 | 103 | 26 | 695 | 788 | 276 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1790 | 1800 | 1800 | 1799 | 1791 | 1809 |
| Adj Flow Rate, veh/h | 123 | 105 | 27 | 709 | 804 | 282 |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 164 | 140 | 62 | 638 | 859 | 301 |
| Arrive On Green | 0.19 | 0.17 | 1.00 | 1.00 | 0.68 | 0.66 |
| Sat Flow, veh/h | 868 | 741 | 0 | 942 | 1268 | 445 |
| Grp Volume(v), veh/h | 229 | 0 | 736 | 0 | 0 | 1086 |
| Grp Sat Flow(s),veh/h/ln | 1616 | 0 | 942 | 0 | 0 | 1713 |
| Q Serve(g_s), s | 8.1 | 0.0 | 17.0 | 0.0 | 0.0 | 33.6 |
| Cycle Q Clear(g_c), s | 8.1 | 0.0 | 17.0 | 0.0 | 0.0 | 33.6 |
| Prop In Lane | 0.54 | 0.46 | 0.04 | | | 0.26 |
| Lane Grp Cap(c), veh/h | 306 | 0 | 0 | 0 | 0 | 1160 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.94 |
| Avail Cap(c_a), veh/h | 323 | 0 | 0 | 0 | 0 | 1160 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.62 |
| Uniform Delay (d), s/veh | 23.2 | 0.0 | 0.0 | 0.0 | 0.0 | 8.7 |
| Incr Delay (d2), s/veh | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 10.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.7 | 0.0 | 0.0 | 0.0 | 0.0 | 24.3 |
| LnGrp Delay(d),s/veh | 32.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.0 |
| LnGrp LOS | C | | | | | B |
| Approach Vol, veh/h | 229 | | | 736 | 1086 | |
| Approach Delay, s/veh | 32.0 | | | 0.0 | 19.0 | |
| Approach LOS | C | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 44.6 | | 15.4 | | 44.6 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 39.0 | | 11.0 | | 26.0 | | |
| Max Q Clear Time (g_c+I1), s | | 19.0 | | 10.6 | | 35.6 | | |
| Green Ext Time (p_c), s | | 10.5 | | 0.0 | | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.7 |
| HCM 2010 LOS | B |

**Notes**

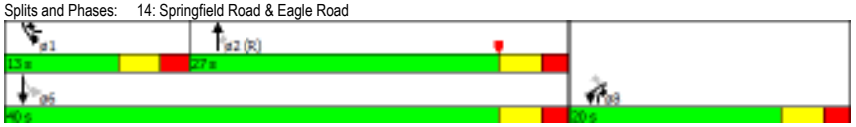
User approved volume balancing among the lanes for turning movement.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 380 | 87 | 466 | 369 | 213 | 609 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 503 | | 552 | | | 504 |
| Travel Time (s) | 9.8 | | 15.1 | | | 13.7 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 10.0 | 9.0 | 8.0 | 10.0 | 9.0 |
| Total Split (s) | 20.0 | 13.0 | 27.0 | 20.0 | 13.0 | 40.0 |
| Total Split (%) | 33.3% | 21.7% | 45.0% | 33.3% | 21.7% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 41 (68%), Referenced to phase 2:NBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 380 | 87 | 466 | 369 | 213 | 609 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1881 | 1881 | 1756 | 1863 | 1791 | 1791 |
| Adj Flow Rate, veh/h | 400 | 74 | 491 | 341 | 224 | 641 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 0 | 1 | 1 |
| Cap, veh/h | 478 | 621 | 723 | 1074 | 517 | 1075 |
| Arrive On Green | 0.27 | 0.27 | 0.82 | 0.82 | 0.12 | 0.60 |
| Sat Flow, veh/h | 1792 | 1599 | 1756 | 1583 | 1706 | 1791 |
| Grp Volume(v), veh/h | 400 | 74 | 491 | 341 | 224 | 641 |
| Grp Sat Flow(s),veh/h/ln | 1792 | 1599 | 1756 | 1583 | 1706 | 1791 |
| Q Serve(g_s), s | 12.6 | 1.8 | 6.7 | 2.2 | 3.9 | 13.4 |
| Cycle Q Clear(g_c), s | 12.6 | 1.8 | 6.7 | 2.2 | 3.9 | 13.4 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 478 | 621 | 723 | 1074 | 517 | 1075 |
| V/C Ratio(X) | 0.84 | 0.12 | 0.68 | 0.32 | 0.43 | 0.60 |
| Avail Cap(c_a), veh/h | 478 | 621 | 723 | 1074 | 565 | 1075 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.62 | 0.62 | 0.09 | 0.09 |
| Uniform Delay (d), s/veh | 20.8 | 11.8 | 3.7 | 1.0 | 7.3 | 7.5 |
| Incr Delay (d2), s/veh | 12.4 | 0.1 | 3.2 | 0.5 | 0.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.6 | 1.4 | 5.7 | 3.0 | 2.4 | 7.7 |
| LnGrp Delay(d),s/veh | 33.4 | 11.8 | 6.9 | 1.5 | 7.4 | 7.7 |
| LnGrp LOS | C | B | A | A | A | A |
| Approach Vol, veh/h | 474 | | 832 | | | 865 |
| Approach Delay, s/veh | 30.0 | | 4.7 | | | 7.6 |
| Approach LOS | C | | A | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.3 | 28.7 | | | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 22.0 | | | | 35.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 6.4 | 9.2 | | | | 15.9 | | 15.1 |
| Green Ext Time (p_c), s | 0.1 | 5.3 | | | | 6.3 | | 0.0 |

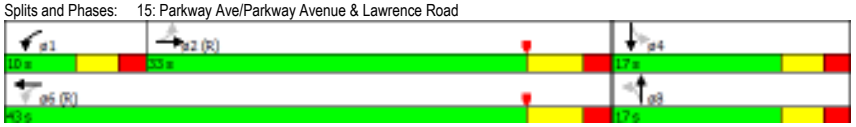
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 11.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 676 | 230 | 408 | 852 | 5 | 263 | 23 | 267 | 6 | 39 | 32 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 413 | | | 911 | | | 578 | | | 466 | |
| Travel Time (s) | | 6.3 | | | 13.8 | | | 15.8 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 33.0 | 33.0 | | 10.0 | 43.0 | | 17.0 | 17.0 | | 17.0 | 17.0 | |
| Total Split (%) | 55.0% | 55.0% | | 16.7% | 71.7% | | 28.3% | 28.3% | | 28.3% | 28.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 2 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 676 | 230 | 408 | 852 | 5 | 263 | 23 | 267 | 6 | 39 | 32 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1810 | 1827 |
| Adj Flow Rate, veh/h | 30 | 697 | 228 | 421 | 878 | 5 | 271 | 24 | 180 | 6 | 40 | 24 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 80 | 1322 | 484 | 123 | 1009 | 6 | 403 | 38 | 288 | 76 | 229 | 125 |
| Arrive On Green | 0.62 | 0.63 | 0.62 | 0.62 | 0.63 | 0.62 | 0.22 | 0.22 | 0.20 | 0.20 | 0.22 | 0.20 |
| Sat Flow, veh/h | 25 | 2087 | 765 | 4 | 1593 | 9 | 1256 | 177 | 1329 | 49 | 1055 | 576 |
| Grp Volume(v), veh/h | 509 | 0 | 446 | 421 | 0 | 883 | 271 | 0 | 204 | 70 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1383 | 0 | 1495 | 4 | 0 | 1602 | 1256 | 0 | 1506 | 1680 | 0 | 0 |
| Q Serve(g_s), s | 3.6 | 0.0 | 9.5 | 60.0 | 0.0 | 27.0 | 10.8 | 0.0 | 7.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 30.6 | 0.0 | 9.5 | 60.0 | 0.0 | 27.0 | 12.3 | 0.0 | 7.4 | 2.0 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.51 | 1.00 | | 0.01 | 1.00 | | 0.88 | 0.09 | | 0.34 |
| Lane Grp Cap(c), veh/h | 916 | 0 | 947 | 0 | 0 | 1015 | 403 | 0 | 326 | 401 | 0 | 0 |
| V/C Ratio(X) | 0.56 | 0.00 | 0.47 | 0.00 | 0.00 | 0.87 | 0.67 | 0.00 | 0.63 | 0.17 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 916 | 0 | 947 | 0 | 0 | 1015 | 403 | 0 | 326 | 401 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.89 | 0.00 | 0.89 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.4 | 0.0 | 5.9 | 0.0 | 0.0 | 9.0 | 23.0 | 0.0 | 21.7 | 19.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.4 | 0.0 | 1.7 | 0.0 | 0.0 | 10.1 | 3.9 | 0.0 | 3.3 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.7 | 0.0 | 7.7 | 0.0 | 0.0 | 20.6 | 8.2 | 0.0 | 6.1 | 1.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 8.8 | 0.0 | 7.6 | 0.0 | 0.0 | 19.1 | 26.9 | 0.0 | 25.0 | 19.6 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | B | | |
| Approach Vol, veh/h | | 955 | | | 1304 | | | 475 | | | 70 | |
| Approach Delay, s/veh | | 8.2 | | | 13.0 | | | 26.1 | | | 19.6 | |
| Approach LOS | | A | | | B | | | C | | | B | |

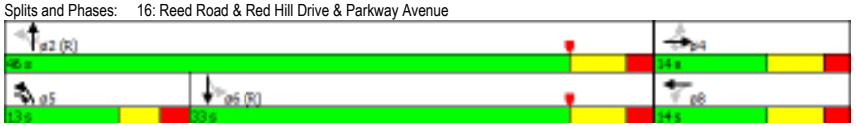
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.0 | | 17.0 | | 43.0 | | 17.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 12.0 | | 37.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | | 32.6 | | 4.0 | | 62.0 | | 14.8 |
| Green Ext Time (p_c), s | | 0.0 | | 1.5 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.7 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 61 | 142 | 355 | 37 | 62 | 10 | 371 | 427 | 64 | 5 | 618 | 68 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 14.0 | 14.0 | 13.0 | 14.0 | 14.0 | | 13.0 | 46.0 | 46.0 | 33.0 | 33.0 | |
| Total Split (%) | 23.3% | 23.3% | 21.7% | 23.3% | 23.3% | | 21.7% | 76.7% | 76.7% | 55.0% | 55.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 19 (32%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 61 | 142 | 355 | 37 | 62 | 10 | 371 | 427 | 64 | 5 | 618 | 68 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1747 | 1799 | 1836 | 1786 | 1836 | 1713 | 1764 | 1680 | 1836 | 1903 | 1836 |
| Adj Flow Rate, veh/h | 64 | 149 | 312 | 39 | 65 | 10 | 391 | 449 | 61 | 5 | 651 | 68 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 0 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 255 | 262 | 457 | 101 | 99 | 11 | 553 | 1205 | 976 | 62 | 792 | 79 |
| Arrive On Green | 0.04 | 0.05 | 0.05 | 0.13 | 0.15 | 0.13 | 0.15 | 0.68 | 0.68 | 0.45 | 0.47 | 0.45 |
| Sat Flow, veh/h | 1243 | 1747 | 1519 | 140 | 664 | 77 | 1631 | 1764 | 1428 | 3 | 1690 | 176 |
| Grp Volume(v), veh/h | 64 | 149 | 312 | 114 | 0 | 0 | 391 | 449 | 61 | 724 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1243 | 1747 | 1519 | 881 | 0 | 0 | 1631 | 1764 | 1428 | 1869 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 5.0 | 9.0 | 2.3 | 0.0 | 0.0 | 6.5 | 6.5 | 0.8 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.7 | 5.0 | 9.0 | 7.8 | 0.0 | 0.0 | 6.5 | 6.5 | 0.8 | 20.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.34 | | 0.09 | 1.00 | | 1.00 | 0.01 | | 0.09 |
| Lane Grp Cap(c), veh/h | 255 | 262 | 457 | 196 | 0 | 0 | 553 | 1205 | 976 | 902 | 0 | 0 |
| V/C Ratio(X) | 0.25 | 0.57 | 0.68 | 0.58 | 0.00 | 0.00 | 0.71 | 0.37 | 0.06 | 0.80 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 255 | 262 | 457 | 198 | 0 | 0 | 557 | 1205 | 976 | 901 | 0 | 0 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 26.6 | 26.6 | 20.6 | 24.9 | 0.0 | 0.0 | 6.4 | 4.0 | 3.1 | 14.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 2.9 | 4.1 | 4.2 | 0.0 | 0.0 | 4.1 | 0.9 | 0.1 | 7.5 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.9 | 4.7 | 8.9 | 3.8 | 0.0 | 0.0 | 6.4 | 6.1 | 0.6 | 18.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 27.2 | 29.5 | 25.2 | 29.0 | 0.0 | 0.0 | 10.5 | 4.9 | 3.3 | 21.9 | 0.0 | 0.0 |
| LnGrp LOS | C | C | C | C | | | B | A | A | C | | |
| Approach Vol, veh/h | | 525 | | | 114 | | | 901 | | | 724 | |
| Approach Delay, s/veh | | 26.7 | | | 29.0 | | | 7.2 | | | 21.9 | |
| Approach LOS | | C | | | C | | | A | | | C | |

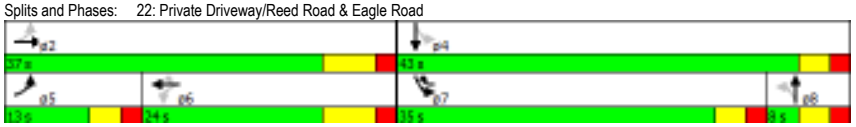
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.0 | | 14.0 | 13.0 | 33.0 | | 14.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 40.0 | | 8.0 | 8.0 | 27.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | | 9.0 | | 11.5 | 9.0 | 22.7 | | 9.8 |
| Green Ext Time (p_c), s | | 5.9 | | 0.0 | 0.0 | 2.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 170 | 396 | 0 | 1 | 298 | 470 | 0 | 0 | 0 | 699 | 1 | 459 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 15 | 12 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | pm+ov | | | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 8.0 | 8.0 | 8.0 | | 8.0 | 12.0 | |
| Total Split (s) | 13.0 | 37.0 | | 24.0 | 24.0 | 35.0 | 8.0 | 8.0 | | 35.0 | 43.0 | |
| Total Split (%) | 16.3% | 46.3% | | 30.0% | 30.0% | 43.8% | 10.0% | 10.0% | | 43.8% | 53.8% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 72.5 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 170 | 396 | 0 | 1 | 298 | 470 | 0 | 0 | 0 | 699 | 1 | 459 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1755 | 1844 | 1773 |
| Adj Flow Rate, veh/h | 177 | 412 | 0 | 1 | 310 | 405 | 0 | 0 | 0 | 728 | 1 | 443 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 361 | 780 | 0 | 52 | 417 | 1005 | 0 | 6 | 0 | 842 | 27 | 684 |
| Arrive On Green | 0.11 | 0.41 | 0.00 | 0.23 | 0.24 | 0.24 | 0.00 | 0.00 | 0.00 | 0.44 | 0.44 | 0.44 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1466 | 0 | -76003 | 0 | 1672 | 4 | 1564 |
| Grp Volume(v), veh/h | 177 | 412 | 0 | 311 | 0 | 405 | 0 | 0 | 0 | 728 | 0 | 444 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1672 | 0 | 1568 |
| Q Serve(g_s), s | 4.7 | 11.4 | 0.0 | 0.0 | 0.0 | 8.4 | 0.0 | 0.0 | 0.0 | 29.9 | 0.0 | 15.4 |
| Cycle Q Clear(g_c), s | 4.7 | 11.4 | 0.0 | 11.8 | 0.0 | 8.4 | 0.0 | 0.0 | 0.0 | 29.9 | 0.0 | 15.4 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 361 | 780 | 0 | 444 | 0 | 1005 | 0 | 6 | 0 | 842 | 0 | 698 |
| V/C Ratio(X) | 0.49 | 0.53 | 0.00 | 0.70 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.86 | 0.00 | 0.64 |
| Avail Cap(c_a), veh/h | 392 | 838 | 0 | 472 | 0 | 1029 | 0 | 109 | 0 | 844 | 0 | 874 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.6 | 15.5 | 0.0 | 24.8 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 19.1 | 0.0 | 15.2 |
| Incr Delay (d2), s/veh | 1.0 | 1.0 | 0.0 | 5.2 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 9.3 | 0.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.4 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| %ile BackOfQ(95%),veh/ln | 4.6 | 10.3 | 0.0 | 10.6 | 0.0 | 6.8 | 0.0 | 0.0 | 0.0 | 21.7 | 0.0 | 11.5 |
| LnGrp Delay(d),s/veh | 18.1 | 16.5 | 0.0 | 30.2 | 0.0 | 5.5 | 0.0 | 0.0 | 0.0 | 28.4 | 0.0 | 16.4 |
| LnGrp LOS | B | B | | C | | A | | | | C | | B |
| Approach Vol, veh/h | | 589 | | | 716 | | | 0 | | | 1172 | |
| Approach Delay, s/veh | | 16.9 | | | 16.2 | | | 0.0 | | | 23.9 | |
| Approach LOS | | B | | | B | | | | | | C | |

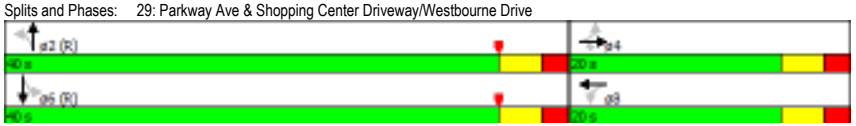
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 34.9 | | 35.0 | 12.0 | 22.9 | 35.0 | 0.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | 38.0 | 8.0 | 17.0 | 30.0 | 3.0 |
| Max Q Clear Time (g_c+I1), s | | 13.9 | | 17.9 | 7.2 | 13.8 | 31.9 | 0.0 |
| Green Ext Time (p_c), s | | 7.4 | | 1.9 | 0.0 | 2.1 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 20.0 |
| HCM 2010 LOS | | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 107 | 69 | 122 | 19 | 30 | 18 | 65 | 409 | 4 | 23 | 520 | 96 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 216 | | | 248 | | | 406 | | | 578 | |
| Travel Time (s) | | 5.9 | | | 6.8 | | | 11.1 | | | 15.8 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 20.0 | 20.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | | 66.7% | 66.7% | | 66.7% | 66.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 17 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 107 | 69 | 122 | 19 | 30 | 18 | 65 | 409 | 4 | 23 | 520 | 96 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1854 | 1809 | 1881 | 1809 | 1836 | 1884 | 1836 | 1863 | 1919 | 1863 |
| Adj Flow Rate, veh/h | 114 | 73 | 130 | 20 | 32 | 19 | 69 | 435 | 4 | 24 | 553 | 102 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 245 | 121 | 320 | 99 | 138 | 59 | 169 | 1019 | 9 | 81 | 1020 | 184 |
| Arrive On Green | 0.19 | 0.20 | 0.20 | 0.19 | 0.20 | 0.19 | 0.65 | 0.66 | 0.65 | 0.43 | 0.44 | 0.43 |
| Sat Flow, veh/h | 731 | 594 | 1576 | 110 | 680 | 289 | 152 | 1536 | 13 | 28 | 1538 | 277 |
| Grp Volume(v), veh/h | 187 | 0 | 130 | 71 | 0 | 0 | 508 | 0 | 0 | 679 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1325 | 0 | 1576 | 1080 | 0 | 0 | 1702 | 0 | 0 | 1842 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 4.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.4 | 0.0 | 4.3 | 8.6 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | 16.2 | 0.0 | 0.0 |
| Prop In Lane | 0.61 | | 1.00 | 0.28 | | 0.27 | 0.14 | | 0.01 | 0.04 | | 0.15 |
| Lane Grp Cap(c), veh/h | 344 | 0 | 320 | 278 | 0 | 0 | 1169 | 0 | 0 | 1254 | 0 | 0 |
| V/C Ratio(X) | 0.54 | 0.00 | 0.41 | 0.26 | 0.00 | 0.00 | 0.43 | 0.00 | 0.00 | 0.54 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 438 | 0 | 420 | 377 | 0 | 0 | 1169 | 0 | 0 | 1254 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.99 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.5 | 0.0 | 20.8 | 20.2 | 0.0 | 0.0 | 4.7 | 0.0 | 0.0 | 10.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.3 | 0.0 | 0.8 | 0.5 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.6 | 0.0 | 3.5 | 1.9 | 0.0 | 0.0 | 7.8 | 0.0 | 0.0 | 14.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 23.8 | 0.0 | 21.6 | 20.7 | 0.0 | 0.0 | 5.9 | 0.0 | 0.0 | 11.8 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | A | | | B | | |
| Approach Vol, veh/h | | 317 | | | 71 | | | 508 | | | 679 | |
| Approach Delay, s/veh | | 22.9 | | | 20.7 | | | 5.9 | | | 11.8 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.8 | | 16.2 | | 43.8 | | 16.2 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 35.0 | | 15.0 | | 35.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 9.6 | | 10.4 | | 18.2 | | 10.6 |
| Green Ext Time (p_c), s | | 6.1 | | 0.7 | | 5.3 | | 0.6 |

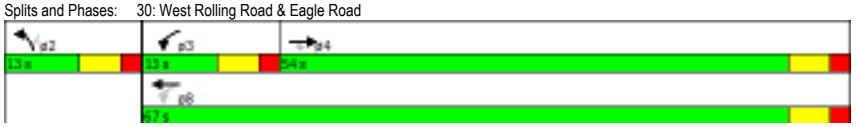
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.5 |
| HCM 2010 LOS | B |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 372 | 193 | 393 | 344 | 60 | 129 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1359 | | | 673 | 751 | |
| Travel Time (s) | 30.9 | | | 15.3 | 17.1 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 54.0 | 54.0 | 13.0 | 67.0 | 13.0 | 13.0 |
| Total Split (%) | 67.5% | 67.5% | 16.3% | 83.8% | 16.3% | 16.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 76.2
Natural Cycle: 80
Control Type: Semi Act-Uncoord

Splits and Phases: 30: West Rolling Road & Eagle Road








| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 372 | 193 | 393 | 344 | 60 | 129 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1818 | 1764 | 1747 | 1692 | 1675 |
| Adj Flow Rate, veh/h | 380 | 197 | 401 | 351 | 61 | 132 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Cap, veh/h | 1100 | 945 | 126 | 70 | 265 | 235 |
| Arrive On Green | 0.61 | 0.61 | 0.59 | 0.61 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1800 | 1545 | 3 | 115 | 1611 | 1424 |
| Grp Volume(v), veh/h | 380 | 197 | 752 | 0 | 61 | 132 |
| Grp Sat Flow(s),veh/h/ln | 1800 | 1545 | 118 | 0 | 1611 | 1424 |
| Q Serve(g_s), s | 4.6 | 2.5 | 15.0 | 0.0 | 1.5 | 3.8 |
| Cycle Q Clear(g_c), s | 4.6 | 2.5 | 15.0 | 0.0 | 1.5 | 3.8 |
| Prop In Lane | | 1.00 | 0.53 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1100 | 945 | 0 | 0 | 265 | 235 |
| V/C Ratio(X) | 0.35 | 0.21 | 0.00 | 0.00 | 0.23 | 0.56 |
| Avail Cap(c_a), veh/h | 1975 | 1695 | 0 | 0 | 289 | 255 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 4.3 | 3.9 | 0.0 | 0.0 | 16.2 | 17.2 |
| Incr Delay (d2), s/veh | 0.2 | 0.1 | 0.0 | 0.0 | 0.4 | 2.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.1 | 1.9 | 0.0 | 0.0 | 1.2 | 2.9 |
| LnGrp Delay(d),s/veh | 4.5 | 4.0 | 0.0 | 0.0 | 16.6 | 19.5 |
| LnGrp LOS | A | A | | | B | B |
| Approach Vol, veh/h | 577 | | | 752 | 193 | |
| Approach Delay, s/veh | 4.3 | | | 0.0 | 18.6 | |
| Approach LOS | A | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 12.4 | | 32.3 | | | | 32.3 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 7.0 | | 48.0 | | | | 61.0 |
| Max Q Clear Time (g_c+I1), s | | 6.3 | | 7.1 | | | | 17.0 |
| Green Ext Time (p_c), s | | 0.0 | | 9.2 | | | | 9.3 |

**Intersection Summary**

HCM 2010 Ctrl Delay 4.0
HCM 2010 LOS A

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 658 | 1300 | 6 | 909 | 1876 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1693 | 3319 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1693 | 3319 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 504 | | 565 | | | 405 |
| Travel Time (s) | 13.7 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 678 | 1346 | 0 | 937 | 1934 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 66.0 | 54.0 | | 66.0 | 120.0 |
| Total Split (%) | | 55.0% | 45.0% | | 55.0% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 58.0 | 47.0 | | 58.0 | 120.0 |
| Actuated g/C Ratio | | 0.48 | 0.39 | | 0.48 | 1.00 |
| v/c Ratio | | 0.54 | 1.00 | | 1.15 | 0.58 |
| Control Delay | | 18.8 | 50.0 | | 110.1 | 0.8 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 18.8 | 50.0 | | 110.1 | 0.8 |
| LOS | | B | D | | F | A |
| Approach Delay | | | 50.0 | | | 36.4 |
| Approach LOS | | | D | | | D |
| Queue Length 50th (ft) | | 153 | ~381 | | ~851 | 0 |
| Queue Length 95th (ft) | | 209 | m#670 | | #1101 | 0 |
| Internal Link Dist (ft) | 424 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Base Capacity (vph) | | 1245 | 1342 | | 818 | 3319 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.54 | 1.00 | | 1.15 | 0.58 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 37.7 — Intersection LOS: D
Intersection Capacity Utilization 103.8% — ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 18 | 1827 | 3 | 54 | 2872 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 1827 | 3 | 54 | 2872 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 19 | 1884 | 3 | 56 | 2961 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3477 | 943 | 0 | 0 | 1887 | 0 |
| Stage 1 | 1885 | - | - | - | - | - |
| Stage 2 | 1592 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | 3 | 283 | - | - | 341 | - |
| Stage 1 | 91 | - | - | - | - | - |
| Stage 2 | 138 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 3 | 283 | - | - | 341 | - |
| Mov Cap-2 Maneuver | 3 | - | - | - | - | - |
| Stage 1 | 91 | - | - | - | - | - |
| Stage 2 | 115 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 283 | 341 | - |
| HCM Lane V/C Ratio | - | - | 0.066 | 0.163 | - |
| HCM Control Delay (s) | - | - | 18.6 | 17.6 | - |
| HCM Lane LOS | - | - | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 54 | 311 | 555 | 41 | 199 | 816 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 6.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 54 | 311 | 555 | 41 | 199 | 816 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 59 | 338 | 603 | 45 | 216 | 887 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1923 | 603 | 0 | 0 | 603 | 0 |
| Stage 1 | 603 | - | - | - | - | - |
| Stage 2 | 1320 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 97 | 545 | - | - | 743 | - |
| Stage 1 | 659 | - | - | - | - | - |
| Stage 2 | 314 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 41 | 545 | - | - | 743 | - |
| Mov Cap-2 Maneuver | 111 | - | - | - | - | - |
| Stage 1 | 659 | - | - | - | - | - |
| Stage 2 | 134 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 28.8 | 0 | 2.3 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 111 | 545 | 743 | - |
| HCM Lane V/C Ratio | - | - | 0.529 | 0.62 | 0.291 | - |
| HCM Control Delay (s) | - | - | 69.1 | 21.8 | 11.8 | 0 |
| HCM Lane LOS | - | - | F | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.4 | 4.2 | 1.2 | - |

Notes

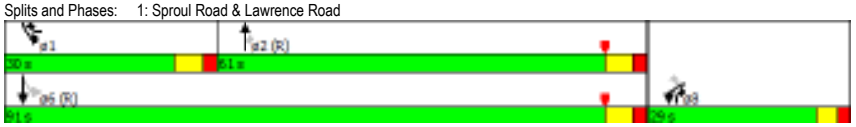
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 547 | 542 | 1502 | 574 | 380 | 1409 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 345 | | 389 | | | 1061 |
| Travel Time (s) | 5.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 29.0 | 30.0 | 61.0 | 29.0 | 30.0 | 91.0 |
| Total Split (%) | 24.2% | 25.0% | 50.8% | 24.2% | 25.0% | 75.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 547 | 542 | 1502 | 574 | 380 | 1409 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1816 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 558 | 436 | 1533 | 518 | 388 | 1438 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 672 | 588 | 1685 | 1114 | 438 | 2574 |
| Arrive On Green | 0.21 | 0.21 | 1.00 | 1.00 | 0.15 | 0.72 |
| Sat Flow, veh/h | 3227 | 1544 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 558 | 436 | 1533 | 518 | 388 | 1438 |
| Grp Sat Flow(s),veh/h/ln | 1613 | 1544 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 19.9 | 25.0 | 0.0 | 0.0 | 13.7 | 22.7 |
| Cycle Q Clear(g_c), s | 19.9 | 25.0 | 0.0 | 0.0 | 13.7 | 22.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 672 | 588 | 1685 | 1114 | 438 | 2574 |
| V/C Ratio(X) | 0.83 | 0.74 | 0.91 | 0.46 | 0.89 | 0.56 |
| Avail Cap(c_a), veh/h | 672 | 554 | 1749 | 1148 | 544 | 2574 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.19 | 0.19 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.5 | 32.1 | 1.3 | 0.3 | 29.7 | 8.0 |
| Incr Delay (d2), s/veh | 8.6 | 5.6 | 1.9 | 0.3 | 13.9 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 8.3 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.7 | 19.3 | 8.9 | 1.8 | 22.3 | 17.1 |
| LnGrp Delay(d),s/veh | 54.1 | 37.7 | 3.4 | 0.6 | 51.8 | 8.9 |
| LnGrp LOS | D | D | A | A | D | A |
| Approach Vol, veh/h | 994 | | 2051 | | | 1826 |
| Approach Delay, s/veh | 46.9 | | 2.7 | | | 18.0 |
| Approach LOS | D | | A | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 23.1 | 67.9 | | | | 91.0 | | 29.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 24.0 | 55.0 | | | | 85.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | 16.2 | 2.5 | | | | 25.2 | | 27.5 |
| Green Ext Time (p_c), s | 0.9 | 33.8 | | | | 36.6 | | 0.0 |

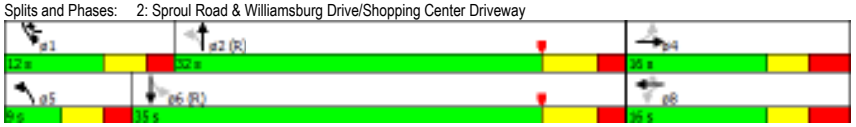
**Intersection Summary**

HCM 2010 Ctrl Delay 17.5
HCM 2010 LOS B

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 47 | 242 | 13 | 240 | 44 | 1790 | 176 | 180 | 1813 | 12 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 544 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 9.3 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 16.0 | 12.0 | 9.0 | 32.0 | | 12.0 | 35.0 | |
| Total Split (%) | 26.7% | 26.7% | | 26.7% | 26.7% | 20.0% | 15.0% | 53.3% | | 20.0% | 58.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 31 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 47 | 242 | 13 | 240 | 44 | 1790 | 176 | 180 | 1813 | 12 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1796 | 1800 | 1764 | 1764 | 1764 | 1764 | 1731 | 1835 | 1800 | 1872 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 43 | 257 | 14 | 211 | 47 | 1904 | 0 | 191 | 1929 | 12 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| Cap, veh/h | 75 | 64 | 71 | 259 | 8 | 455 | 200 | 2148 | 0 | 323 | 1948 | 7 |
| Arrive On Green | 0.17 | 0.18 | 0.17 | 0.17 | 0.18 | 0.18 | 0.05 | 0.48 | 0.00 | 0.10 | 0.54 | 0.52 |
| Sat Flow, veh/h | 0 | 352 | 388 | 778 | 42 | 1499 | 1680 | 4743 | 0 | 1714 | 3624 | 23 |
| Grp Volume(v), veh/h | 82 | 0 | 0 | 271 | 0 | 211 | 47 | 1904 | 0 | 191 | 946 | 995 |
| Grp Sat Flow(s),veh/h/ln | 740 | 0 | 0 | 820 | 0 | 1499 | 1680 | 1506 | 0 | 1714 | 1778 | 1868 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.0 | 0.8 | 22.8 | 0.0 | 2.9 | 31.6 | 31.7 |
| Cycle Q Clear(g_c), s | 10.0 | 0.0 | 0.0 | 10.0 | 0.0 | 7.0 | 0.8 | 22.8 | 0.0 | 2.9 | 31.6 | 31.7 |
| Prop In Lane | 0.24 | | 0.52 | 0.95 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 198 | 0 | 0 | 254 | 0 | 455 | 200 | 2148 | 0 | 323 | 954 | 1002 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.00 | 1.07 | 0.00 | 0.46 | 0.24 | 0.89 | 0.00 | 0.59 | 0.99 | 0.99 |
| Avail Cap(c_a), veh/h | 198 | 0 | 0 | 254 | 0 | 431 | 262 | 2164 | 0 | 371 | 954 | 1002 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.72 | 0.72 | 0.72 |
| Uniform Delay (d), s/veh | 21.7 | 0.0 | 0.0 | 26.9 | 0.0 | 16.9 | 13.8 | 14.4 | 0.0 | 12.7 | 13.9 | 13.9 |
| Incr Delay (d2), s/veh | 1.4 | 0.0 | 0.0 | 75.9 | 0.0 | 0.7 | 0.6 | 5.9 | 0.0 | 1.4 | 22.9 | 22.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.7 | 2.1 | 2.3 |
| %ile BackOfQ(95%),veh/ln | 2.3 | 0.0 | 0.0 | 9.6 | 0.0 | 5.2 | 0.7 | 16.1 | 0.0 | 3.5 | 28.4 | 29.7 |
| LnGrp Delay(d),s/veh | 23.0 | 0.0 | 0.0 | 102.8 | 0.0 | 17.7 | 14.4 | 20.5 | 0.0 | 14.8 | 38.9 | 38.7 |
| LnGrp LOS | C | | | F | | B | B | C | | B | D | D |
| Approach Vol, veh/h | | 82 | | | 482 | | | 1951 | | | 2132 | |
| Approach Delay, s/veh | | 23.0 | | | 65.5 | | | 20.3 | | | 36.6 | |
| Approach LOS | | C | | | E | | | C | | | D | |

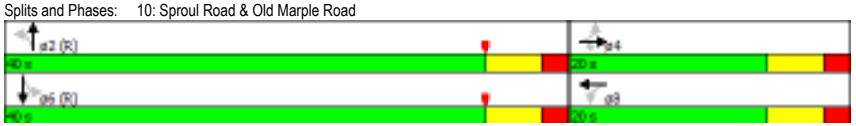
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 10.3 | 33.7 | | 16.0 | 6.8 | 37.2 | | 16.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 26.0 | | 10.0 | 4.0 | 29.0 | | 10.0 |
| Max Q Clear Time (g_c+I1), s | 5.4 | 25.3 | | 12.0 | 3.3 | 34.1 | | 12.0 |
| Green Ext Time (p_c), s | 0.1 | 0.7 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.5 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 241 | 103 | 55 | 179 | 139 | 10 | 67 | 1624 | 71 | 3 | 1245 | 176 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | | 66.7% | 66.7% | | 66.7% | 66.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | 0.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 6.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 241 | 103 | 55 | 179 | 139 | 10 | 67 | 1624 | 71 | 3 | 1245 | 176 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1885 | 1782 | 1782 | 1746 | 1782 | 1738 | 1752 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 256 | 110 | 46 | 190 | 148 | 4 | 71 | 1728 | 71 | 3 | 1324 | 173 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 321 | 94 | 353 | 285 | 161 | 4 | 199 | 1903 | 76 | 142 | 1785 | 232 |
| Arrive On Green | 0.23 | 0.25 | 0.23 | 0.23 | 0.25 | 0.23 | 0.57 | 0.58 | 0.57 | 0.57 | 0.58 | 0.57 |
| Sat Flow, veh/h | 876 | 376 | 1513 | 767 | 643 | 17 | 326 | 3259 | 133 | 256 | 3060 | 397 |
| Grp Volume(v), veh/h | 366 | 0 | 46 | 342 | 0 | 0 | 71 | 878 | 921 | 3 | 740 | 757 |
| Grp Sat Flow(s),veh/h/ln | 1252 | 0 | 1513 | 1427 | 0 | 0 | 326 | 1664 | 1728 | 256 | 1718 | 1738 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 12.6 | 27.9 | 28.5 | 0.6 | 18.9 | 19.4 |
| Cycle Q Clear(g_c), s | 14.0 | 0.0 | 1.4 | 14.0 | 0.0 | 0.0 | 32.0 | 27.9 | 28.5 | 29.2 | 18.9 | 19.4 |
| Prop In Lane | 0.70 | | 1.00 | 0.56 | | 0.01 | 1.00 | | 0.08 | 1.00 | | 0.23 |
| Lane Grp Cap(c), veh/h | 394 | 0 | 353 | 426 | 0 | 0 | 199 | 971 | 1008 | 142 | 1002 | 1014 |
| V/C Ratio(X) | 0.93 | 0.00 | 0.13 | 0.80 | 0.00 | 0.00 | 0.36 | 0.90 | 0.91 | 0.02 | 0.74 | 0.75 |
| Avail Cap(c_a), veh/h | 394 | 0 | 353 | 426 | 0 | 0 | 199 | 971 | 1008 | 143 | 1002 | 1014 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.9 | 0.0 | 18.2 | 22.5 | 0.0 | 0.0 | 22.0 | 11.1 | 11.2 | 25.3 | 9.1 | 9.3 |
| Incr Delay (d2), s/veh | 28.2 | 0.0 | 0.2 | 10.6 | 0.0 | 0.0 | 4.9 | 13.4 | 13.9 | 0.3 | 4.9 | 5.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.2 | 0.0 | 1.1 | 11.3 | 0.0 | 0.0 | 2.5 | 22.8 | 24.2 | 0.1 | 15.4 | 15.8 |
| LnGrp Delay(d),s/veh | 52.0 | 0.0 | 18.4 | 33.1 | 0.0 | 0.0 | 26.9 | 24.6 | 25.2 | 25.6 | 14.0 | 14.3 |
| LnGrp LOS | D | | B | C | | | C | C | C | C | B | B |
| Approach Vol, veh/h | | 412 | | | 342 | | | 1870 | | | 1500 | |
| Approach Delay, s/veh | | 48.3 | | | 33.1 | | | 25.0 | | | 14.2 | |
| Approach LOS | | D | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 14.0 | | 34.0 | | 14.0 |
| Max Q Clear Time (g_c+I1), s | | 34.0 | | 16.0 | | 31.2 | | 16.0 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 2.7 | | 0.0 |

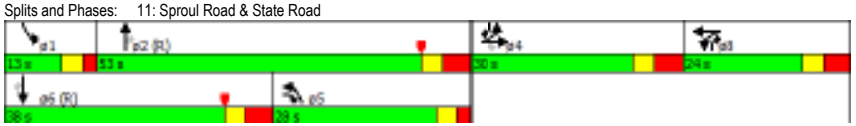
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 24.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 669 | 59 | 467 | 276 | 246 | 115 | 393 | 1014 | 323 | 93 | 820 | 605 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 46% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 30.0 | 30.0 | 28.0 | 24.0 | 24.0 | | 28.0 | 53.0 | 24.0 | 13.0 | 38.0 | 30.0 |
| Total Split (%) | 25.0% | 25.0% | 23.3% | 20.0% | 20.0% | | 23.3% | 44.2% | 20.0% | 10.8% | 31.7% | 25.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 669 | 59 | 467 | 276 | 246 | 115 | 393 | 1014 | 323 | 93 | 820 | 605 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1833 | 1826 | 1872 | 1860 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 748 | 0 | 0 | 275 | 281 | 0 | 414 | 1067 | 0 | 98 | 863 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 703 | 0 | 1398 | 267 | 279 | 0 | 938 | 3078 | 1604 | 129 | 903 | 707 |
| Arrive On Green | 0.20 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.55 | 0.76 | 0.00 | 0.08 | 0.27 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 748 | 0 | 0 | 275 | 281 | 0 | 414 | 1067 | 0 | 98 | 863 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 24.0 | 0.0 | 0.0 | 18.0 | 18.0 | 0.0 | 17.4 | 13.3 | 0.0 | 6.7 | 30.1 | 0.0 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 0.0 | 18.0 | 18.0 | 0.0 | 17.4 | 13.3 | 0.0 | 6.7 | 30.1 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 703 | 0 | 1398 | 267 | 279 | 0 | 938 | 3078 | 1604 | 129 | 903 | 707 |
| V/C Ratio(X) | 1.06 | 0.00 | 0.00 | 1.03 | 1.01 | 0.00 | 0.44 | 0.35 | 0.00 | 0.76 | 0.96 | 0.00 |
| Avail Cap(c_a), veh/h | 703 | 0 | 1165 | 267 | 279 | 0 | 934 | 2570 | 1377 | 129 | 903 | 707 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 48.0 | 0.0 | 0.0 | 51.0 | 51.0 | 0.0 | 16.0 | 1.4 | 0.0 | 54.5 | 43.3 | 0.0 |
| Incr Delay (d2), s/veh | 52.5 | 0.0 | 0.0 | 62.5 | 55.7 | 0.0 | 0.3 | 0.3 | 0.0 | 23.1 | 21.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 33.0 | 0.0 | 0.0 | 38.4 | 51.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 33.6 | 0.0 | 0.0 | 27.3 | 28.4 | 0.0 | 13.4 | 4.2 | 0.0 | 7.2 | 23.3 | 0.0 |
| LnGrp Delay(d),s/veh | 133.5 | 0.0 | 0.0 | 151.9 | 157.7 | 0.0 | 16.4 | 1.7 | 0.0 | 77.6 | 64.3 | 0.0 |
| LnGrp LOS | F | | | F | F | | B | A | | E | E | |
| Approach Vol, veh/h | | 748 | | | 556 | | | 1481 | | | 961 | |
| Approach Delay, s/veh | | 133.5 | | | 154.9 | | | 5.8 | | | 65.6 | |
| Approach LOS | | F | | | F | | | A | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 97.3 | | 30.0 | 72.3 | 38.0 | | 24.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 46.0 | | 23.0 | 23.0 | * 31 | | 17.0 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 15.8 | | 26.5 | 19.9 | 32.6 | | 20.5 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | | 0.0 | 1.3 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 68.8
HCM 2010 LOS E

**Notes**

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

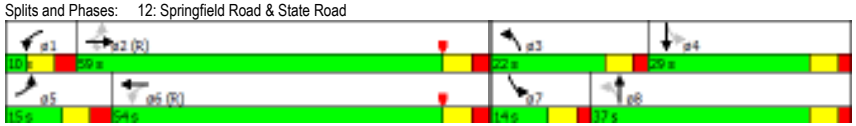




| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 233 | 1460 | 460 | 41 | 1342 | 196 | 392 | 484 | 44 | 211 | 427 | 38 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 15.0 | 59.0 | 59.0 | 10.0 | 54.0 | | 22.0 | 37.0 | | 14.0 | 29.0 | |
| Total Split (%) | 12.5% | 49.2% | 49.2% | 8.3% | 45.0% | | 18.3% | 30.8% | | 11.7% | 24.2% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 97 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road



## 12: Springfield Road & State Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 233 | 1460 | 460 | 41 | 1342 | 196 | 392 | 484 | 44 | 211 | 427 | 38 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1731 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 245 | 1537 | 0 | 43 | 1413 | 0 | 413 | 509 | 0 | 222 | 449 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 191 | 1540 | 689 | 115 | 1315 | 0 | 299 | 478 | 0 | 189 | 362 | 0 |
| Arrive On Green | 0.08 | 0.44 | 0.00 | 0.03 | 0.40 | 0.00 | 0.14 | 0.27 | 0.00 | 0.02 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3375 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 245 | 1537 | 0 | 43 | 1413 | 0 | 413 | 509 | 0 | 222 | 449 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 9.0 | 52.8 | 0.0 | 1.8 | 48.0 | 0.0 | 17.0 | 32.0 | 0.0 | 9.0 | 24.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 52.8 | 0.0 | 1.8 | 48.0 | 0.0 | 17.0 | 32.0 | 0.0 | 9.0 | 24.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 191 | 1540 | 689 | 115 | 1315 | 0 | 299 | 478 | 0 | 189 | 362 | 0 |
| V/C Ratio(X) | 1.28 | 1.00 | 0.00 | 0.37 | 1.07 | 0.00 | 1.38 | 1.07 | 0.00 | 1.17 | 1.24 | 0.00 |
| Avail Cap(c_a), veh/h | 191 | 1540 | 689 | 116 | 1315 | 0 | 299 | 478 | 0 | 189 | 362 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.46 | 0.46 | 0.00 |
| Uniform Delay (d), s/veh | 34.8 | 33.5 | 0.0 | 29.4 | 36.0 | 0.0 | 34.5 | 44.0 | 0.0 | 42.2 | 56.0 | 0.0 |
| Incr Delay (d2), s/veh | 160.7 | 22.4 | 0.0 | 2.0 | 47.3 | 0.0 | 190.6 | 59.8 | 0.0 | 100.7 | 119.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 42.7 | 22.4 | 0.0 | 0.0 | 25.1 | 0.0 | 50.2 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 29.7 | 44.1 | 0.0 | 1.6 | 59.7 | 0.0 | 52.3 | 43.7 | 0.0 | 9.5 | 43.2 | 0.0 |
| LnGrp Delay(d),s/veh | 238.2 | 78.3 | 0.0 | 31.4 | 108.4 | 0.0 | 275.2 | 110.8 | 0.0 | 143.0 | 175.2 | 0.0 |
| LnGrp LOS | F | E | | C | F | | F | F | | F | F | |
| Approach Vol, veh/h | | 1782 | | | 1456 | | | 922 | | | 671 | |
| Approach Delay, s/veh | | 100.3 | | | 106.1 | | | 184.5 | | | 164.5 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 59.0 | 22.0 | 29.0 | 15.0 | 54.0 | 14.0 | 37.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 52.0 | 16.0 | 23.0 | 8.0 | 47.0 | 8.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 55.3 | 19.5 | 26.5 | 11.5 | 50.5 | 11.5 | 34.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 127.0 |
| HCM 2010 LOS | F |



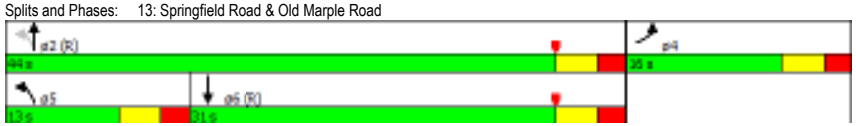
## 13: Springfield Road & Old Marple Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 78 | 107 | 74 | 809 | 615 | 260 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 542 | |
| Travel Time (s) | 10.6 | | | 23.1 | 14.8 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 8.0 | | 9.0 | 8.0 | 8.0 | |
| Total Split (s) | 16.0 | | 13.0 | 44.0 | 31.0 | |
| Total Split (%) | 26.7% | | 21.7% | 73.3% | 51.7% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 13: Springfield Road & Old Marple Road



## 13: Springfield Road & Old Marple Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 78 | 107 | 74 | 809 | 615 | 260 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1779 | 1791 | 1809 |
| Adj Flow Rate, veh/h | 90 | 123 | 85 | 930 | 707 | 299 |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 122 | 167 | 65 | 340 | 820 | 347 |
| Arrive On Green | 0.18 | 0.16 | 1.00 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 674 | 922 | 0 | 496 | 1196 | 506 |
| Grp Volume(v), veh/h | 214 | 0 | 1015 | 0 | 0 | 1006 |
| Grp Sat Flow(s),veh/h/ln | 1604 | 0 | 496 | 0 | 0 | 1702 |
| Q Serve(g_s), s | 7.6 | 0.0 | 45.1 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.6 | 0.0 | 45.1 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.42 | 0.57 | 0.08 | | | 0.30 |
| Lane Grp Cap(c), veh/h | 291 | 0 | 0 | 0 | 0 | 1166 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.86 |
| Avail Cap(c_a), veh/h | 321 | 0 | 0 | 0 | 0 | 1166 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.68 |
| Uniform Delay (d), s/veh | 23.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 |
| LnGrp Delay(d),s/veh | 31.2 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 |
| LnGrp LOS | C | | | | | A |
| Approach Vol, veh/h | 214 | | | 1015 | 1006 | |
| Approach Delay, s/veh | 31.2 | | | 0.0 | 6.0 | |
| Approach LOS | C | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 45.1 | | 14.9 | | 45.1 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 39.0 | | 11.0 | | 26.0 | | |
| Max Q Clear Time (g_c+I1), s | | 47.1 | | 10.1 | | 2.5 | | |
| Green Ext Time (p_c), s | | 0.0 | | 0.1 | | 13.6 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.7 |
| HCM 2010 LOS | A |

**Notes**

User approved volume balancing among the lanes for turning movement.



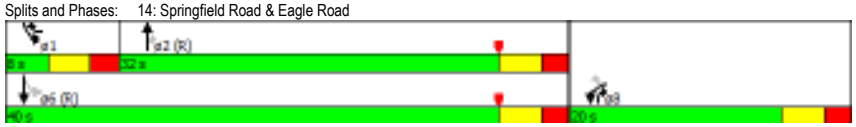
## 14: Springfield Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 364 | 128 | 675 | 196 | 102 | 523 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 521 | | 542 | | | 514 |
| Travel Time (s) | 10.1 | | 14.8 | | | 14.0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 9.0 | 9.0 | 8.0 | 9.0 | 33.0 |
| Total Split (s) | 20.0 | 8.0 | 32.0 | 20.0 | 8.0 | 40.0 |
| Total Split (%) | 33.3% | 13.3% | 53.3% | 33.3% | 13.3% | 66.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road



## 14: Springfield Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 364 | 128 | 675 | 196 | 102 | 523 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1760 | 1773 | 1844 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 396 | 121 | 734 | 164 | 111 | 568 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 0 | 1 |
| Cap, veh/h | 479 | 496 | 831 | 1150 | 425 | 1078 |
| Arrive On Green | 0.26 | 0.26 | 0.94 | 0.94 | 0.07 | 0.60 |
| Sat Flow, veh/h | 1809 | 1496 | 1773 | 1568 | 1723 | 1791 |
| Grp Volume(v), veh/h | 396 | 121 | 734 | 164 | 111 | 568 |
| Grp Sat Flow(s),veh/h/ln | 1809 | 1496 | 1773 | 1568 | 1723 | 1791 |
| Q Serve(g_s), s | 12.4 | 3.5 | 9.1 | 0.3 | 1.7 | 11.1 |
| Cycle Q Clear(g_c), s | 12.4 | 3.5 | 9.1 | 0.3 | 1.7 | 11.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 479 | 496 | 831 | 1150 | 425 | 1078 |
| V/C Ratio(X) | 0.83 | 0.24 | 0.88 | 0.14 | 0.26 | 0.53 |
| Avail Cap(c_a), veh/h | 482 | 499 | 831 | 1150 | 425 | 1078 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.09 | 0.09 | 0.29 | 0.29 |
| Uniform Delay (d), s/veh | 20.8 | 14.6 | 1.3 | 0.3 | 7.1 | 7.0 |
| Incr Delay (d2), s/veh | 11.2 | 0.3 | 1.4 | 0.0 | 0.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.3 | 2.7 | 3.6 | 0.3 | 1.5 | 7.6 |
| LnGrp Delay(d),s/veh | 32.2 | 14.8 | 2.7 | 0.3 | 7.2 | 7.5 |
| LnGrp LOS | C | B | A | A | A | A |
| Approach Vol, veh/h | 517 | | 898 | | | 679 |
| Approach Delay, s/veh | 28.1 | | 2.3 | | | 7.5 |
| Approach LOS | C | | A | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.0 | 32.1 | | | | 40.1 | | 19.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 3.0 | 27.0 | | | | 35.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 11.6 | | | | 13.6 | | 14.9 |
| Green Ext Time (p_c), s | 0.0 | 6.1 | | | | 6.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.4 |
| HCM 2010 LOS | B |



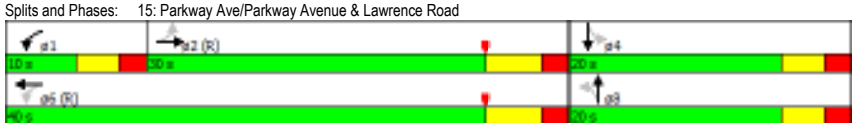
## 15: Parkway Ave/Parkway Avenue & Lawrence Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 747 | 134 | 234 | 828 | 9 | 209 | 26 | 342 | 6 | 14 | 44 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 396 | | | 911 | | | 623 | | | 466 | |
| Travel Time (s) | | 6.0 | | | 13.8 | | | 17.0 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 30.0 | 30.0 | | 10.0 | 40.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (%) | 50.0% | 50.0% | | 16.7% | 66.7% | | 33.3% | 33.3% | | 33.3% | 33.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 39 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road



## 15: Parkway Ave/Parkway Avenue & Lawrence Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 747 | 134 | 234 | 828 | 9 | 209 | 26 | 342 | 6 | 14 | 44 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1774 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1800 | 1827 |
| Adj Flow Rate, veh/h | 32 | 812 | 142 | 254 | 900 | 9 | 227 | 28 | 284 | 7 | 15 | 46 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 82 | 1448 | 268 | 100 | 947 | 11 | 343 | 37 | 371 | 76 | 111 | 254 |
| Arrive On Green | 0.57 | 0.58 | 0.57 | 0.57 | 0.58 | 0.57 | 0.27 | 0.27 | 0.25 | 0.25 | 0.27 | 0.25 |
| Sat Flow, veh/h | 33 | 2483 | 463 | 3 | 1624 | 19 | 1259 | 137 | 1391 | 38 | 417 | 951 |
| Grp Volume(v), veh/h | 516 | 0 | 470 | 409 | 0 | 754 | 227 | 0 | 312 | 68 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1447 | 0 | 1532 | 47 | 0 | 1599 | 1259 | 0 | 1528 | 1406 | 0 | 0 |
| Q Serve(g_s), s | 2.5 | 0.0 | 11.1 | 47.2 | 0.0 | 22.3 | 5.1 | 0.0 | 11.4 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 24.9 | 0.0 | 11.1 | 47.2 | 0.0 | 22.3 | 16.0 | 0.0 | 11.4 | 11.4 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.30 | 0.62 | | 0.01 | 1.00 | | 0.91 | 0.10 | | 0.68 |
| Lane Grp Cap(c), veh/h | 871 | 0 | 894 | 0 | 0 | 933 | 343 | 0 | 407 | 418 | 0 | 0 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.53 | 0.00 | 0.00 | 0.81 | 0.66 | 0.00 | 0.77 | 0.16 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 884 | 0 | 894 | 0 | 0 | 933 | 343 | 0 | 407 | 418 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.88 | 0.00 | 0.88 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 8.1 | 0.0 | 7.7 | 0.0 | 0.0 | 9.9 | 23.4 | 0.0 | 20.7 | 17.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 3.0 | 0.0 | 2.2 | 0.0 | 0.0 | 7.5 | 4.1 | 0.0 | 7.5 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.3 | 0.0 | 9.0 | 0.0 | 0.0 | 17.3 | 7.2 | 0.0 | 9.3 | 1.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 11.0 | 0.0 | 9.9 | 0.0 | 0.0 | 17.4 | 27.5 | 0.0 | 28.2 | 17.4 | 0.0 | 0.0 |
| LnGrp LOS | B | | A | | | B | C | | C | B | | |
| Approach Vol, veh/h | | 986 | | | 1163 | | | 539 | | | 68 | |
| Approach Delay, s/veh | | 10.5 | | | 11.3 | | | 27.9 | | | 17.4 | |
| Approach LOS | | B | | | B | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 24.0 | | 15.0 | | 34.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 26.9 | | 13.4 | | 49.2 | | 18.5 |
| Green Ext Time (p_c), s | | 0.0 | | 0.5 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.4 |
| HCM 2010 LOS | B |



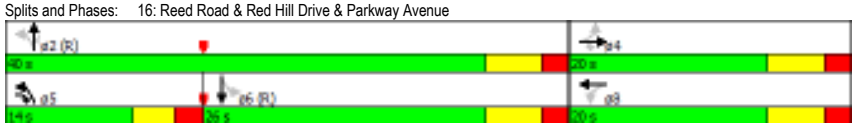
## 16: Reed Road & Red Hill Drive & Parkway Avenue
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 134 | 105 | 298 | 23 | 113 | 3 | 310 | 356 | 28 | 4 | 310 | 90 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 20.0 | 20.0 | 14.0 | 20.0 | 20.0 | | 14.0 | 40.0 | 40.0 | 26.0 | 26.0 | |
| Total Split (%) | 33.3% | 33.3% | 23.3% | 33.3% | 33.3% | | 23.3% | 66.7% | 66.7% | 43.3% | 43.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue



## 16: Reed Road & Red Hill Drive & Parkway Avenue
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 134 | 105 | 298 | 23 | 113 | 3 | 310 | 356 | 28 | 4 | 310 | 90 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1729 | 1747 | 1816 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1860 | 1836 |
| Adj Flow Rate, veh/h | 141 | 111 | 272 | 24 | 119 | 2 | 326 | 375 | 27 | 4 | 326 | 80 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 375 | 371 | 573 | 101 | 326 | 5 | 688 | 1084 | 931 | 62 | 570 | 138 |
| Arrive On Green | 0.06 | 0.07 | 0.07 | 0.20 | 0.21 | 0.20 | 0.16 | 0.62 | 0.62 | 0.38 | 0.40 | 0.38 |
| Sat Flow, veh/h | 1175 | 1747 | 1544 | 147 | 1534 | 24 | 1647 | 1747 | 1499 | 4 | 1440 | 350 |
| Grp Volume(v), veh/h | 141 | 111 | 272 | 145 | 0 | 0 | 326 | 375 | 27 | 410 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1175 | 1747 | 1544 | 1704 | 0 | 0 | 1647 | 1747 | 1499 | 1795 | 0 | 0 |
| Q Serve(g_s), s | 1.6 | 3.6 | 8.3 | 0.0 | 0.0 | 0.0 | 6.0 | 6.2 | 0.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.7 | 3.6 | 8.3 | 4.1 | 0.0 | 0.0 | 6.0 | 6.2 | 0.4 | 10.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.17 | | 0.01 | 1.00 | | 1.00 | 0.01 | | 0.20 |
| Lane Grp Cap(c), veh/h | 375 | 371 | 573 | 404 | 0 | 0 | 688 | 1084 | 931 | 740 | 0 | 0 |
| V/C Ratio(X) | 0.38 | 0.30 | 0.47 | 0.36 | 0.00 | 0.00 | 0.47 | 0.35 | 0.03 | 0.55 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 419 | 437 | 631 | 464 | 0 | 0 | 701 | 1084 | 931 | 741 | 0 | 0 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.1 | 23.7 | 17.1 | 20.3 | 0.0 | 0.0 | 6.2 | 5.5 | 4.4 | 14.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.4 | 0.6 | 0.5 | 0.0 | 0.0 | 0.5 | 0.9 | 0.1 | 3.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.2 | 3.2 | 6.6 | 3.9 | 0.0 | 0.0 | 5.0 | 5.7 | 0.3 | 10.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 25.7 | 24.1 | 17.7 | 20.8 | 0.0 | 0.0 | 6.7 | 6.4 | 4.4 | 17.3 | 0.0 | 0.0 |
| LnGrp LOS | C | C | B | C | | | A | A | A | B | | |
| Approach Vol, veh/h | | 524 | | | 145 | | | 728 | | | 410 | |
| Approach Delay, s/veh | | 21.2 | | | 20.8 | | | 6.5 | | | 17.3 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.3 | | 17.7 | 13.5 | 28.7 | | 17.7 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 14.0 | 9.0 | 20.0 | | 14.0 |
| Max Q Clear Time (g_c+I1), s | | 8.7 | | 10.8 | 8.5 | 12.9 | | 6.1 |
| Green Ext Time (p_c), s | | 3.2 | | 0.9 | 0.1 | 2.0 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.4 |
| HCM 2010 LOS | B |



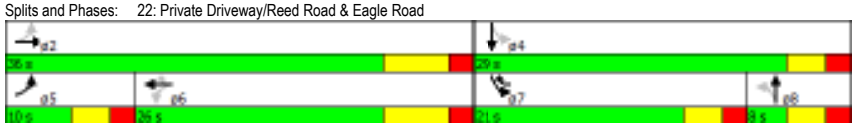
## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 195 | 230 | 0 | 0 | 322 | 442 | 1 | 0 | 1 | 541 | 0 | 215 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | pm+ov | Perm | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 9.0 | 8.0 | 8.0 | | 9.0 | 12.0 | |
| Total Split (s) | 10.0 | 36.0 | | 26.0 | 26.0 | 21.0 | 8.0 | 8.0 | | 21.0 | 29.0 | |
| Total Split (%) | 15.4% | 55.4% | | 40.0% | 40.0% | 32.3% | 12.3% | 12.3% | | 32.3% | 44.6% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 65 | |
| Actuated Cycle Length: 56.1 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road



## 22: Private Driveway/Reed Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 195 | 230 | 0 | 0 | 322 | 442 | 1 | 0 | 1 | 541 | 0 | 215 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1755 | 1738 | 1844 |
| Adj Flow Rate, veh/h | 210 | 247 | 0 | 0 | 346 | 303 | 1 | 0 | 1 | 582 | 0 | 220 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| Cap, veh/h | 354 | 809 | 0 | 0 | 484 | 812 | 118 | 14 | 46 | 721 | 0 | 590 |
| Arrive On Green | 0.10 | 0.44 | 0.00 | 0.00 | 0.28 | 0.28 | 0.05 | 0.00 | 0.05 | 0.27 | 0.00 | 0.40 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 509 | 222 | 730 | 1672 | 0 | 1478 |
| Grp Volume(v), veh/h | 210 | 247 | 0 | 0 | 346 | 303 | 2 | 0 | 0 | 582 | 0 | 220 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 1461 | 0 | 0 | 1672 | 0 | 1478 |
| Q Serve(g_s), s | 4.9 | 5.4 | 0.0 | 0.0 | 11.2 | 7.3 | 0.0 | 0.0 | 0.0 | 17.0 | 0.0 | 6.6 |
| Cycle Q Clear(g_c), s | 4.9 | 5.4 | 0.0 | 0.0 | 11.2 | 7.3 | 0.1 | 0.0 | 0.0 | 17.0 | 0.0 | 6.6 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 354 | 809 | 0 | 0 | 484 | 812 | 155 | 0 | 0 | 721 | 0 | 590 |
| V/C Ratio(X) | 0.59 | 0.31 | 0.00 | 0.00 | 0.71 | 0.37 | 0.01 | 0.00 | 0.00 | 0.81 | 0.00 | 0.37 |
| Avail Cap(c_a), veh/h | 365 | 883 | 0 | 0 | 554 | 872 | 157 | 0 | 0 | 722 | 0 | 592 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.5 | 11.3 | 0.0 | 0.0 | 20.3 | 8.0 | 27.9 | 0.0 | 0.0 | 18.7 | 0.0 | 13.2 |
| Incr Delay (d2), s/veh | 2.5 | 0.4 | 0.0 | 0.0 | 4.7 | 0.5 | 0.0 | 0.0 | 0.0 | 6.8 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 5.1 | 0.0 | 0.0 | 10.2 | 5.7 | 0.1 | 0.0 | 0.0 | 5.4 | 0.0 | 4.9 |
| LnGrp Delay(d),s/veh | 17.5 | 11.6 | 0.0 | 0.0 | 25.1 | 8.5 | 28.0 | 0.0 | 0.0 | 25.5 | 0.0 | 13.8 |
| LnGrp LOS | B | B | | | C | A | C | | | C | | B |
| Approach Vol, veh/h | | 457 | | | 649 | | | 2 | | | 802 | |
| Approach Delay, s/veh | | 14.4 | | | 17.4 | | | 28.0 | | | 22.3 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 33.4 | | 28.9 | 10.0 | 23.4 | 21.0 | 7.9 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 29.0 | | 24.0 | 5.0 | 19.0 | 16.0 | 3.0 |
| Max Q Clear Time (g_c+I1), s | | 7.9 | | 9.1 | 7.4 | 13.7 | 19.5 | 2.5 |
| Green Ext Time (p_c), s | | 6.5 | | 0.7 | 0.0 | 2.7 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.7 |
| HCM 2010 LOS | B |



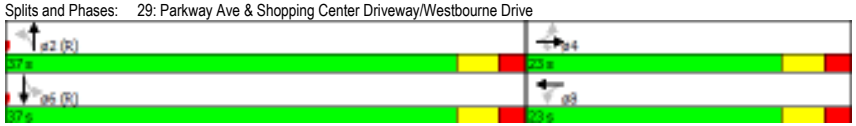
## 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 126 | 53 | 165 | 9 | 42 | 22 | 111 | 339 | 4 | 24 | 230 | 121 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 184 | | | 229 | | | 361 | | | 623 | |
| Travel Time (s) | | 5.0 | | | 6.2 | | | 9.8 | | | 17.0 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | | 37.0 | 37.0 | | 37.0 | 37.0 | |
| Total Split (%) | 38.3% | 38.3% | 38.3% | 38.3% | 38.3% | | 61.7% | 61.7% | | 61.7% | 61.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 25 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive



## 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 126 | 53 | 165 | 9 | 42 | 22 | 111 | 339 | 4 | 24 | 230 | 121 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1891 | 1809 | 1828 | 1809 | 1836 | 1895 | 1836 | 1863 | 1920 | 1863 |
| Adj Flow Rate, veh/h | 135 | 57 | 177 | 10 | 45 | 24 | 119 | 365 | 4 | 26 | 247 | 130 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 267 | 97 | 446 | 77 | 237 | 108 | 259 | 764 | 8 | 94 | 678 | 337 |
| Arrive On Green | 0.26 | 0.28 | 0.28 | 0.26 | 0.28 | 0.26 | 0.57 | 0.59 | 0.57 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 592 | 349 | 1607 | 35 | 855 | 388 | 313 | 1297 | 13 | 51 | 1151 | 572 |
| Grp Volume(v), veh/h | 192 | 0 | 177 | 79 | 0 | 0 | 488 | 0 | 0 | 403 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 941 | 0 | 1607 | 1278 | 0 | 0 | 1623 | 0 | 0 | 1774 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 5.4 | 0.2 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 12.9 | 0.0 | 5.4 | 13.2 | 0.0 | 0.0 | 9.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.70 | | 1.00 | 0.13 | | 0.30 | 0.24 | | 0.01 | 0.06 | | 0.32 |
| Lane Grp Cap(c), veh/h | 348 | 0 | 446 | 401 | 0 | 0 | 1004 | 0 | 0 | 1080 | 0 | 0 |
| V/C Ratio(X) | 0.55 | 0.00 | 0.40 | 0.20 | 0.00 | 0.00 | 0.49 | 0.00 | 0.00 | 0.37 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 404 | 0 | 509 | 464 | 0 | 0 | 1004 | 0 | 0 | 1080 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.99 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 20.2 | 0.0 | 17.6 | 16.7 | 0.0 | 0.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.4 | 0.0 | 0.6 | 0.2 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.8 | 0.0 | 4.4 | 1.9 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 21.6 | 0.0 | 18.2 | 17.0 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| LnGrp LOS | C | | B | B | | | A | | | A | | |
| Approach Vol, veh/h | | 369 | | | 79 | | | 488 | | | 403 | |
| Approach Delay, s/veh | | 19.9 | | | 17.0 | | | 8.7 | | | 1.0 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 39.3 | | 20.7 | | 39.3 | | 20.7 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | 18.0 | | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 11.5 | | 14.9 | | 2.5 | | 15.2 |
| Green Ext Time (p_c), s | | 4.0 | | 0.6 | | 4.3 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.9 |
| HCM 2010 LOS | A |



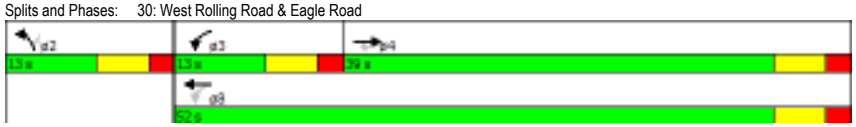
## 30: West Rolling Road & Eagle Road
## 2020 PROJECTED CONDITIONS

Timing Plan: SAT PEAK

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 226 | 69 | 163 | 334 | 102 | 174 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1337 | | | 695 | 679 | |
| Travel Time (s) | 30.4 | | | 15.8 | 15.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 39.0 | 39.0 | 13.0 | 52.0 | 13.0 | 13.0 |
| Total Split (%) | 60.0% | 60.0% | 20.0% | 80.0% | 20.0% | 20.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 65 | |
| Actuated Cycle Length: 39.8 | |
| Natural Cycle: 50 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 30: West Rolling Road & Eagle Road



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 226 | 69 | 163 | 334 | 102 | 174 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1764 | 1764 | 1692 | 1692 |
| Adj Flow Rate, veh/h | 240 | 73 | 173 | 355 | 109 | 185 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Cap, veh/h | 790 | 678 | 161 | 244 | 376 | 336 |
| Arrive On Green | 0.43 | 0.43 | 0.40 | 0.43 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1818 | 1561 | 4 | 563 | 1611 | 1438 |
| Grp Volume(v), veh/h | 240 | 73 | 528 | 0 | 109 | 185 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 1561 | 567 | 0 | 1611 | 1438 |
| Q Serve(g_s), s | 2.6 | 0.8 | 3.6 | 0.0 | 1.7 | 3.4 |
| Cycle Q Clear(g_c), s | 2.6 | 0.8 | 3.6 | 0.0 | 1.7 | 3.4 |
| Prop In Lane | | 1.00 | 0.33 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 790 | 678 | 0 | 0 | 376 | 336 |
| V/C Ratio(X) | 0.30 | 0.11 | 0.00 | 0.00 | 0.29 | 0.55 |
| Avail Cap(c_a), veh/h | 2054 | 1764 | 0 | 0 | 428 | 382 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.5 | 5.0 | 0.0 | 0.0 | 9.5 | 10.1 |
| Incr Delay (d2), s/veh | 0.2 | 0.1 | 0.0 | 0.0 | 0.4 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.6 | 0.0 | 0.0 | 1.4 | 2.6 |
| LnGrp Delay(d),s/veh | 5.8 | 5.1 | 0.0 | 0.0 | 9.9 | 11.6 |
| LnGrp LOS | A | A | | | A | B |
| Approach Vol, veh/h | 313 | | | 528 | 294 | |
| Approach Delay, s/veh | 5.6 | | | 0.0 | 10.9 | |
| Approach LOS | A | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 12.0 | | 18.1 | | | | 18.1 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 7.0 | | 33.0 | | | | 46.0 |
| Max Q Clear Time (g_c+I1), s | | 5.9 | | 5.1 | | | | 5.6 |
| Green Ext Time (p_c), s | | 0.1 | | 6.1 | | | | 6.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.4 |
| HCM 2010 LOS | A |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 716 | 1419 | 3 | 682 | 1377 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1693 | 3319 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1693 | 3319 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 514 | | 565 | | | 405 |
| Travel Time (s) | 14.0 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 738 | 1466 | 0 | 703 | 1420 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 65.0 | 55.0 | | 65.0 | 120.0 |
| Total Split (%) | | 54.2% | 45.8% | | 54.2% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 54.8 | 50.2 | | 54.8 | 120.0 |
| Actuated g/C Ratio | | 0.46 | 0.42 | | 0.46 | 1.00 |
| v/c Ratio | | 0.63 | 1.02 | | 0.91 | 0.43 |
| Control Delay | | 24.6 | 46.5 | | 48.4 | 0.3 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 24.6 | 46.5 | | 48.4 | 0.3 |
| LOS | | C | D | | D | A |
| Approach Delay | | | 46.5 | | | 16.2 |
| Approach LOS | | | D | | | B |
| Queue Length 50th (ft) | | 218 | ~653 | | 538 | 0 |
| Queue Length 95th (ft) | | 285 | m#699 | | m#729 | 0 |
| Internal Link Dist (ft) | 434 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |



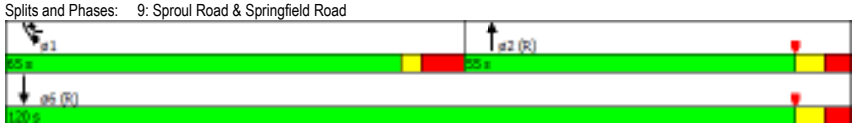


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Base Capacity (vph) | | 1224 | 1436 | | 804 | 3319 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.60 | 1.02 | | 0.87 | 0.43 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 27.9 — Intersection LOS: C
Intersection Capacity Utilization 93.3% — ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 17 | 2187 | 5 | 19 | 2125 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 17 | 2187 | 5 | 19 | 2125 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 17 | 2232 | 5 | 19 | 2168 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3357 | 1120 | 0 | 0 | 2237 | 0 |
| Stage 1 | 2234 | - | - | - | - | - |
| Stage 2 | 1123 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | 4 | 213 | - | - | 256 | - |
| Stage 1 | 54 | - | - | - | - | - |
| Stage 2 | 270 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 4 | 213 | - | - | 256 | - |
| Mov Cap-2 Maneuver | 4 | - | - | - | - | - |
| Stage 1 | 54 | - | - | - | - | - |
| Stage 2 | 250 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 23.4 | 0 | 0.2 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 213 | 256 | - |
| HCM Lane V/C Ratio | - | - | 0.081 | 0.076 | - |
| HCM Control Delay (s) | - | - | 23.4 | 20.2 | - |
| HCM Lane LOS | - | - | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.2 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 52 | 238 | 482 | 28 | 159 | 555 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 52 | 238 | 482 | 28 | 159 | 555 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 55 | 253 | 513 | 30 | 169 | 590 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1442 | 513 | 0 | 0 | 513 | 0 |
| Stage 1 | 513 | - | - | - | - | - |
| Stage 2 | 929 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 184 | 609 | - | - | 799 | - |
| Stage 1 | 720 | - | - | - | - | - |
| Stage 2 | 471 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 126 | 609 | - | - | 799 | - |
| Mov Cap-2 Maneuver | 250 | - | - | - | - | - |
| Stage 1 | 720 | - | - | - | - | - |
| Stage 2 | 323 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 16.6 | 0 | 2.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 250 | 609 | 799 | - |
| HCM Lane V/C Ratio | - | - | 0.221 | 0.416 | 0.212 | - |
| HCM Control Delay (s) | - | - | 23.4 | 15.1 | 10.7 | 0 |
| HCM Lane LOS | - | - | C | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 2 | 0.8 | - |

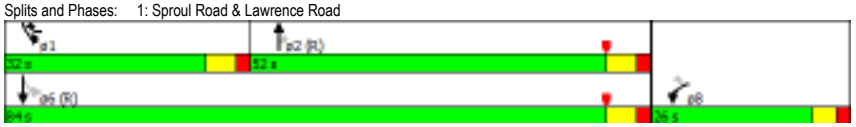
# *2025 BASE CONDITIONS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 288 | 665 | 1248 | 374 | 417 | 779 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 26.0 | 32.0 | 52.0 | 52.0 | 32.0 | 84.0 |
| Total Split (%) | 23.6% | 29.1% | 47.3% | 47.3% | 29.1% | 76.4% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 288 | 665 | 1248 | 374 | 417 | 779 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1713 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 294 | 611 | 1273 | 290 | 426 | 795 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 317 | 611 | 1479 | 690 | 481 | 2481 |
| Arrive On Green | 0.20 | 0.20 | 0.46 | 0.46 | 0.21 | 0.72 |
| Sat Flow, veh/h | 1585 | 1456 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 294 | 611 | 1273 | 290 | 426 | 795 |
| Grp Sat Flow(s),veh/h/ln | 1585 | 1456 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 20.0 | 22.0 | 38.2 | 13.9 | 18.9 | 9.3 |
| Cycle Q Clear(g_c), s | 20.0 | 22.0 | 38.2 | 13.9 | 18.9 | 9.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 317 | 611 | 1479 | 690 | 481 | 2481 |
| V/C Ratio(X) | 0.93 | 1.00 | 0.86 | 0.42 | 0.89 | 0.32 |
| Avail Cap(c_a), veh/h | 317 | 597 | 1499 | 704 | 541 | 2481 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.31 | 0.31 | 0.66 | 0.66 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.6 | 31.6 | 27.1 | 20.3 | 31.3 | 5.7 |
| Incr Delay (d2), s/veh | 13.9 | 20.3 | 4.6 | 1.2 | 15.1 | 0.3 |
| Initial Q Delay(d3),s/veh | 8.9 | 0.0 | 0.6 | 0.0 | 1.1 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.1 | 38.5 | 24.5 | 9.4 | 21.2 | 7.9 |
| LnGrp Delay(d),s/veh | 66.4 | 51.8 | 32.3 | 21.6 | 47.4 | 6.0 |
| LnGrp LOS | E | F | C | C | D | A |
| Approach Vol, veh/h | 905 | | 1563 | | | 1221 |
| Approach Delay, s/veh | 56.6 | | 30.3 | | | 20.5 |
| Approach LOS | E | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.1 | 55.9 | | | | 84.0 | | 26.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 26.0 | 46.0 | | | | 78.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 21.4 | 40.7 | | | | 11.8 | | 24.5 |
| Green Ext Time (p_c), s | 0.7 | 4.2 | | | | 17.9 | | 0.0 |

**Intersection Summary**

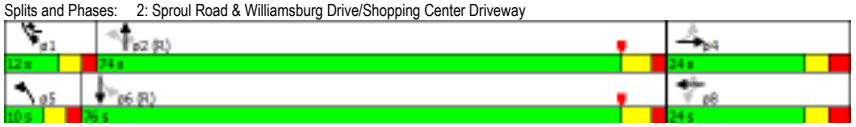
| | |
|---|---|
| HCM 2010 Ctrl Delay | 33.5 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 41 | 16 | 26 | 74 | 6 | 81 | 21 | 1556 | 84 | 86 | 1130 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | 12.0 | 10.0 | 74.0 | 74.0 | 12.0 | 76.0 | |
| Total Split (%) | 21.8% | 21.8% | | 21.8% | 21.8% | 10.9% | 9.1% | 67.3% | 67.3% | 10.9% | 69.1% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 101 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 41 | 16 | 26 | 74 | 6 | 81 | 21 | 1556 | 84 | 86 | 1130 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1713 | 1800 | 1764 | 1739 | 1696 | 1764 | 1696 | 1781 | 1748 | 1712 | 1800 |
| Adj Flow Rate, veh/h | 43 | 17 | 26 | 77 | 6 | 77 | 22 | 1621 | 0 | 90 | 1177 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 3 | 3 | 5 | 5 |
| Cap, veh/h | 93 | 39 | 36 | 203 | 14 | 279 | 393 | 2189 | 1028 | 333 | 2305 | 33 |
| Arrive On Green | 0.14 | 0.15 | 0.14 | 0.14 | 0.15 | 0.15 | 0.04 | 1.00 | 0.00 | 0.06 | 0.93 | 0.92 |
| Sat Flow, veh/h | 296 | 264 | 243 | 943 | 91 | 1442 | 1680 | 3223 | 1514 | 1664 | 3284 | 47 |
| Grp Volume(v), veh/h | 86 | 0 | 0 | 83 | 0 | 77 | 22 | 1621 | 0 | 90 | 583 | 611 |
| Grp Sat Flow(s),veh/h/ln | 804 | 0 | 0 | 1034 | 0 | 1442 | 1680 | 1611 | 1514 | 1664 | 1627 | 1704 |
| Q Serve(g_s), s | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.4 | 0.0 | 0.0 | 1.7 | 5.0 | 5.0 |
| Cycle Q Clear(g_c), s | 13.1 | 0.0 | 0.0 | 8.6 | 0.0 | 5.0 | 0.4 | 0.0 | 0.0 | 1.7 | 5.0 | 5.0 |
| Prop In Lane | 0.50 | | 0.30 | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 161 | 0 | 0 | 207 | 0 | 279 | 393 | 2189 | 1028 | 333 | 1142 | 1196 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.00 | 0.40 | 0.00 | 0.28 | 0.06 | 0.74 | 0.00 | 0.27 | 0.51 | 0.51 |
| Avail Cap(c_a), veh/h | 194 | 0 | 0 | 239 | 0 | 314 | 447 | 2189 | 1028 | 384 | 1142 | 1196 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.40 | 0.40 | 0.00 | 0.87 | 0.87 | 0.87 |
| Uniform Delay (d), s/veh | 46.7 | 0.0 | 0.0 | 43.9 | 0.0 | 37.8 | 4.9 | 0.0 | 0.0 | 4.7 | 1.3 | 1.3 |
| Incr Delay (d2), s/veh | 2.7 | 0.0 | 0.0 | 1.2 | 0.0 | 0.5 | 0.0 | 0.9 | 0.0 | 0.4 | 1.4 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 0.0 | 0.0 | 4.4 | 0.0 | 3.6 | 0.4 | 0.5 | 0.0 | 1.5 | 4.2 | 4.4 |
| LnGrp Delay(d),s/veh | 49.4 | 0.0 | 0.0 | 45.2 | 0.0 | 38.3 | 4.9 | 1.0 | 0.0 | 5.1 | 2.7 | 2.6 |
| LnGrp LOS | D | | | D | | D | A | A | | A | A | A |
| Approach Vol, veh/h | | 86 | | | 160 | | | 1643 | | | 1284 | |
| Approach Delay, s/veh | | 49.4 | | | 41.9 | | | 1.1 | | | 2.8 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.0 | 79.7 | | 21.3 | 6.5 | 82.2 | | 21.3 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 68.0 | | 18.0 | 5.0 | 70.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 2.5 | | 15.1 | 2.9 | 7.5 | | 10.6 |
| Green Ext Time (p_c), s | 0.0 | 24.8 | | 0.3 | 0.0 | 24.5 | | 0.5 |

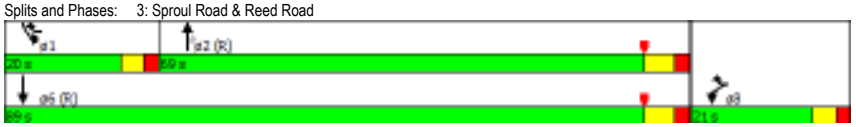
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 5.2 |
| HCM 2010 LOS | A |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 181 | 172 | 1588 | 279 | 164 | 1084 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 404 | | 187 | | | 884 |
| Travel Time (s) | 7.9 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 8% | 10% | 3% | 3% | 6% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 21.0 | | 69.0 | 69.0 | 20.0 | 89.0 |
| Total Split (%) | 19.1% | | 62.7% | 62.7% | 18.2% | 80.9% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 110 | |
| Actuated Cycle Length: 110 | |
| Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 181 | 172 | 1588 | 279 | 164 | 1084 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 1 | 3 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1700 | 1669 | 1713 | 1713 | 1732 | 1765 |
| Adj Flow Rate, veh/h | 199 | 189 | 1745 | 263 | 180 | 1191 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 8 | 10 | 3 | 3 | 6 | 4 |
| Cap, veh/h | 246 | 405 | 1940 | 868 | 221 | 2571 |
| Arrive On Green | 0.15 | 0.15 | 0.60 | 0.60 | 0.27 | 1.00 |
| Sat Flow, veh/h | 1619 | 1419 | 3340 | 1456 | 1650 | 3443 |
| Grp Volume(v), veh/h | 199 | 189 | 1745 | 263 | 180 | 1191 |
| Grp Sat Flow(s),veh/h/ln | 1619 | 1419 | 1627 | 1456 | 1650 | 1677 |
| Q Serve(g_s), s | 13.1 | 12.1 | 51.4 | 9.8 | 11.2 | 0.0 |
| Cycle Q Clear(g_c), s | 13.1 | 12.1 | 51.4 | 9.8 | 11.2 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 246 | 405 | 1940 | 868 | 221 | 2571 |
| V/C Ratio(X) | 0.81 | 0.47 | 0.90 | 0.30 | 0.81 | 0.46 |
| Avail Cap(c_a), veh/h | 250 | 409 | 1940 | 868 | 240 | 2572 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 |
| Uniform Delay (d), s/veh | 45.3 | 32.5 | 19.5 | 10.9 | 39.0 | 0.0 |
| Incr Delay (d2), s/veh | 17.6 | 0.8 | 7.2 | 0.9 | 16.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.6 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.6 | 8.6 | 33.4 | 7.5 | 9.9 | 0.3 |
| LnGrp Delay(d),s/veh | 63.5 | 33.4 | 26.9 | 11.8 | 54.9 | 0.5 |
| LnGrp LOS | E | C | C | B | D | A |
| Approach Vol, veh/h | 388 | | 2008 | | | 1371 |
| Approach Delay, s/veh | 48.9 | | 24.9 | | | 7.7 |
| Approach LOS | D | | C | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 18.7 | 70.6 | | | | 89.3 | | 20.7 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 15.0 | 63.0 | | | | 83.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 13.7 | 53.9 | | | | 2.5 | | 15.6 |
| Green Ext Time (p_c), s | 0.1 | 8.0 | | | | 36.9 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.1 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 817 | 1264 | 0 | 320 | 814 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 860 | 1331 | 0 | 337 | 857 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 57.0 | 63.0 | | 57.0 | 120.0 |
| Total Split (%) | | 47.5% | 52.5% | | 47.5% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 46.1 | 58.9 | | 46.1 | 120.0 |
| Actuated g/C Ratio | | 0.38 | 0.49 | | 0.38 | 1.00 |
| v/c Ratio | | 0.87 | 0.79 | | 0.54 | 0.51 |
| Control Delay | | 44.5 | 30.2 | | 32.0 | 1.1 |
| Queue Delay | | 5.9 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 50.4 | 30.2 | | 32.0 | 1.1 |
| LOS | | D | C | | C | A |
| Approach Delay | | | 30.2 | | | 9.8 |
| Approach LOS | | | C | | | A |
| Queue Length 50th (ft) | | 390 | 345 | | 193 | 0 |
| Queue Length 95th (ft) | | m369 | m298 | | 283 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1052 | 1683 | | 661 | 1672 |
| Starvation Cap Reductn | | 145 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.95 | 0.79 | | 0.51 | 0.51 |

**Intersection Summary**

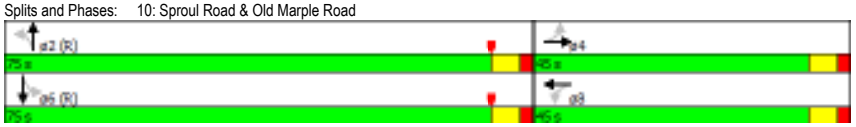
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.2 Intersection LOS: C
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 109 | 76 | 39 | 222 | 244 | 1 | 173 | 1087 | 41 | 1 | 749 | 134 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 45.0 | 45.0 | | 45.0 | 45.0 | | 75.0 | 75.0 | | 75.0 | 75.0 | |
| Total Split (%) | 37.5% | 37.5% | | 37.5% | 37.5% | | 62.5% | 62.5% | | 62.5% | 62.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 109 | 76 | 39 | 222 | 244 | 1 | 173 | 1087 | 41 | 1 | 749 | 134 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1801 | 1818 | 1782 | 1714 | 1782 | 1773 | 1718 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 116 | 81 | 36 | 236 | 260 | 1 | 184 | 1156 | 35 | 1 | 797 | 114 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 |
| Cap, veh/h | 228 | 153 | 61 | 249 | 226 | 1 | 175 | 1265 | 38 | 30 | 1639 | 239 |
| Arrive On Green | 0.32 | 0.33 | 0.32 | 0.32 | 0.33 | 0.32 | 0.57 | 0.58 | 0.57 | 0.57 | 0.58 | 0.57 |
| Sat Flow, veh/h | 549 | 460 | 184 | 614 | 677 | 3 | 242 | 2002 | 67 | 0 | 2876 | 411 |
| Grp Volume(v), veh/h | 233 | 0 | 0 | 497 | 0 | 0 | 565 | 0 | 810 | 488 | 0 | 424 |
| Grp Sat Flow(s),veh/h/ln | 1193 | 0 | 0 | 1293 | 0 | 0 | 759 | 0 | 1552 | 1758 | 0 | 1529 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 49.7 | 0.0 | 54.6 | 0.0 | 0.0 | 19.3 |
| Cycle Q Clear(g_c), s | 19.0 | 0.0 | 0.0 | 39.0 | 0.0 | 0.0 | 69.0 | 0.0 | 54.6 | 19.3 | 0.0 | 19.3 |
| Prop In Lane | 0.50 | | 0.15 | 0.47 | | 0.00 | 0.33 | | 0.04 | 0.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 433 | 0 | 0 | 465 | 0 | 0 | 486 | 0 | 905 | 1003 | 0 | 892 |
| V/C Ratio(X) | 0.54 | 0.00 | 0.00 | 1.07 | 0.00 | 0.00 | 1.16 | 0.00 | 0.89 | 0.49 | 0.00 | 0.48 |
| Avail Cap(c_a), veh/h | 433 | 0 | 0 | 465 | 0 | 0 | 476 | 0 | 905 | 1041 | 0 | 892 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.9 | 0.0 | 0.0 | 42.5 | 0.0 | 0.0 | 35.7 | 0.0 | 21.9 | 14.5 | 0.0 | 14.5 |
| Incr Delay (d2), s/veh | 1.3 | 0.0 | 0.0 | 61.6 | 0.0 | 0.0 | 93.3 | 0.0 | 13.2 | 1.7 | 0.0 | 1.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.3 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.8 | 0.0 | 0.0 | 42.2 | 0.0 | 0.0 | 52.9 | 0.0 | 35.3 | 15.2 | 0.0 | 13.3 |
| LnGrp Delay(d),s/veh | 34.2 | 0.0 | 0.0 | 104.1 | 0.0 | 0.0 | 135.4 | 0.0 | 35.3 | 16.2 | 0.0 | 16.3 |
| LnGrp LOS | C | | | F | | | F | | D | B | | B |
| Approach Vol, veh/h | | 233 | | | 497 | | | 1375 | | | 912 | |
| Approach Delay, s/veh | | 34.2 | | | 104.1 | | | 76.4 | | | 16.3 | |
| Approach LOS | | C | | | F | | | E | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 75.0 | | 45.0 | | 75.0 | | 45.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 69.0 | | 39.0 | | 69.0 | | 39.0 |
| Max Q Clear Time (g_c+I1), s | | 71.0 | | 21.0 | | 21.3 | | 41.0 |
| Green Ext Time (p_c), s | | 0.0 | | 2.9 | | 16.5 | | 0.0 |

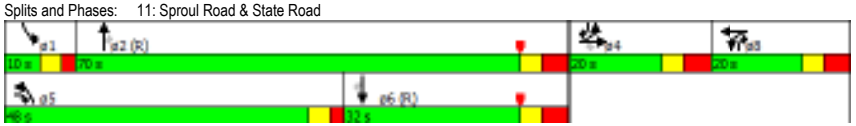
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 59.5 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 270 | 16 | 320 | 169 | 74 | 38 | 490 | 1137 | 332 | 5 | 563 | 397 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 47% | | | 16% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 20.0 | 20.0 | 48.0 | 20.0 | 20.0 | | 48.0 | 70.0 | 20.0 | 10.0 | 32.0 | 20.0 |
| Total Split (%) | 16.7% | 16.7% | 40.0% | 16.7% | 16.7% | | 40.0% | 58.3% | 16.7% | 8.3% | 26.7% | 16.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 270 | 16 | 320 | 169 | 74 | 38 | 490 | 1137 | 332 | 5 | 563 | 397 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1792 | 1844 | 1872 | 1814 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 293 | 0 | 0 | 126 | 146 | 0 | 510 | 1184 | 0 | 5 | 586 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 390 | 0 | 700 | 193 | 196 | 0 | 570 | 1983 | 1040 | 21 | 870 | 560 |
| Arrive On Green | 0.11 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.33 | 0.59 | 0.00 | 0.01 | 0.27 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 293 | 0 | 0 | 126 | 146 | 0 | 510 | 1184 | 0 | 5 | 586 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 9.7 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 34.7 | 26.7 | 0.0 | 0.3 | 18.8 | 0.0 |
| Cycle Q Clear(g_c), s | 9.7 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 34.7 | 26.7 | 0.0 | 0.3 | 18.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 390 | 0 | 700 | 193 | 196 | 0 | 570 | 1983 | 1040 | 21 | 870 | 560 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.00 | 0.65 | 0.74 | 0.00 | 0.90 | 0.60 | 0.00 | 0.24 | 0.67 | 0.00 |
| Avail Cap(c_a), veh/h | 410 | 0 | 696 | 208 | 212 | 0 | 622 | 1983 | 1040 | 86 | 898 | 572 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 51.7 | 0.0 | 0.0 | 51.4 | 51.9 | 0.0 | 38.7 | 15.9 | 0.0 | 58.7 | 39.7 | 0.0 |
| Incr Delay (d2), s/veh | 7.3 | 0.0 | 0.0 | 6.5 | 12.4 | 0.0 | 14.8 | 1.3 | 0.0 | 5.8 | 4.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.8 | 0.0 | 0.0 | 7.8 | 9.2 | 0.0 | 28.0 | 18.7 | 0.0 | 0.4 | 14.2 | 0.0 |
| LnGrp Delay(d),s/veh | 59.0 | 0.0 | 0.0 | 57.8 | 64.3 | 0.0 | 61.1 | 17.2 | 0.0 | 64.5 | 43.8 | 0.0 |
| LnGrp LOS | E | | | E | E | | E | B | | E | D | |
| Approach Vol, veh/h | | 293 | | | 272 | | | 1694 | | | 591 | |
| Approach Delay, s/veh | | 59.0 | | | 61.3 | | | 30.4 | | | 44.0 | |
| Approach LOS | | E | | | E | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 5.5 | 76.3 | | 19.3 | 43.3 | 38.5 | | 19.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 63.0 | | 13.0 | 43.0 | 25.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 29.2 | | 12.2 | 37.2 | 21.3 | | 11.9 |
| Green Ext Time (p_c), s | 0.0 | 10.0 | | 0.1 | 1.1 | 2.6 | | 0.1 |

**Intersection Summary**

HCM 2010 Ctrl Delay 39.1
HCM 2010 LOS D

**Notes**

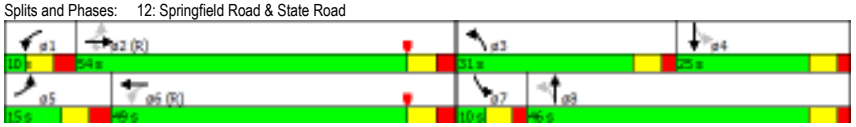
User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 218 | 1034 | 311 | 13 | 1219 | 131 | 492 | 516 | 30 | 104 | 288 | 79 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 10% | 4% | 8% | 25% | 3% | 6% | 3% | 3% | 0% | 2% | 7% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 15.0 | 54.0 | 54.0 | 10.0 | 49.0 | | 31.0 | 46.0 | | 10.0 | 25.0 | |
| Total Split (%) | 12.5% | 45.0% | 45.0% | 8.3% | 40.8% | | 25.8% | 38.3% | | 8.3% | 20.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 218 | 1034 | 311 | 13 | 1219 | 131 | 492 | 516 | 30 | 104 | 288 | 79 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 2 | 0 | 0 | 7 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1685 | 1783 | 1717 | 1397 | 1690 | 1746 | 1756 | 1759 | 1809 | 1791 | 1704 | 1827 |
| Adj Flow Rate, veh/h | 225 | 1066 | 0 | 13 | 1257 | 0 | 507 | 532 | 0 | 107 | 297 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 10 | 4 | 8 | 25 | 3 | 3 | 3 | 3 | 3 | 2 | 7 | 7 |
| Cap, veh/h | 180 | 1407 | 606 | 101 | 1151 | 0 | 422 | 601 | 0 | 145 | 284 | 0 |
| Arrive On Green | 0.08 | 0.42 | 0.00 | 0.02 | 0.36 | 0.00 | 0.22 | 0.34 | 0.00 | 0.08 | 0.33 | 0.00 |
| Sat Flow, veh/h | 1605 | 3387 | 1459 | 1330 | 3296 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Grp Volume(v), veh/h | 225 | 1066 | 0 | 13 | 1257 | 0 | 507 | 532 | 0 | 107 | 297 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1605 | 1694 | 1459 | 1330 | 1606 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Q Serve(g_s), s | 9.0 | 32.2 | 0.0 | 0.7 | 43.0 | 0.0 | 26.0 | 34.2 | 0.0 | 5.0 | 20.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 32.2 | 0.0 | 0.7 | 43.0 | 0.0 | 26.0 | 34.2 | 0.0 | 5.0 | 20.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 180 | 1407 | 606 | 101 | 1151 | 0 | 422 | 601 | 0 | 145 | 284 | 0 |
| V/C Ratio(X) | 1.25 | 0.76 | 0.00 | 0.13 | 1.09 | 0.00 | 1.20 | 0.89 | 0.00 | 0.74 | 1.05 | 0.00 |
| Avail Cap(c_a), veh/h | 180 | 1407 | 606 | 162 | 1151 | 0 | 422 | 601 | 0 | 178 | 284 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.2 | 30.0 | 0.0 | 29.9 | 38.5 | 0.0 | 35.0 | 37.8 | 0.0 | 43.0 | 40.0 | 0.0 |
| Incr Delay (d2), s/veh | 148.9 | 3.9 | 0.0 | 0.6 | 55.4 | 0.0 | 110.9 | 14.7 | 0.0 | 12.0 | 65.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 61.2 | 0.1 | 0.0 | 0.0 | 19.8 | 0.0 | 27.9 | 2.8 | 0.0 | 0.0 | 12.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 28.2 | 22.5 | 0.0 | 0.5 | 53.7 | 0.0 | 52.6 | 27.5 | 0.0 | 3.0 | 27.1 | 0.0 |
| LnGrp Delay(d),s/veh | 242.3 | 33.9 | 0.0 | 30.4 | 113.7 | 0.0 | 173.7 | 55.3 | 0.0 | 55.0 | 117.9 | 0.0 |
| LnGrp LOS | F | C | | C | F | | F | E | | D | F | |
| Approach Vol, veh/h | | 1291 | | | 1270 | | | 1039 | | | 404 | |
| Approach Delay, s/veh | | 70.3 | | | 112.8 | | | 113.1 | | | 101.2 | |
| Approach LOS | | E | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.1 | 55.9 | 31.0 | 25.0 | 15.0 | 49.0 | 10.0 | 46.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 47.0 | 25.0 | 19.0 | 8.0 | 42.0 | 4.0 | 40.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 34.7 | 28.5 | 22.5 | 11.5 | 45.5 | 7.5 | 36.7 |
| Green Ext Time (p_c), s | 0.0 | 8.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 |

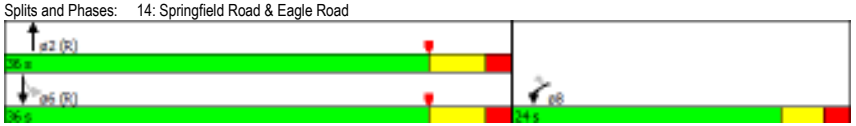
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 98.0 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 591 | 251 | 578 | 282 | 22 | 313 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 24.0 | 24.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (%) | 40.0% | 40.0% | 60.0% | | 60.0% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 59 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 591 | 251 | 578 | 282 | 22 | 313 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1757 | 1791 | 1739 | 1791 | 1809 | 1738 |
| Adj Flow Rate, veh/h | 642 | 200 | 628 | 264 | 24 | 340 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 2 | 4 | 4 |
| Cap, veh/h | 558 | 508 | 766 | 112 | 64 | 494 |
| Arrive On Green | 0.33 | 0.33 | 0.52 | 0.50 | 0.50 | 0.52 |
| Sat Flow, veh/h | 1673 | 1523 | 1164 | 489 | 0 | 956 |
| Grp Volume(v), veh/h | 642 | 200 | 0 | 892 | 364 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1673 | 1523 | 0 | 1653 | 956 | 0 |
| Q Serve(g_s), s | 20.0 | 6.0 | 0.0 | 31.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 20.0 | 6.0 | 0.0 | 31.0 | 30.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.30 | 0.07 | |
| Lane Grp Cap(c), veh/h | 558 | 508 | 0 | 879 | 542 | 0 |
| V/C Ratio(X) | 1.15 | 0.39 | 0.00 | 1.02 | 0.67 | 0.00 |
| Avail Cap(c_a), veh/h | 558 | 508 | 0 | 854 | 542 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.82 | 0.00 |
| Uniform Delay (d), s/veh | 20.0 | 15.3 | 0.0 | 14.6 | 12.6 | 0.0 |
| Incr Delay (d2), s/veh | 87.1 | 0.5 | 0.0 | 34.2 | 5.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 22.1 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 44.7 | 4.6 | 0.0 | 41.5 | 8.4 | 0.0 |
| LnGrp Delay(d),s/veh | 129.2 | 15.8 | 0.0 | 52.8 | 18.0 | 0.0 |
| LnGrp LOS | F | B | | F | B | |
| Approach Vol, veh/h | 842 | | 892 | | 364 | |
| Approach Delay, s/veh | 102.3 | | 52.8 | | 18.0 | |
| Approach LOS | F | | D | | B | |

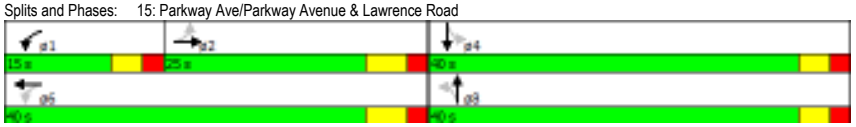
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.0 | | | | 36.0 | | 24.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | | | 30.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 33.0 | | | | 32.0 | | 22.5 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 66.6 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 807 | 109 | 143 | 550 | 5 | 408 | 16 | 379 | 8 | 11 | 7 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 582 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 15.9 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | | 10.0 | 15.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 25.0 | 25.0 | | 15.0 | 40.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 31.3% | 31.3% | | 18.8% | 50.0% | | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 71 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 807 | 109 | 143 | 550 | 5 | 408 | 16 | 379 | 8 | 11 | 7 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1716 | 1791 | 1791 | 1629 | 1791 | 1721 | 1735 | 1773 | 1827 | 1744 | 1827 |
| Adj Flow Rate, veh/h | 1 | 832 | 112 | 147 | 567 | 2 | 421 | 16 | 331 | 8 | 11 | 0 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 46 | 1270 | 171 | 73 | 695 | 3 | 494 | 197 | 605 | 165 | 200 | 0 |
| Arrive On Green | 0.44 | 0.45 | 0.44 | 0.44 | 0.45 | 0.44 | 0.43 | 0.43 | 0.42 | 0.42 | 0.43 | 0.00 |
| Sat Flow, veh/h | 0 | 2830 | 381 | 3 | 1549 | 7 | 1292 | 68 | 1416 | 317 | 584 | 0 |
| Grp Volume(v), veh/h | 505 | 0 | 440 | 260 | 0 | 456 | 421 | 0 | 347 | 19 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1716 | 0 | 1495 | 76 | 0 | 1482 | 1292 | 0 | 1485 | 901 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 17.7 | 32.5 | 0.0 | 18.8 | 14.9 | 0.0 | 13.6 | 0.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.8 | 0.0 | 17.7 | 32.5 | 0.0 | 18.8 | 28.2 | 0.0 | 13.6 | 13.8 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.25 | 0.57 | | 0.00 | 1.00 | | 0.95 | 0.42 | | 0.00 |
| Lane Grp Cap(c), veh/h | 794 | 0 | 671 | 0 | 0 | 665 | 494 | 0 | 640 | 355 | 0 | 0 |
| V/C Ratio(X) | 0.64 | 0.00 | 0.66 | 0.00 | 0.00 | 0.69 | 0.85 | 0.00 | 0.54 | 0.05 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 802 | 0 | 677 | 0 | 0 | 672 | 617 | 0 | 692 | 489 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 16.9 | 0.0 | 16.9 | 0.0 | 0.0 | 17.1 | 24.2 | 0.0 | 16.8 | 15.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.6 | 0.0 | 2.3 | 0.0 | 0.0 | 2.9 | 9.2 | 0.0 | 0.7 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.0 | 0.0 | 12.4 | 0.0 | 0.0 | 13.0 | 15.4 | 0.0 | 9.7 | 0.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 18.5 | 0.0 | 19.2 | 0.0 | 0.0 | 20.0 | 33.6 | 0.0 | 17.6 | 15.1 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | B | C | | B | B | | |
| Approach Vol, veh/h | | 945 | | | 716 | | | 768 | | | 19 | |
| Approach Delay, s/veh | | 18.8 | | | 12.7 | | | 26.4 | | | 15.1 | |
| Approach LOS | | B | | | B | | | C | | | B | |

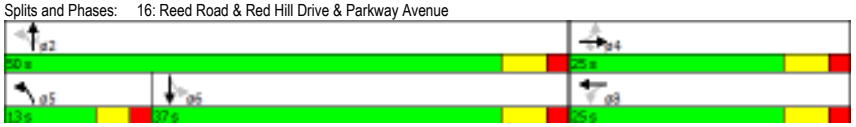
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 37.2 | | 40.0 | | 37.2 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 19.0 | | 35.0 | | 34.0 | | 35.0 |
| Max Q Clear Time (g_c+I1), s | | 19.8 | | 15.8 | | 34.5 | | 30.7 |
| Green Ext Time (p_c), s | | 0.0 | | 3.5 | | 0.0 | | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 60 | 56 | 264 | 32 | 89 | 4 | 258 | 723 | 125 | 4 | 195 | 33 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | | 13.0 | 50.0 | 50.0 | 37.0 | 37.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | | 17.3% | 66.7% | 66.7% | 49.3% | 49.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 59.9 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 60 | 56 | 264 | 32 | 89 | 4 | 258 | 723 | 125 | 4 | 195 | 33 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1618 | 1680 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1812 | 1836 |
| Adj Flow Rate, veh/h | 62 | 58 | 231 | 33 | 92 | 4 | 266 | 745 | 117 | 4 | 201 | 31 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 259 | 203 | 356 | 152 | 338 | 13 | 708 | 924 | 809 | 80 | 423 | 64 |
| Arrive On Green | 0.23 | 0.25 | 0.25 | 0.23 | 0.25 | 0.23 | 0.18 | 0.54 | 0.54 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 575 | 815 | 1428 | 229 | 1368 | 51 | 1500 | 1713 | 1499 | 8 | 1516 | 230 |
| Grp Volume(v), veh/h | 120 | 0 | 231 | 129 | 0 | 0 | 266 | 745 | 117 | 236 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1389 | 0 | 1428 | 1648 | 0 | 0 | 1500 | 1713 | 1499 | 1755 | 0 | 0 |
| Q Serve(g_s), s | 0.2 | 0.0 | 6.8 | 0.0 | 0.0 | 0.0 | 5.0 | 16.7 | 1.8 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.0 | 0.0 | 6.8 | 2.8 | 0.0 | 0.0 | 5.0 | 16.7 | 1.8 | 5.3 | 0.0 | 0.0 |
| Prop In Lane | 0.52 | | 1.00 | 0.26 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.13 |
| Lane Grp Cap(c), veh/h | 432 | 0 | 356 | 468 | 0 | 0 | 708 | 924 | 809 | 530 | 0 | 0 |
| V/C Ratio(X) | 0.28 | 0.00 | 0.65 | 0.28 | 0.00 | 0.00 | 0.38 | 0.81 | 0.14 | 0.45 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 662 | 0 | 605 | 739 | 0 | 0 | 730 | 1633 | 1430 | 1215 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 14.7 | 0.0 | 16.0 | 14.5 | 0.0 | 0.0 | 7.1 | 8.9 | 5.5 | 14.3 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 2.0 | 0.3 | 0.0 | 0.0 | 0.3 | 1.7 | 0.1 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.0 | 5.3 | 2.6 | 0.0 | 0.0 | 3.8 | 12.8 | 1.4 | 4.9 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 15.0 | 0.0 | 18.1 | 14.8 | 0.0 | 0.0 | 7.4 | 10.6 | 5.5 | 14.9 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | B | A | B | | |
| Approach Vol, veh/h | | 351 | | | 129 | | | 1128 | | | 236 | |
| Approach Delay, s/veh | | 17.1 | | | 14.8 | | | 9.3 | | | 14.9 | |
| Approach LOS | | B | | | B | | | A | | | B | |

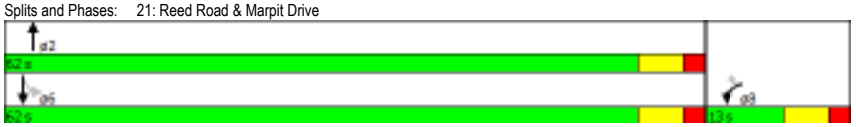
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.5 | | 16.7 | 12.3 | 18.2 | | 16.7 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 44.0 | | 19.0 | 8.0 | 31.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 19.2 | | 9.3 | 7.5 | 7.3 | | 4.8 |
| Green Ext Time (p_c), s | | 4.9 | | 1.4 | 0.1 | 4.8 | | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.9 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 80 | 30 | 1072 | 224 | 44 | 226 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 50% | 14% | 1% | 6% | 19% | 7% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 13.0 | 13.0 | 62.0 | | 62.0 | 62.0 |
| Total Split (%) | 17.3% | 17.3% | 82.7% | | 82.7% | 82.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 78.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 80 | 30 | 1072 | 224 | 44 | 226 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1200 | 1579 | 1767 | 1800 | 1513 | 1682 |
| Adj Flow Rate, veh/h | 84 | 29 | 1128 | 225 | 46 | 238 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 50 | 14 | 1 | 1 | 19 | 7 |
| Cap, veh/h | 122 | 143 | 1171 | 146 | 97 | 1279 |
| Arrive On Green | 0.11 | 0.11 | 0.76 | 0.75 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1143 | 1342 | 1431 | 285 | 326 | 1682 |
| Grp Volume(v), veh/h | 84 | 29 | 0 | 1353 | 46 | 238 |
| Grp Sat Flow(s),veh/h/ln | 1143 | 1342 | 0 | 1717 | 326 | 1682 |
| Q Serve(g_s), s | 5.3 | 1.5 | 0.0 | 57.0 | 0.5 | 3.0 |
| Cycle Q Clear(g_c), s | 5.3 | 1.5 | 0.0 | 57.0 | 57.0 | 3.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.17 | 1.00 | |
| Lane Grp Cap(c), veh/h | 122 | 143 | 0 | 1317 | 97 | 1279 |
| V/C Ratio(X) | 0.69 | 0.20 | 0.00 | 1.03 | 0.47 | 0.19 |
| Avail Cap(c_a), veh/h | 122 | 143 | 0 | 1305 | 98 | 1279 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.3 | 30.6 | 0.0 | 9.1 | 37.5 | 2.5 |
| Incr Delay (d2), s/veh | 15.1 | 0.7 | 0.0 | 32.0 | 3.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.9 | 1.0 | 0.0 | 69.8 | 1.9 | 2.4 |
| LnGrp Delay(d),s/veh | 47.4 | 31.3 | 0.0 | 46.4 | 41.0 | 2.6 |
| LnGrp LOS | D | C | | F | D | A |
| Approach Vol, veh/h | 113 | | 1353 | | | 284 |
| Approach Delay, s/veh | 43.3 | | 46.4 | | | 8.8 |
| Approach LOS | D | | D | | | A |

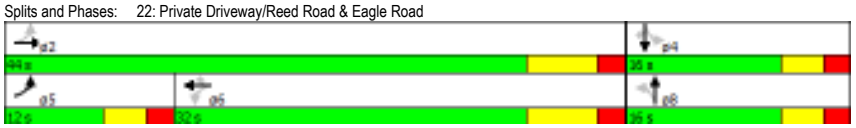
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.0 | | | | 62.0 | | 13.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 56.0 | | | | 56.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | | 59.0 | | | | 59.5 | | 7.8 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 40.1 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 437 | 145 | 2 | 2 | 420 | 858 | 5 | 3 | 3 | 232 | 3 | 66 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 44.0 | | 32.0 | 32.0 | 32.0 | 16.0 | 16.0 | | 16.0 | 16.0 | 16.0 |
| Total Split (%) | 20.0% | 73.3% | | 53.3% | 53.3% | 53.3% | 26.7% | 26.7% | | 26.7% | 26.7% | 26.7% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 57.9 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 437 | 145 | 2 | 2 | 420 | 858 | 5 | 3 | 3 | 232 | 3 | 66 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1773 | 1646 | 1790 |
| Adj Flow Rate, veh/h | 465 | 154 | 2 | 2 | 447 | 819 | 5 | 3 | 3 | 247 | 3 | 61 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 66 | 66 | 3 |
| Cap, veh/h | 397 | 1113 | 14 | 61 | 734 | 630 | 87 | 41 | 15 | 296 | 2 | 304 |
| Arrive On Green | 0.13 | 0.63 | 0.62 | 0.42 | 0.43 | 0.43 | 0.18 | 0.20 | 0.18 | 0.18 | 0.20 | 0.20 |
| Sat Flow, veh/h | 1782 | 1757 | 23 | 1 | 1694 | 1455 | 0 | 204 | 76 | 882 | 11 | 1522 |
| Grp Volume(v), veh/h | 465 | 0 | 156 | 449 | 0 | 819 | 11 | 0 | 0 | 250 | 0 | 61 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 280 | 0 | 0 | 892 | 0 | 1522 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.1 | 0.0 | 0.0 | 26.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.1 | 12.4 | 0.0 | 26.0 | 11.0 | 0.0 | 0.0 | 11.0 | 0.0 | 2.0 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 0.99 | | 1.00 |
| Lane Grp Cap(c), veh/h | 397 | 0 | 1128 | 766 | 0 | 630 | 139 | 0 | 0 | 283 | 0 | 304 |
| V/C Ratio(X) | 1.17 | 0.00 | 0.14 | 0.59 | 0.00 | 1.30 | 0.08 | 0.00 | 0.00 | 0.88 | 0.00 | 0.20 |
| Avail Cap(c_a), veh/h | 460 | 0 | 1128 | 766 | 0 | 630 | 139 | 0 | 0 | 283 | 0 | 304 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.2 | 0.0 | 4.4 | 13.2 | 0.0 | 17.0 | 20.3 | 0.0 | 0.0 | 26.0 | 0.0 | 20.0 |
| Incr Delay (d2), s/veh | 100.5 | 0.0 | 0.1 | 1.6 | 0.0 | 146.0 | 0.2 | 0.0 | 0.0 | 26.3 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 37.7 | 0.0 | 0.0 | 0.0 | 0.0 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 36.7 | 0.0 | 1.9 | 10.4 | 0.0 | 67.6 | 0.3 | 0.0 | 0.0 | 10.3 | 0.0 | 1.5 |
| LnGrp Delay(d),s/veh | 152.5 | 0.0 | 4.5 | 14.7 | 0.0 | 176.0 | 20.5 | 0.0 | 0.0 | 52.3 | 0.0 | 20.3 |
| LnGrp LOS | F | | A | B | | F | C | | | D | | C |
| Approach Vol, veh/h | | 621 | | | 1268 | | | 11 | | | 311 | |
| Approach Delay, s/veh | | 115.3 | | | 118.9 | | | 20.5 | | | 46.0 | |
| Approach LOS | | F | | | F | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 44.0 | | 16.0 | 12.0 | 32.0 | | 16.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 37.0 | | 11.0 | 7.0 | 25.0 | | 11.0 |
| Max Q Clear Time (g_c+I1), s | | 4.1 | | 13.0 | 10.5 | 28.5 | | 13.0 |
| Green Ext Time (p_c), s | | 15.5 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 107.2 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 27 | 35 | 60 | 2257 | 1115 | 35 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 488 | 187 | |
| Travel Time (s) | 28.2 | | | 8.3 | 3.2 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 9.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 27 | 35 | 60 | 2257 | 1115 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 28 | 36 | 61 | 2303 | 1138 | 36 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2430 | 587 | 1173 | 0 | - | 0 |
| Stage 1 | 1156 | - | - | - | - | - |
| Stage 2 | 1274 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 19 | *744 | 891 | - | - | - |
| Stage 1 | *764 | - | - | - | - | - |
| Stage 2 | *159 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 18 | *744 | 891 | - | - | - |
| Mov Cap-2 Maneuver | *~ 18 | - | - | - | - | - |
| Stage 1 | *764 | - | - | - | - | - |
| Stage 2 | *148 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 510.8 | 0.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 891 | - | 40 | - | - |
| HCM Lane V/C Ratio | 0.069 | - | 1.582 | - | - |
| HCM Control Delay (s) | 9.3 | - | $ 510.8 | - | - |
| HCM Lane LOS | A | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 6.5 | - | - |

| Notes |
|---|

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 0 | 6 | 0 | 0 | 0 | 18 | 2257 | 22 | 6 | 1224 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 1 | | 1 | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 6% | 4% | 10% | 17% | 5% | 50% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 0 | 6 | 0 | 0 | 0 | 18 | 2257 | 22 | 6 | 1224 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 | 17 | 5 | 50 |
| Mvmt Flow | 4 | 0 | 6 | 0 | 0 | 0 | 19 | 2351 | 23 | 6 | 1275 | 2 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2501 | 3699 | 639 | 3050 | 3688 | 1187 | 1275 | 0 | 0 | 2374 | 0 | 0 |
| Stage 1 | 1288 | 1288 | - | 2400 | 2400 | - | - | - | - | - | - | - |
| Stage 2 | 1213 | 2411 | - | 650 | 1288 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.8 | 7.2 | 7.8 | 5.9 | 6.9 | 4 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.8 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.9 | 4 | 2.9 | 2.5 | - | - | 2.6 | - | - |
| Pot Cap-1 Maneuver | *9 | *3 | *659 | *5 | *9 | *153 | *766 | - | - | *171 | - | - |
| Stage 1 | *683 | *478 | - | *153 | *111 | - | - | - | - | - | - | - |
| Stage 2 | *159 | *111 | - | *660 | *478 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *9 | *3 | *659 | *5 | *8 | *153 | *765 | - | - | *171 | - | - |
| Mov Cap-2 Maneuver | *9 | *3 | - | *5 | *8 | - | - | - | - | - | - | - |
| Stage 1 | *666 | *462 | - | *150 | *108 | - | - | - | - | - | - | - |
| Stage 2 | *155 | *108 | - | *630 | *462 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 271.3 | 0 | 0.1 | 0.1 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 765 | - | - | 22 | - | * 171 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | - | 0.473 | - | 0.037 | - | - |
| HCM Control Delay (s) | 9.8 | - | - | 271.3 | 0 | 26.9 | - | - |
| HCM Lane LOS | A | - | - | F | A | D | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.4 | - | 0.1 | - | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 0 | 0 | 2205 | 1400 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 263 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 4% | 6% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 2205 | 1400 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 4 | 6 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 2371 | 1505 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2690 | 753 | 1505 | 0 | - | 0 |
| Stage 1 | 1505 | - | - | - | - | - |
| Stage 2 | 1185 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *10 | *596 | *721 | - | - | - |
| Stage 1 | *617 | - | - | - | - | - |
| Stage 2 | *189 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *10 | *596 | *721 | - | - | - |
| Mov Cap-2 Maneuver | *135 | - | - | - | - | - |
| Stage 1 | *617 | - | - | - | - | - |
| Stage 2 | *189 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 721 | - | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 49 | 2255 | 57 | 68 | 1178 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 49 | 2255 | 57 | 68 | 1178 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 54 | 2506 | 63 | 76 | 1309 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3343 | 1284 | 0 | 0 | 2569 | 0 |
| Stage 1 | 2537 | - | - | - | - | - |
| Stage 2 | 806 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | *4 | *143 | - | - | *178 | - |
| Stage 1 | *159 | - | - | - | - | - |
| Stage 2 | *716 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *4 | *143 | - | - | *178 | - |
| Mov Cap-2 Maneuver | *4 | - | - | - | - | - |
| Stage 1 | *159 | - | - | - | - | - |
| Stage 2 | *716 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 44.9 | 0 | 18.8 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 143 | * 178 | - |
| HCM Lane V/C Ratio | - | - | 0.381 | 0.424 | - |
| HCM Control Delay (s) | - | - | 44.9 | 39.4 | 17.6 |
| HCM Lane LOS | - | - | E | E | C |
| HCM 95th %tile Q(veh) | - | - | 1.6 | 1.9 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 44 | 50 | 60 | 781 | 458 | 420 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 44 | 50 | 60 | 781 | 458 | 420 |
| Conflicting Peds, #/hr | 0 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 11 | 2 | 4 | 5 | 5 |
| Mvmt Flow | 45 | 52 | 62 | 805 | 472 | 433 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1618 | 690 | 905 | 0 | - | 0 |
| Stage 1 | 689 | - | - | - | - | - |
| Stage 2 | 929 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.31 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.2 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *123 | 531 | 488 | - | - | - |
| Stage 1 | *598 | - | - | - | - | - |
| Stage 2 | *445 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *95 | 531 | 487 | - | - | - |
| Mov Cap-2 Maneuver | *95 | - | - | - | - | - |
| Stage 1 | *598 | - | - | - | - | - |
| Stage 2 | *342 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 51.6 | 1 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 487 | - | 169 | - | - |
| HCM Lane V/C Ratio | 0.127 | - | 0.573 | - | - |
| HCM Control Delay (s) | 13.5 | 0 | 51.6 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 3 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 129 | 385 | 327 | 58 | 26 | 63 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 404 | 326 | | 533 | |
| Travel Time (s) | | 7.9 | 6.4 | | 14.5 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 5% | 8% | 17% | 0% | 10% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 129 | 385 | 327 | 58 | 26 | 63 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 5 | 8 | 17 | 0 | 10 |
| Mvmt Flow | 137 | 410 | 348 | 62 | 28 | 67 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 411 | 0 | - | 0 | 859 | 380 |
| Stage 1 | - | - | - | - | 380 | - |
| Stage 2 | - | - | - | - | 479 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1099 | - | - | - | 294 | 690 |
| Stage 1 | - | - | - | - | 764 | - |
| Stage 2 | - | - | - | - | 632 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1099 | - | - | - | 246 | 689 |
| Mov Cap-2 Maneuver | - | - | - | - | 246 | - |
| Stage 1 | - | - | - | - | 763 | - |
| Stage 2 | - | - | - | - | 530 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.5 | 0 | 15.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1099 | - | - | - | 451 |
| HCM Lane V/C Ratio | 0.125 | - | - | - | 0.21 |
| HCM Control Delay (s) | 8.7 | 0.4 | - | - | 15.1 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.8 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 48 | 392 | 386 | 63 | 41 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 326 | 284 | | 215 | |
| Travel Time (s) | | 6.4 | 5.5 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 2 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 6% | 9% | 5% | 3% | 8% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 48 | 392 | 386 | 63 | 41 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 2 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 6 | 9 | 5 | 3 | 8 |
| Mvmt Flow | 52 | 422 | 415 | 68 | 44 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 485 | 0 | - | 0 | 765 | 451 |
| Stage 1 | - | - | - | - | 451 | - |
| Stage 2 | - | - | - | - | 314 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.6 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | 1038 | - | - | - | 347 | 630 |
| Stage 1 | - | - | - | - | 692 | - |
| Stage 2 | - | - | - | - | 808 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1038 | - | - | - | 323 | 629 |
| Mov Cap-2 Maneuver | - | - | - | - | 323 | - |
| Stage 1 | - | - | - | - | 691 | - |
| Stage 2 | - | - | - | - | 754 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 16.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1038 | - | - | - | 366 |
| HCM Lane V/C Ratio | 0.05 | - | - | - | 0.159 |
| HCM Control Delay (s) | 8.7 | 0.2 | - | - | 16.7 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.6 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 4 | 102 | 1018 | 29 | 192 | 290 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 102 | 1018 | 29 | 192 | 290 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 4 | 104 | 1039 | 30 | 196 | 296 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1727 | 1039 | 0 | 0 | 1039 | 0 |
| Stage 1 | 1039 | - | - | - | - | - |
| Stage 2 | 688 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 117 | 279 | - | - | 554 | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 586 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 68 | 279 | - | - | 554 | - |
| Mov Cap-2 Maneuver | 198 | - | - | - | - | - |
| Stage 1 | 402 | - | - | - | - | - |
| Stage 2 | 338 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 26.3 | 0 | 6 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 275 | 554 | - |
| HCM Lane V/C Ratio | - | - | 0.393 | 0.354 | - |
| HCM Control Delay (s) | - | - | 26.3 | 15 | 0 |
| HCM Lane LOS | - | - | D | C | A |
| HCM 95th %tile Q(veh) | - | - | 1.8 | 1.6 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 55 | 215 | 717 | 142 | 55 | 102 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Heavy Vehicles (%) | 15% | 8% | 3% | 8% | 19% | 17% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 22.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 55 | 215 | 717 | 142 | 55 | 102 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 15 | 8 | 3 | 8 | 19 | 17 |
| Mvmt Flow | 74 | 291 | 969 | 192 | 74 | 138 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1161 | 0 | - | 0 | 1504 | 580 |
| Stage 1 | - | - | - | - | 1065 | - |
| Stage 2 | - | - | - | - | 439 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.4 | 7.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.2 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 613 | - | - | - | 96 | 455 |
| Stage 1 | - | - | - | - | 257 | - |
| Stage 2 | - | - | - | - | 673 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 613 | - | - | - | 84 | 455 |
| Mov Cap-2 Maneuver | - | - | - | - | 84 | - |
| Stage 1 | - | - | - | - | 257 | - |
| Stage 2 | - | - | - | - | 592 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.4 | 0 | 178.4 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 613 | - | - | - | 179 |
| HCM Lane V/C Ratio | 0.121 | - | - | - | 1.185 |
| HCM Control Delay (s) | 11.7 | - | - | - | 178.4 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 11.2 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 59 | 17 | 34 | 19 | 22 | 29 | 51 | 648 | 2 | 19 | 181 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 196 | | | 212 | | | 402 | | | 582 | |
| Travel Time (s) | | 5.3 | | | 5.8 | | | 11.0 | | | 15.9 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 38.9 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 59 | 17 | 34 | 0 | 19 | 22 | 29 | 0 | 51 | 648 | 2 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 16 | 13 | 13 | 2 | 6 | 0 | 0 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 0 | 63 | 18 | 36 | 0 | 20 | 23 | 31 | 0 | 54 | 689 | 2 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.4 | 10.8 | 55.6 |
| HCM LOS | B | B | F |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 7% | 78% | 0% | 27% | 7% |
| Vol Thru, % | 92% | 22% | 0% | 31% | 71% |
| Vol Right, % | 0% | 0% | 100% | 41% | 22% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 701 | 76 | 34 | 70 | 255 |
| LT Vol | 51 | 59 | 0 | 19 | 19 |
| Through Vol | 648 | 17 | 0 | 22 | 181 |
| RT Vol | 2 | 0 | 34 | 29 | 55 |
| Lane Flow Rate | 746 | 81 | 36 | 74 | 271 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 1 | 0.172 | 0.066 | 0.138 | 0.416 |
| Departure Headway (Hd) | 5.012 | 7.769 | 6.617 | 6.688 | 5.525 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 731 | 465 | 543 | 538 | 654 |
| Service Time | 3.026 | 5.469 | 4.331 | 4.702 | 3.532 |
| HCM Lane V/C Ratio | 1.021 | 0.174 | 0.066 | 0.138 | 0.414 |
| HCM Control Delay | 55.6 | 12.1 | 9.8 | 10.8 | 12.4 |
| HCM Lane LOS | F | B | A | B | B |
| HCM 95th-tile Q | 16.4 | 0.6 | 0.2 | 0.5 | 2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 19 | 181 | 55 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 20 | 193 | 59 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 12.4 |
| HCM LOS | B |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 247 | 28 | 44 | 460 | 253 | 330 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1529 | | | 503 | 393 | |
| Travel Time (s) | 34.8 | | | 11.4 | 8.9 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 79.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 247 | 28 | 44 | 460 | 253 | 330 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 6 | 0 | 2 | 4 | 4 | 1 |
| Mvmt Flow | 284 | 32 | 51 | 529 | 291 | 379 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 285 | 0 | 915 | 285 |
| Stage 1 | - | - | - | - | 285 | - |
| Stage 2 | - | - | - | - | 630 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.84 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.84 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 959 | - | ~ 181 | 728 |
| Stage 1 | - | - | - | - | 725 | - |
| Stage 2 | - | - | - | - | 391 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 959 | - | ~ 167 | 727 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 167 | - |
| Stage 1 | - | - | - | - | 724 | - |
| Stage 2 | - | - | - | - | 362 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 184.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 167 | 727 | - | - | 959 | - |
| HCM Lane V/C Ratio | 1.741 | 0.522 | - | - | 0.053 | - |
| HCM Control Delay (s) | $ 404.8 | 15.2 | - | - | 9 | 0 |
| HCM Lane LOS | F | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 20.7 | 3.1 | - | - | 0.2 | - |

**Notes**

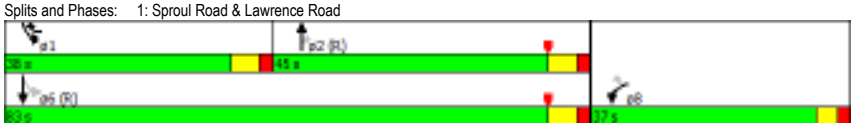
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 447 | 600 | 1068 | 348 | 552 | 1465 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 37.0 | 38.0 | 45.0 | 45.0 | 38.0 | 83.0 |
| Total Split (%) | 30.8% | 31.7% | 37.5% | 37.5% | 31.7% | 69.2% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 447 | 600 | 1068 | 348 | 552 | 1465 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 466 | 563 | 1112 | 278 | 575 | 1526 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 457 | 817 | 1123 | 523 | 555 | 2335 |
| Arrive On Green | 0.28 | 0.28 | 0.67 | 0.67 | 0.28 | 0.65 |
| Sat Flow, veh/h | 1663 | 1485 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 466 | 563 | 1112 | 278 | 575 | 1526 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 33.0 | 33.0 | 38.8 | 11.0 | 33.0 | 31.0 |
| Cycle Q Clear(g_c), s | 33.0 | 33.0 | 38.8 | 11.0 | 33.0 | 31.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 457 | 817 | 1123 | 523 | 555 | 2335 |
| V/C Ratio(X) | 1.02 | 0.69 | 0.99 | 0.53 | 1.04 | 0.65 |
| Avail Cap(c_a), veh/h | 457 | 817 | 1123 | 523 | 559 | 2335 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.20 | 0.20 | 0.75 | 0.75 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.5 | 19.6 | 20.0 | 15.2 | 36.9 | 12.8 |
| Incr Delay (d2), s/veh | 23.6 | 0.5 | 21.1 | 2.9 | 47.7 | 1.4 |
| Initial Q Delay(d3),s/veh | 22.9 | 0.0 | 5.2 | 0.0 | 30.7 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 35.6 | 16.2 | 28.8 | 8.3 | 51.3 | 22.2 |
| LnGrp Delay(d),s/veh | 90.0 | 20.1 | 46.2 | 18.1 | 115.4 | 14.2 |
| LnGrp LOS | F | C | D | B | F | B |
| Approach Vol, veh/h | 1029 | | 1390 | | | 2101 |
| Approach Delay, s/veh | 51.7 | | 40.6 | | | 41.9 |
| Approach LOS | D | | D | | | D |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 38.0 | 45.0 | | | | 83.0 | | 37.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 32.0 | 39.0 | | | | 77.0 | | 32.0 |
| Max Q Clear Time (g_c+I1), s | 35.5 | 41.3 | | | | 33.5 | | 35.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 23.3 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 43.7
HCM 2010 LOS D

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 26 | 259 | 14 | 221 | 19 | 1146 | 132 | 196 | 1846 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 21.0 | 10.0 | 64.0 | 64.0 | 21.0 | 75.0 | |
| Total Split (%) | 29.2% | 29.2% | | 29.2% | 29.2% | 17.5% | 8.3% | 53.3% | 53.3% | 17.5% | 62.5% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 13 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 26 | 259 | 14 | 221 | 19 | 1146 | 132 | 196 | 1846 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1773 | 1800 | 1764 | 1764 | 1747 | 1764 | 1747 | 1835 | 1800 | 1782 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 26 | 264 | 14 | 208 | 19 | 1169 | 0 | 200 | 1884 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 40 | 37 | 22 | 207 | 8 | 511 | 181 | 1775 | 834 | 306 | 2106 | 20 |
| Arrive On Green | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | 0.25 | 0.01 | 0.18 | 0.00 | 0.16 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 147 | 87 | 593 | 31 | 1460 | 1680 | 3318 | 1559 | 1714 | 3435 | 35 |
| Grp Volume(v), veh/h | 70 | 0 | 0 | 278 | 0 | 208 | 19 | 1169 | 0 | 200 | 927 | 976 |
| Grp Sat Flow(s),veh/h/ln | 234 | 0 | 0 | 625 | 0 | 1460 | 1680 | 1659 | 1559 | 1714 | 1693 | 1776 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.4 | 0.6 | 39.1 | 0.0 | 5.8 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 29.0 | 0.0 | 0.0 | 29.0 | 0.0 | 13.4 | 0.6 | 39.1 | 0.0 | 5.8 | 0.0 | 0.0 |
| Prop In Lane | 0.33 | | 0.37 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 96 | 0 | 0 | 209 | 0 | 511 | 181 | 1775 | 834 | 306 | 1038 | 1089 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.00 | 1.33 | 0.00 | 0.41 | 0.10 | 0.66 | 0.00 | 0.65 | 0.89 | 0.90 |
| Avail Cap(c_a), veh/h | 96 | 0 | 0 | 209 | 0 | 484 | 268 | 1836 | 863 | 408 | 1038 | 1089 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.63 | 0.63 | 0.00 | 0.59 | 0.59 | 0.59 |
| Uniform Delay (d), s/veh | 38.1 | 0.0 | 0.0 | 49.1 | 0.0 | 29.8 | 16.6 | 39.2 | 0.0 | 18.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 23.8 | 0.0 | 0.0 | 176.4 | 0.0 | 0.5 | 0.2 | 1.2 | 0.0 | 1.4 | 7.4 | 7.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.3 | 0.2 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 0.0 | 0.0 | 31.0 | 0.0 | 9.1 | 0.5 | 24.0 | 0.0 | 6.6 | 3.9 | 4.0 |
| LnGrp Delay(d),s/veh | 61.9 | 0.0 | 0.0 | 225.5 | 0.0 | 30.3 | 16.7 | 40.4 | 0.0 | 20.9 | 7.7 | 7.5 |
| LnGrp LOS | E | | | F | | C | B | D | | C | A | A |
| Approach Vol, veh/h | | 70 | | | 486 | | | 1188 | | | 2103 | |
| Approach Delay, s/veh | | 61.9 | | | 142.0 | | | 40.1 | | | 8.9 | |
| Approach LOS | | E | | | F | | | D | | | A | |

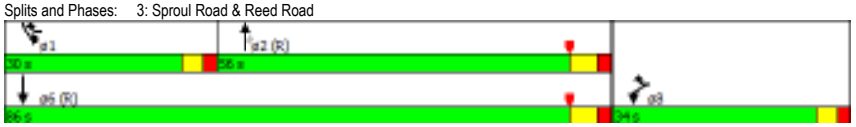
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.6 | 71.4 | | 35.0 | 6.5 | 78.5 | | 35.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 16.0 | 58.0 | | 29.0 | 5.0 | 69.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 8.3 | 41.6 | | 31.0 | 3.1 | 2.5 | | 31.0 |
| Green Ext Time (p_c), s | 0.4 | 12.8 | | 0.0 | 0.0 | 30.3 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 36.3 |
| HCM 2010 LOS | | D |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 319 | 159 | 1109 | 252 | 271 | 1744 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 413 | | 187 | | | 884 |
| Travel Time (s) | 8.0 | | 3.2 | | | 15.1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 34.0 | | 56.0 | 56.0 | 30.0 | 86.0 |
| Total Split (%) | 28.3% | | 46.7% | 46.7% | 25.0% | 71.7% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 84 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 3: Sproul Road & Reed Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 319 | 159 | 1109 | 252 | 271 | 1744 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 3 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1747 | 1818 | 1818 |
| Adj Flow Rate, veh/h | 343 | 171 | 1192 | 197 | 291 | 1875 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 392 | 662 | 1552 | 694 | 344 | 2413 |
| Arrive On Green | 0.23 | 0.23 | 0.47 | 0.47 | 0.13 | 0.47 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1485 | 1731 | 3545 |
| Grp Volume(v), veh/h | 343 | 171 | 1192 | 197 | 291 | 1875 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1485 | 1731 | 1727 |
| Q Serve(g_s), s | 22.9 | 8.5 | 35.7 | 9.7 | 19.7 | 54.5 |
| Cycle Q Clear(g_c), s | 22.9 | 8.5 | 35.7 | 9.7 | 19.7 | 54.5 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 392 | 662 | 1552 | 694 | 344 | 2413 |
| V/C Ratio(X) | 0.87 | 0.26 | 0.77 | 0.28 | 0.84 | 0.78 |
| Avail Cap(c_a), veh/h | 433 | 696 | 1557 | 696 | 375 | 2413 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.36 | 0.36 |
| Uniform Delay (d), s/veh | 44.8 | 22.4 | 26.5 | 19.6 | 50.6 | 24.2 |
| Incr Delay (d2), s/veh | 16.7 | 0.2 | 3.7 | 1.0 | 6.0 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.6 | 6.7 | 24.0 | 7.6 | 14.0 | 31.5 |
| LnGrp Delay(d),s/veh | 61.5 | 22.6 | 30.3 | 20.6 | 60.1 | 25.1 |
| LnGrp LOS | E | C | C | C | E | C |
| Approach Vol, veh/h | 514 | | 1389 | | | 2166 |
| Approach Delay, s/veh | 48.5 | | 28.9 | | | 29.8 |
| Approach LOS | D | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 27.5 | 61.3 | | | | 88.8 | | 31.2 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 25.0 | 50.0 | | | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 22.2 | 38.2 | | | | 57.0 | | 25.4 |
| Green Ext Time (p_c), s | 0.3 | 10.2 | | | | 17.9 | | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.9 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 512 | 1026 | 6 | 734 | 1592 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 528 | 1064 | 0 | 757 | 1641 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 43.0 | 32.0 | | 43.0 | 75.0 |
| Total Split (%) | | 57.3% | 42.7% | | 57.3% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 35.0 | 25.0 | | 35.0 | 75.0 |
| Actuated g/C Ratio | | 0.47 | 0.33 | | 0.47 | 1.00 |
| v/c Ratio | | 0.44 | 0.93 | | 0.99 | 0.97 |
| Control Delay | | 12.5 | 39.2 | | 53.2 | 19.1 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 12.5 | 39.2 | | 53.2 | 19.1 |
| LOS | | B | D | | D | B |
| Approach Delay | | | 39.2 | | | 29.9 |
| Approach LOS | | | D | | | C |
| Queue Length 50th (ft) | | 107 | 265 | | 333 | 0 |
| Queue Length 95th (ft) | | m120 | m270 | | #575 | #201 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1202 | 1143 | | 763 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.44 | 0.93 | | 0.99 | 0.97 |

**Intersection Summary**

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 70 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 30.1 — Intersection LOS: C
Intersection Capacity Utilization 94.3% — ICU Level of Service F
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 158 | 170 | 56 | 157 | 146 | 13 | 75 | 894 | 62 | 4 | 1206 | 150 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 4 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 158 | 170 | 56 | 157 | 146 | 13 | 75 | 894 | 62 | 4 | 1206 | 150 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1882 | 1818 | 1782 | 1756 | 1782 | 1773 | 1750 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 165 | 177 | 46 | 164 | 152 | 11 | 78 | 931 | 53 | 4 | 1256 | 127 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 242 | 222 | 53 | 241 | 194 | 13 | 80 | 1075 | 67 | 49 | 1662 | 168 |
| Arrive On Green | 0.31 | 0.32 | 0.31 | 0.31 | 0.32 | 0.31 | 0.53 | 0.54 | 0.53 | 0.53 | 0.54 | 0.53 |
| Sat Flow, veh/h | 540 | 689 | 165 | 525 | 602 | 39 | 72 | 2204 | 141 | 2 | 3084 | 310 |
| Grp Volume(v), veh/h | 388 | 0 | 0 | 327 | 0 | 0 | 472 | 0 | 590 | 735 | 0 | 652 |
| Grp Sat Flow(s),veh/h/ln | 1395 | 0 | 0 | 1166 | 0 | 0 | 849 | 0 | 1567 | 1805 | 0 | 1591 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 16.1 | 0.0 | 20.7 | 0.0 | 0.0 | 23.7 |
| Cycle Q Clear(g_c), s | 20.2 | 0.0 | 0.0 | 20.7 | 0.0 | 0.0 | 39.8 | 0.0 | 20.7 | 23.8 | 0.0 | 23.7 |
| Prop In Lane | 0.43 | | 0.12 | 0.50 | | 0.03 | 0.17 | | 0.09 | 0.01 | | 0.19 |
| Lane Grp Cap(c), veh/h | 499 | 0 | 0 | 432 | 0 | 0 | 103 | 0 | 855 | 1003 | 0 | 867 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.00 | 0.76 | 0.00 | 0.00 | 4.57 | 0.00 | 0.69 | 0.73 | 0.00 | 0.75 |
| Avail Cap(c_a), veh/h | 516 | 0 | 0 | 447 | 0 | 0 | 507 | 0 | 854 | 1007 | 0 | 867 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.1 | 0.0 | 0.0 | 24.1 | 0.0 | 0.0 | 28.2 | 0.0 | 14.1 | 13.3 | 0.0 | 13.3 |
| Incr Delay (d2), s/veh | 7.2 | 0.0 | 0.0 | 7.0 | 0.0 | 0.0 | 1626.6 | 0.0 | 4.5 | 4.7 | 0.0 | 6.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.7 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | 84.0 | 0.0 | 18.8 | 19.7 | 0.0 | 17.5 |
| LnGrp Delay(d),s/veh | 31.3 | 0.0 | 0.0 | 31.2 | 0.0 | 0.0 | 1654.8 | 0.0 | 18.6 | 18.0 | 0.0 | 19.3 |
| LnGrp LOS | C | | | C | | | F | | B | B | | B |
| Approach Vol, veh/h | | 388 | | | 327 | | | 1062 | | | 1387 | |
| Approach Delay, s/veh | | 31.3 | | | 31.2 | | | 745.5 | | | 18.6 | |
| Approach LOS | | C | | | C | | | F | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 45.8 | | 29.2 | | 45.8 | | 29.2 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 39.0 | | 24.0 | | 39.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 41.8 | | 22.2 | | 25.8 | | 22.7 |
| Green Ext Time (p_c), s | | 0.0 | | 0.6 | | 9.0 | | 0.5 |

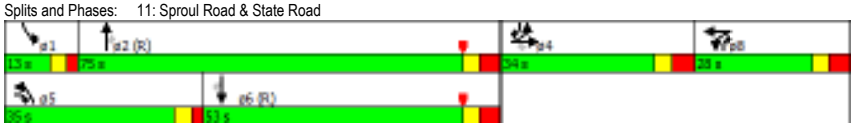
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 265.4 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 309 | 88 | 752 | 322 | 160 | 30 | 325 | 699 | 326 | 37 | 1056 | 408 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 36% | | | 21% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 34.0 | 34.0 | 35.0 | 28.0 | 28.0 | | 35.0 | 75.0 | 28.0 | 13.0 | 53.0 | 34.0 |
| Total Split (%) | 22.7% | 22.7% | 23.3% | 18.7% | 18.7% | | 23.3% | 50.0% | 18.7% | 8.7% | 35.3% | 22.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 309 | 88 | 752 | 322 | 160 | 30 | 325 | 699 | 326 | 37 | 1056 | 408 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1812 | 1844 | 1872 | 1851 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 205 | 251 | 0 | 248 | 282 | 0 | 335 | 721 | 0 | 38 | 1089 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 287 | 317 | 598 | 261 | 272 | 0 | 351 | 1716 | 981 | 64 | 1061 | 757 |
| Arrive On Green | 0.16 | 0.16 | 0.00 | 0.15 | 0.15 | 0.00 | 0.21 | 0.51 | 0.00 | 0.04 | 0.34 | 0.00 |
| Sat Flow, veh/h | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 205 | 251 | 0 | 248 | 282 | 0 | 335 | 721 | 0 | 38 | 1089 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 1812 | 1568 | 1783 | 1851 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 16.6 | 20.2 | 0.0 | 20.7 | 22.0 | 0.0 | 29.3 | 20.0 | 0.0 | 3.3 | 47.1 | 0.0 |
| Cycle Q Clear(g_c), s | 16.6 | 20.2 | 0.0 | 20.7 | 22.0 | 0.0 | 29.3 | 20.0 | 0.0 | 3.3 | 47.1 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 287 | 317 | 598 | 261 | 272 | 0 | 351 | 1716 | 981 | 64 | 1061 | 757 |
| V/C Ratio(X) | 0.72 | 0.79 | 0.00 | 0.95 | 1.04 | 0.00 | 0.96 | 0.42 | 0.00 | 0.59 | 1.03 | 0.00 |
| Avail Cap(c_a), veh/h | 328 | 338 | 617 | 261 | 272 | 0 | 351 | 1716 | 1000 | 103 | 1143 | 757 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.6 | 59.3 | 0.0 | 63.4 | 64.0 | 0.0 | 58.8 | 23.3 | 0.0 | 71.1 | 51.5 | 0.0 |
| Incr Delay (d2), s/veh | 6.2 | 11.5 | 0.0 | 41.6 | 65.0 | 0.0 | 36.3 | 0.8 | 0.0 | 8.5 | 34.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.6 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.6 | 16.4 | 0.0 | 19.2 | 29.1 | 0.0 | 24.1 | 14.8 | 0.0 | 3.1 | 51.7 | 0.0 |
| LnGrp Delay(d),s/veh | 66.1 | 70.8 | 0.0 | 105.1 | 129.0 | 0.0 | 95.1 | 24.1 | 0.0 | 79.6 | 105.7 | 0.0 |
| LnGrp LOS | E | E | | F | F | | F | C | | E | F | |
| Approach Vol, veh/h | | 456 | | | 530 | | | 1056 | | | 1127 | |
| Approach Delay, s/veh | | 68.7 | | | 117.8 | | | 46.6 | | | 104.8 | |
| Approach LOS | | E | | | F | | | D | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.6 | 82.0 | | 30.4 | 35.0 | 56.6 | | 28.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 68.0 | | 27.0 | 30.0 | 46.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 5.8 | 22.5 | | 22.7 | 31.8 | 49.6 | | 24.5 |
| Green Ext Time (p_c), s | 0.0 | 10.7 | | 0.7 | 0.0 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 82.4
HCM 2010 LOS F

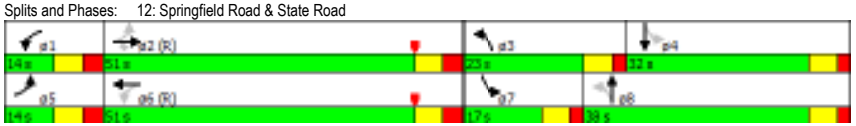
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 186 | 1412 | 543 | 38 | 1209 | 78 | 368 | 367 | 43 | 233 | 402 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 14.0 | 51.0 | 51.0 | 14.0 | 51.0 | | 23.0 | 38.0 | | 17.0 | 32.0 | |
| Total Split (%) | 11.7% | 42.5% | 42.5% | 11.7% | 42.5% | | 19.2% | 31.7% | | 14.2% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 186 | 1412 | 543 | 38 | 1209 | 78 | 368 | 367 | 43 | 233 | 402 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1807 | 1827 |
| Adj Flow Rate, veh/h | 188 | 1426 | 0 | 38 | 1221 | 0 | 372 | 371 | 0 | 235 | 406 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 177 | 1423 | 637 | 114 | 1232 | 0 | 316 | 493 | 0 | 232 | 406 | 0 |
| Arrive On Green | 0.07 | 0.41 | 0.00 | 0.03 | 0.38 | 0.00 | 0.15 | 0.28 | 0.00 | 0.10 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Grp Volume(v), veh/h | 188 | 1426 | 0 | 38 | 1221 | 0 | 372 | 371 | 0 | 235 | 406 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Q Serve(g_s), s | 8.0 | 49.0 | 0.0 | 1.7 | 44.4 | 0.0 | 18.0 | 22.7 | 0.0 | 12.0 | 27.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 49.0 | 0.0 | 1.7 | 44.4 | 0.0 | 18.0 | 22.7 | 0.0 | 12.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 177 | 1423 | 637 | 114 | 1232 | 0 | 316 | 493 | 0 | 232 | 406 | 0 |
| V/C Ratio(X) | 1.06 | 1.00 | 0.00 | 0.33 | 0.99 | 0.00 | 1.18 | 0.75 | 0.00 | 1.01 | 1.00 | 0.00 |
| Avail Cap(c_a), veh/h | 179 | 1423 | 637 | 168 | 1232 | 0 | 316 | 493 | 0 | 316 | 406 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.0 | 35.5 | 0.0 | 29.9 | 37.4 | 0.0 | 35.5 | 40.0 | 0.0 | 35.5 | 46.5 | 0.0 |
| Incr Delay (d2), s/veh | 86.0 | 24.3 | 0.0 | 1.7 | 23.7 | 0.0 | 107.9 | 6.4 | 0.0 | 48.6 | 44.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 73.1 | 7.6 | 0.0 | 0.0 | 0.5 | 0.0 | 19.1 | 0.5 | 0.0 | 15.5 | 17.2 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 22.1 | 52.5 | 0.0 | 1.4 | 32.3 | 0.0 | 37.8 | 18.3 | 0.0 | 6.6 | 27.4 | 0.0 |
| LnGrp Delay(d),s/veh | 191.2 | 67.4 | 0.0 | 31.6 | 61.6 | 0.0 | 162.6 | 46.9 | 0.0 | 99.6 | 108.0 | 0.0 |
| LnGrp LOS | F | F | | C | E | | F | D | | F | F | |
| Approach Vol, veh/h | | 1614 | | | 1259 | | | 743 | | | 641 | |
| Approach Delay, s/veh | | 81.8 | | | 60.7 | | | 104.8 | | | 104.9 | |
| Approach LOS | | F | | | E | | | F | | | F | |

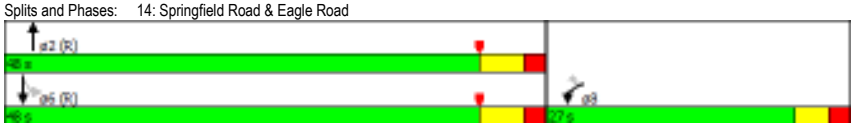
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 55.0 | 23.0 | 32.0 | 14.0 | 51.0 | 17.0 | 38.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 44.0 | 17.0 | 26.0 | 7.0 | 44.0 | 11.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 51.5 | 20.5 | 29.5 | 10.5 | 46.9 | 14.5 | 25.2 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 83.1 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 390 | 57 | 347 | 379 | 162 | 482 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 27.0 | 27.0 | 48.0 | | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | 64.0% | | 64.0% | 64.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 13 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 390 | 57 | 347 | 379 | 162 | 482 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1809 | 1809 | 1774 | 1791 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 411 | 42 | 365 | 352 | 171 | 507 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 1 | 1 |
| Cap, veh/h | 482 | 451 | 488 | 470 | 135 | 350 |
| Arrive On Green | 0.28 | 0.28 | 0.60 | 0.59 | 0.59 | 0.60 |
| Sat Flow, veh/h | 1723 | 1537 | 831 | 802 | 151 | 630 |
| Grp Volume(v), veh/h | 411 | 42 | 0 | 717 | 678 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1723 | 1537 | 0 | 1633 | 781 | 0 |
| Q Serve(g_s), s | 16.9 | 1.5 | 0.0 | 23.6 | 20.4 | 0.0 |
| Cycle Q Clear(g_c), s | 16.9 | 1.5 | 0.0 | 23.6 | 44.1 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.49 | 0.25 | |
| Lane Grp Cap(c), veh/h | 482 | 451 | 0 | 958 | 449 | 0 |
| V/C Ratio(X) | 0.85 | 0.09 | 0.00 | 0.75 | 1.51 | 0.00 |
| Avail Cap(c_a), veh/h | 528 | 471 | 0 | 981 | 519 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.11 | 0.00 |
| Uniform Delay (d), s/veh | 25.6 | 19.3 | 0.0 | 11.7 | 22.6 | 0.0 |
| Incr Delay (d2), s/veh | 11.9 | 0.1 | 0.0 | 5.3 | 231.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.8 | 1.2 | 0.0 | 18.0 | 67.0 | 0.0 |
| LnGrp Delay(d),s/veh | 37.7 | 19.3 | 0.0 | 17.0 | 253.6 | 0.0 |
| LnGrp LOS | D | B | | B | F | |
| Approach Vol, veh/h | 453 | | 717 | | 678 | |
| Approach Delay, s/veh | 36.0 | | 17.0 | | 253.6 | |
| Approach LOS | D | | B | | F | |

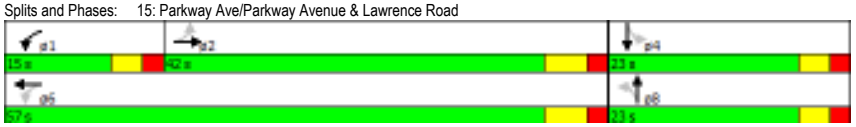
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 50.1 | | | | 50.1 | | 24.9 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | | | 42.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 25.6 | | | | 46.1 | | 19.4 |
| Green Ext Time (p_c), s | | 7.1 | | | | 0.0 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 108.5 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 7 | 576 | 236 | 380 | 772 | 5 | 270 | 23 | 237 | 6 | 40 | 14 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 598 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 42.0 | 42.0 | | 15.0 | 57.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 52.5% | 52.5% | | 18.8% | 71.3% | | 28.8% | 28.8% | | 28.8% | 28.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 77.3 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 576 | 236 | 380 | 772 | 5 | 270 | 23 | 237 | 6 | 40 | 14 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1811 | 1827 |
| Adj Flow Rate, veh/h | 7 | 594 | 234 | 392 | 796 | 5 | 278 | 24 | 149 | 6 | 41 | 5 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 50 | 1516 | 591 | 92 | 1035 | 6 | 400 | 50 | 309 | 70 | 353 | 40 |
| Arrive On Green | 0.64 | 0.65 | 0.64 | 0.64 | 0.65 | 0.64 | 0.24 | 0.24 | 0.22 | 0.22 | 0.24 | 0.22 |
| Sat Flow, veh/h | 7 | 2332 | 910 | 3 | 1592 | 10 | 1276 | 210 | 1302 | 83 | 1486 | 167 |
| Grp Volume(v), veh/h | 457 | 0 | 378 | 392 | 0 | 801 | 278 | 0 | 173 | 52 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1779 | 0 | 1469 | 3 | 0 | 1602 | 1276 | 0 | 1512 | 1736 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 9.9 | 80.0 | 0.0 | 28.0 | 15.1 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.7 | 0.0 | 9.9 | 80.0 | 0.0 | 28.0 | 16.5 | 0.0 | 7.9 | 1.8 | 0.0 | 0.0 |
| Prop In Lane | 0.02 | | 0.62 | 1.00 | | 0.01 | 1.00 | | 0.86 | 0.12 | | 0.10 |
| Lane Grp Cap(c), veh/h | 1180 | 0 | 955 | 0 | 0 | 1041 | 400 | 0 | 359 | 441 | 0 | 0 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.40 | 0.00 | 0.00 | 0.77 | 0.70 | 0.00 | 0.48 | 0.12 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1180 | 0 | 955 | 0 | 0 | 1041 | 400 | 0 | 359 | 441 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.6 | 0.0 | 6.8 | 0.0 | 0.0 | 9.8 | 29.3 | 0.0 | 26.7 | 24.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.3 | 0.0 | 0.0 | 3.6 | 5.2 | 0.0 | 1.0 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.6 | 0.0 | 7.2 | 0.0 | 0.0 | 19.2 | 10.7 | 0.0 | 6.1 | 1.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 6.8 | 0.0 | 7.0 | 0.0 | 0.0 | 13.4 | 34.5 | 0.0 | 27.7 | 24.2 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | C | | |
| Approach Vol, veh/h | | 835 | | | 1193 | | | 451 | | | 52 | |
| Approach Delay, s/veh | | 6.9 | | | 9.0 | | | 31.9 | | | 24.2 | |
| Approach LOS | | A | | | A | | | C | | | C | |

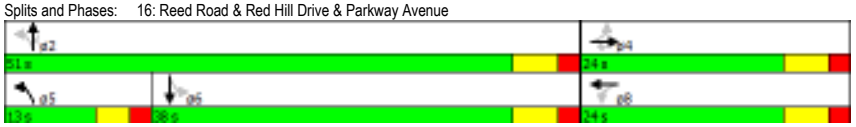
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 57.0 | | 23.0 | | 57.0 | | 23.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 18.0 | | 51.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 11.9 | | 3.8 | | 82.0 | | 19.0 |
| Green Ext Time (p_c), s | | 12.0 | | 1.8 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.7 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 38 | 123 | 314 | 38 | 44 | 11 | 332 | 426 | 66 | 5 | 622 | 45 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 287 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.6 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | | 13.0 | 51.0 | 51.0 | 38.0 | 38.0 | |
| Total Split (%) | 32.0% | 32.0% | 32.0% | 32.0% | 32.0% | | 17.3% | 68.0% | 68.0% | 50.7% | 50.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 72.3 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 38 | 123 | 314 | 38 | 44 | 11 | 332 | 426 | 66 | 5 | 622 | 45 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1751 | 1729 | 1836 | 1794 | 1836 | 1713 | 1764 | 1680 | 1836 | 1905 | 1836 |
| Adj Flow Rate, veh/h | 40 | 129 | 269 | 40 | 46 | 11 | 349 | 448 | 63 | 5 | 655 | 43 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 123 | 334 | 346 | 148 | 153 | 29 | 466 | 1093 | 885 | 54 | 763 | 48 |
| Arrive On Green | 0.22 | 0.23 | 0.23 | 0.22 | 0.23 | 0.22 | 0.13 | 0.62 | 0.62 | 0.42 | 0.43 | 0.42 |
| Sat Flow, veh/h | 248 | 1414 | 1464 | 332 | 669 | 128 | 1631 | 1764 | 1428 | 3 | 1763 | 115 |
| Grp Volume(v), veh/h | 169 | 0 | 269 | 97 | 0 | 0 | 349 | 448 | 63 | 703 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1662 | 0 | 1464 | 1130 | 0 | 0 | 1631 | 1764 | 1428 | 1881 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 11.9 | 0.7 | 0.0 | 0.0 | 7.5 | 8.9 | 1.2 | 2.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.7 | 0.0 | 11.9 | 6.4 | 0.0 | 0.0 | 7.5 | 8.9 | 1.2 | 23.8 | 0.0 | 0.0 |
| Prop In Lane | 0.24 | | 1.00 | 0.41 | | 0.11 | 1.00 | | 1.00 | 0.01 | | 0.06 |
| Lane Grp Cap(c), veh/h | 433 | 0 | 346 | 315 | 0 | 0 | 466 | 1093 | 885 | 837 | 0 | 0 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.78 | 0.31 | 0.00 | 0.00 | 0.75 | 0.41 | 0.07 | 0.84 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 497 | 0 | 404 | 376 | 0 | 0 | 472 | 1178 | 954 | 926 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.5 | 0.0 | 24.9 | 21.9 | 0.0 | 0.0 | 9.2 | 6.7 | 5.2 | 18.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 8.0 | 0.5 | 0.0 | 0.0 | 6.4 | 0.2 | 0.0 | 6.4 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.2 | 0.0 | 9.8 | 3.0 | 0.0 | 0.0 | 7.5 | 7.8 | 0.9 | 20.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 23.1 | 0.0 | 34.0 | 22.5 | 0.0 | 0.0 | 15.6 | 7.0 | 5.3 | 24.8 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | B | A | A | C | | |
| Approach Vol, veh/h | | 438 | | | 97 | | | 860 | | | 703 | |
| Approach Delay, s/veh | | 29.8 | | | 22.5 | | | 10.3 | | | 24.8 | |
| Approach LOS | | C | | | C | | | B | | | C | |

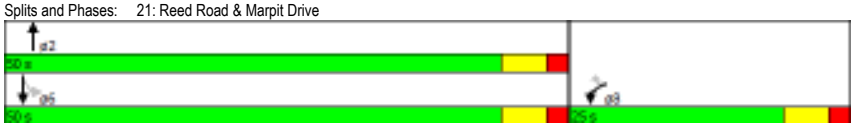
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 47.7 | | 21.2 | 13.0 | 34.7 | | 21.2 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 45.0 | | 18.0 | 8.0 | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 11.4 | | 14.4 | 10.0 | 25.8 | | 8.4 |
| Green Ext Time (p_c), s | | 5.8 | | 0.8 | 0.0 | 2.8 | | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.8 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 307 | 89 | 433 | 122 | 41 | 820 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 1% | 15% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 25.0 | 25.0 | 50.0 | | 50.0 | 50.0 |
| Total Split (%) | 33.3% | 33.3% | 66.7% | | 66.7% | 66.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 64.1 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 307 | 89 | 433 | 122 | 41 | 820 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1731 | 1782 | 1769 | 1800 | 1565 | 1782 |
| Adj Flow Rate, veh/h | 323 | 87 | 456 | 120 | 43 | 863 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 4 | 1 | 2 | 2 | 15 | 1 |
| Cap, veh/h | 420 | 386 | 775 | 204 | 378 | 1023 |
| Arrive On Green | 0.25 | 0.25 | 0.57 | 0.56 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1648 | 1515 | 1350 | 355 | 701 | 1782 |
| Grp Volume(v), veh/h | 323 | 87 | 0 | 576 | 43 | 863 |
| Grp Sat Flow(s),veh/h/ln | 1648 | 1515 | 0 | 1706 | 701 | 1782 |
| Q Serve(g_s), s | 10.6 | 2.7 | 0.0 | 12.8 | 2.4 | 23.4 |
| Cycle Q Clear(g_c), s | 10.6 | 2.7 | 0.0 | 12.8 | 14.7 | 23.4 |
| Prop In Lane | 1.00 | 1.00 | | 0.21 | 1.00 | |
| Lane Grp Cap(c), veh/h | 420 | 386 | 0 | 979 | 378 | 1023 |
| V/C Ratio(X) | 0.77 | 0.23 | 0.00 | 0.59 | 0.11 | 0.84 |
| Avail Cap(c_a), veh/h | 563 | 517 | 0 | 1311 | 515 | 1370 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.2 | 17.2 | 0.0 | 8.1 | 12.6 | 10.3 |
| Incr Delay (d2), s/veh | 4.5 | 0.3 | 0.0 | 0.6 | 0.1 | 3.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.2 | 2.1 | 0.0 | 10.1 | 0.9 | 18.1 |
| LnGrp Delay(d),s/veh | 24.7 | 17.5 | 0.0 | 8.7 | 12.7 | 14.1 |
| LnGrp LOS | C | B | | A | B | B |
| Approach Vol, veh/h | 410 | | 576 | | | 906 |
| Approach Delay, s/veh | 23.2 | | 8.7 | | | 14.0 |
| Approach LOS | C | | A | | | B |

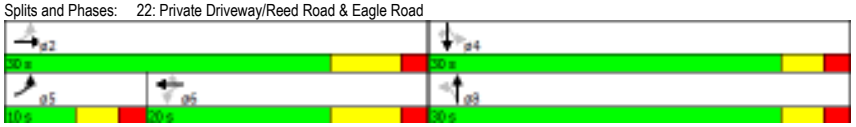
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 38.6 | | | | 38.6 | | 19.9 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 44.0 | | | | 44.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 14.8 | | | | 25.9 | | 13.1 |
| Green Ext Time (p_c), s | | 7.8 | | | | 6.7 | | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 139 | 382 | 0 | 1 | 284 | 418 | 0 | 0 | 0 | 648 | 1 | 435 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | | | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 10.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 30.0 | 30.0 | | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 16.7% | 50.0% | | 33.3% | 33.3% | 33.3% | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 139 | 382 | 0 | 1 | 284 | 418 | 0 | 0 | 0 | 648 | 1 | 435 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1844 |
| Adj Flow Rate, veh/h | 145 | 398 | 0 | 1 | 296 | 350 | 0 | 0 | 0 | 675 | 1 | 418 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cap, veh/h | 358 | 756 | 0 | 60 | 403 | 342 | 0 | 823 | 0 | 628 | 152 | 679 |
| Arrive On Green | 0.10 | 0.40 | 0.00 | 0.22 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.42 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1466 | 0 | 1900 | 0 | 1302 | 2 | 1567 |
| Grp Volume(v), veh/h | 145 | 398 | 0 | 297 | 0 | 350 | 0 | 0 | 0 | 676 | 0 | 418 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1304 | 0 | 1567 |
| Q Serve(g_s), s | 3.3 | 9.6 | 0.0 | 0.0 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 12.4 |
| Cycle Q Clear(g_c), s | 3.3 | 9.6 | 0.0 | 9.7 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 12.4 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 358 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 673 | 0 | 679 |
| V/C Ratio(X) | 0.41 | 0.53 | 0.00 | 0.68 | 0.00 | 1.02 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.62 |
| Avail Cap(c_a), veh/h | 361 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 663 | 0 | 679 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.4 | 13.7 | 0.0 | 21.4 | 0.0 | 23.0 | 0.0 | 0.0 | 0.0 | 19.5 | 0.0 | 13.1 |
| Incr Delay (d2), s/veh | 0.7 | 1.1 | 0.0 | 5.2 | 0.0 | 54.7 | 0.0 | 0.0 | 0.0 | 35.8 | 0.0 | 1.7 |
| Initial Q Delay(d3),s/veh | 0.4 | 0.0 | 0.0 | 0.1 | 0.0 | 20.3 | 0.0 | 0.0 | 0.0 | 10.7 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.1 | 8.9 | 0.0 | 9.2 | 0.0 | 21.4 | 0.0 | 0.0 | 0.0 | 34.2 | 0.0 | 9.6 |
| LnGrp Delay(d),s/veh | 15.5 | 14.7 | 0.0 | 26.7 | 0.0 | 98.0 | 0.0 | 0.0 | 0.0 | 65.9 | 0.0 | 14.8 |
| LnGrp LOS | B | B | | C | | F | | | | F | | B |
| Approach Vol, veh/h | | 543 | | | 647 | | | 0 | | | 1094 | |
| Approach Delay, s/veh | | 14.9 | | | 65.3 | | | 0.0 | | | 46.4 | |
| Approach LOS | | B | | | E | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.0 | | 30.0 | 10.0 | 20.0 | | 30.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 23.0 | | 25.0 | 5.0 | 13.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 12.1 | | 27.0 | 5.8 | 16.5 | | 0.0 |
| Green Ext Time (p_c), s | | 5.3 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.3 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 17 | 51 | 49 | 1416 | 2333 | 110 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 501 | 187 | |
| Travel Time (s) | 28.2 | | | 8.5 | 3.2 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 6% | 3% | 7% | 4% | 3% |
| Parking (#/hr) | | | 0 | | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 48.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 17 | 51 | 49 | 1416 | 2333 | 110 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 6 | 3 | 7 | 4 | 3 |
| Mvmt Flow | 18 | 53 | 51 | 1475 | 2430 | 115 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3328 | 1272 | 2545 | 0 | - | 0 |
| Stage 1 | 2488 | - | - | - | - | - |
| Stage 2 | 840 | - | - | - | - | - |
| Critical Hdwy | 7.4 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.4 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 4 | *219 | 186 | - | - | - |
| Stage 1 | *178 | - | - | - | - | - |
| Stage 2 | *596 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 3 | *219 | 186 | - | - | - |
| Mov Cap-2 Maneuver | *~ 3 | - | - | - | - | - |
| Stage 1 | *178 | - | - | - | - | - |
| Stage 2 | *433 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 2827.2 | 1.1 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 186 | - | 12 | - | - |
| HCM Lane V/C Ratio | 0.274 | - | 5.903 | - | - |
| HCM Control Delay (s) | 31.5 | | $ 2827.2 | - | - |
| HCM Lane LOS | D | - | F | - | - |
| HCM 95th %tile Q(veh) | 1.1 | - | 10 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1433 | 5 | 3 | 2383 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 491 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.4 | |
| Confl. Peds. (#/hr) | | | | 2 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 15.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1433 | 5 | 3 | 2383 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 1 | 0 | 3 | 23 | 0 | 22 | 1 | 1462 | 5 | 3 | 2432 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 3173 | 3909 | 1216 | 2691 | 3907 | 736 | 2432 | 0 | 0 | 1469 | 0 | 0 |
| Stage 1 | 2438 | 2438 | - | 1469 | 1469 | - | - | - | - | - | - | - |
| Stage 2 | 735 | 1471 | - | 1222 | 2438 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.4 | 6.5 | 7.2 | 7.8 | 5.9 | 7 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.4 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *2 | *3 | *95 | *~ 9 | *7 | *575 | *115 | - | - | *696 | - | - |
| Stage 1 | *98 | *69 | - | *596 | *417 | - | - | - | - | - | - | - |
| Stage 2 | *596 | *417 | - | *98 | *69 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *2 | *3 | *95 | *~ 9 | *7 | *574 | *115 | - | - | *696 | - | - |
| Mov Cap-2 Maneuver | *2 | *3 | - | *~ 9 | *7 | - | - | - | - | - | - | - |
| Stage 1 | *98 | *69 | - | *590 | *413 | - | - | - | - | - | - | - |
| Stage 2 | *568 | *413 | - | *95 | *69 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 684.6 | $ 1235 | 0 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 115 | - | - | 8 | 17 | * 696 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.51 | 2.701 | 0.004 | - | - |
| HCM Control Delay (s) | 36.6 | - | - | $ 684.6 | $ 1235 | 10.2 | - | - |
| HCM Lane LOS | E | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 1 | 6.3 | 0 | - | - |

| Notes |
|---|

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 10 | 0 | 1471 | 2271 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 238 | | | 870 | 546 | |
| Travel Time (s) | 6.5 | | | 14.8 | 9.3 | |
| Confl. Peds. (#/hr) | 2 | 2 | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

**Intersection Summary**

Area Type: Other





**Intersection**

Int Delay, s/veh 0.1

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 10 | 0 | 1471 | 2271 | 0 |
| Conflicting Peds, #/hr | 2 | 2 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 1 | 10 | 0 | 1532 | 2366 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3134 | 1185 | 2368 | 0 | - | 0 |
| Stage 1 | 2368 | - | - | - | - | - |
| Stage 2 | 766 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *4 | *153 | *186 | - | - | - |
| Stage 1 | *159 | - | - | - | - | - |
| Stage 2 | *596 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *4 | *153 | *186 | - | - | - |
| Mov Cap-2 Maneuver | *116 | - | - | - | - | - |
| Stage 1 | *159 | - | - | - | - | - |
| Stage 2 | *595 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 30.8 | 0 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 186 | - | 116 | 153 | - | - |
| HCM Lane V/C Ratio | - | - | 0.009 | 0.068 | - | - |
| HCM Control Delay (s) | 0 | - | 36.3 | 30.2 | - | - |
| HCM Lane LOS | A | - | E | D | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0.2 | - | - |

**Notes**

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 26 | 1403 | 3 | 74 | 2415 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 1403 | 3 | 74 | 2415 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 27 | 1446 | 3 | 76 | 2490 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2845 | 725 | 0 | 0 | 1449 | 0 |
| Stage 1 | 1448 | - | - | - | - | - |
| Stage 2 | 1397 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.6 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *10 | *575 | - | - | *696 | - |
| Stage 1 | *596 | - | - | - | - | - |
| Stage 2 | *98 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *10 | *575 | - | - | *696 | - |
| Mov Cap-2 Maneuver | *10 | - | - | - | - | - |
| Stage 1 | *596 | - | - | - | - | - |
| Stage 2 | *98 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.6 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 575 | * 696 | - |
| HCM Lane V/C Ratio | - | - | 0.047 | 0.11 | - |
| HCM Control Delay (s) | - | - | 11.6 | 10.8 | 0 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.4 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 124 | 106 | 26 | 582 | 666 | 283 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 19.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 124 | 106 | 26 | 582 | 666 | 283 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 1 | 0 | 1 | 0 | 1 | 1 |
| Mvmt Flow | 127 | 108 | 27 | 594 | 680 | 289 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1471 | 824 | 968 | 0 | - | 0 |
| Stage 1 | 824 | - | - | - | - | - |
| Stage 2 | 647 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *152 | 504 | 422 | - | - | - |
| Stage 1 | *527 | - | - | - | - | - |
| Stage 2 | *653 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *138 | 504 | 422 | - | - | - |
| Mov Cap-2 Maneuver | *138 | - | - | - | - | - |
| Stage 1 | *527 | - | - | - | - | - |
| Stage 2 | *591 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 151.4 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 422 | - | 207 | - | - |
| HCM Lane V/C Ratio | 0.063 | - | 1.134 | - | - |
| HCM Control Delay (s) | 14.1 | 0 | 151.4 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 11.3 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 117 | 428 | 367 | 25 | 12 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 413 | 339 | | 601 | |
| Travel Time (s) | | 8.0 | 6.6 | | 16.4 | |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 0% | 0% |
| Parking (#/hr) | | | | 0 | | |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 117 | 428 | 367 | 25 | 12 | 55 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 133 | 486 | 417 | 28 | 14 | 62 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 445 | 0 | - | 0 | 940 | 431 |
| Stage 1 | - | - | - | - | 431 | - |
| Stage 2 | - | - | - | - | 509 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1070 | - | - | - | 256 | 675 |
| Stage 1 | - | - | - | - | 712 | - |
| Stage 2 | - | - | - | - | 604 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1070 | - | - | - | 212 | 675 |
| Mov Cap-2 Maneuver | - | - | - | - | 212 | - |
| Stage 1 | - | - | - | - | 712 | - |
| Stage 2 | - | - | - | - | 501 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.3 | 0 | 13.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1070 | - | - | - | 485 |
| HCM Lane V/C Ratio | 0.124 | - | - | - | 0.157 |
| HCM Control Delay (s) | 8.8 | 0.5 | - | - | 13.8 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.6 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 25 | 422 | 397 | 36 | 79 | 51 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 339 | 275 | | 216 | |
| Travel Time (s) | | 6.6 | 5.4 | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | 3 | 3 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 3% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 25 | 422 | 397 | 36 | 79 | 51 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 3 | 3 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 4 | 3 | 1 | 0 | 0 | 0 |
| Mvmt Flow | 28 | 474 | 446 | 40 | 89 | 57 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 490 | 0 | - | 0 | 762 | 469 |
| Stage 1 | - | - | - | - | 469 | - |
| Stage 2 | - | - | - | - | 293 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1034 | - | - | - | 348 | 639 |
| Stage 1 | - | - | - | - | 675 | - |
| Stage 2 | - | - | - | - | 833 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1034 | - | - | - | 333 | 637 |
| Mov Cap-2 Maneuver | - | - | - | - | 333 | - |
| Stage 1 | - | - | - | - | 673 | - |
| Stage 2 | - | - | - | - | 800 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 18.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1034 | - | - | - | 410 |
| HCM Lane V/C Ratio | 0.027 | - | - | - | 0.356 |
| HCM Control Delay (s) | 8.6 | 0.1 | - | - | 18.6 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.6 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 47 | 309 | 519 | 31 | 191 | 787 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 14.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 47 | 309 | 519 | 31 | 191 | 787 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 51 | 336 | 564 | 34 | 208 | 855 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1835 | 564 | 0 | 0 | 564 | 0 |
| Stage 1 | 564 | - | - | - | - | - |
| Stage 2 | 1271 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 109 | 573 | - | - | 767 | - |
| Stage 1 | 685 | - | - | - | - | - |
| Stage 2 | 331 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 53 | 573 | - | - | 767 | - |
| Mov Cap-2 Maneuver | 132 | - | - | - | - | - |
| Stage 1 | 685 | - | - | - | - | - |
| Stage 2 | 160 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 71 | 0 | 2.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 398 | 767 | - |
| HCM Lane V/C Ratio | - | - | 0.972 | 0.271 | - |
| HCM Control Delay (s) | - | - | 71 | 11.4 | 0 |
| HCM Lane LOS | - | - | F | B | A |
| HCM 95th %tile Q(veh) | - | - | 11.4 | 1.1 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 15 | 472 | 371 | 25 | 82 | 53 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 15 | 472 | 371 | 25 | 82 | 53 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 1 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 16 | 502 | 395 | 27 | 87 | 56 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 422 | 0 | - | 0 | 943 | 212 |
| Stage 1 | - | - | - | - | 409 | - |
| Stage 2 | - | - | - | - | 534 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.1 | 7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.9 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1089 | - | - | - | 282 | 894 |
| Stage 1 | - | - | - | - | 734 | - |
| Stage 2 | - | - | - | - | 655 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1089 | - | - | - | 277 | 893 |
| Mov Cap-2 Maneuver | - | - | - | - | 277 | - |
| Stage 1 | - | - | - | - | 733 | - |
| Stage 2 | - | - | - | - | 645 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 20.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1089 | - | - | - | 380 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.378 |
| HCM Control Delay (s) | 8.4 | - | - | - | 20.1 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.7 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 109 | 70 | 125 | 20 | 31 | 19 | 66 | 383 | 4 | 23 | 495 | 99 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 193 | | | 186 | | | 386 | | | 598 | |
| Travel Time (s) | | 5.3 | | | 5.1 | | | 10.5 | | | 16.3 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 42.1 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 109 | 70 | 125 | 0 | 20 | 31 | 19 | 0 | 66 | 383 | 4 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 25 |
| Mvmt Flow | 0 | 116 | 74 | 133 | 0 | 21 | 33 | 20 | 0 | 70 | 407 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.8 | 12.9 | 37.2 |
| HCM LOS | B | B | E |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 15% | 61% | 0% | 29% | 4% |
| Vol Thru, % | 85% | 39% | 0% | 44% | 80% |
| Vol Right, % | 1% | 0% | 100% | 27% | 16% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 453 | 179 | 125 | 70 | 617 |
| LT Vol | 66 | 109 | 0 | 20 | 23 |
| Through Vol | 383 | 70 | 0 | 31 | 495 |
| RT Vol | 4 | 0 | 125 | 19 | 99 |
| Lane Flow Rate | 482 | 190 | 133 | 74 | 656 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.86 | 0.423 | 0.258 | 0.17 | 1 |
| Departure Headway (Hd) | 6.424 | 7.998 | 6.993 | 8.198 | 6.261 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 564 | 449 | 512 | 440 | 584 |
| Service Time | 4.493 | 5.77 | 4.766 | 6.198 | 4.269 |
| HCM Lane V/C Ratio | 0.855 | 0.423 | 0.26 | 0.168 | 1.123 |
| HCM Control Delay | 37.2 | 16.6 | 12.2 | 12.9 | 62.4 |
| HCM Lane LOS | E | C | B | B | F |
| HCM 95th-tile Q | 9.4 | 2.1 | 1 | 0.6 | 14.7 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 23 | 495 | 99 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 24 | 527 | 105 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 62.4 |
| HCM LOS | F |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 357 | 176 | 367 | 331 | 42 | 97 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1480 | | | 552 | 551 | |
| Travel Time (s) | 33.6 | | | 12.5 | 12.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 20.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 357 | 176 | 367 | 331 | 42 | 97 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Mvmt Flow | 364 | 180 | 374 | 338 | 43 | 99 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 364 | 0 | 1451 | 364 |
| Stage 1 | - | - | - | - | 364 | - |
| Stage 2 | - | - | - | - | 1087 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 901 | - | 60 | 639 |
| Stage 1 | - | - | - | - | 632 | - |
| Stage 2 | - | - | - | - | 173 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 901 | - | ~ 29 | 639 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 29 | - |
| Stage 1 | - | - | - | - | 632 | - |
| Stage 2 | - | - | - | - | 85 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 6.2 | 172.4 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 29 | 639 | - | - | 901 | - |
| HCM Lane V/C Ratio | 1.478 | 0.155 | - | - | 0.416 | - |
| HCM Control Delay (s) | $ 543.4 | 11.7 | - | - | 11.8 | 0 |
| HCM Lane LOS | F | B | - | - | B | A |
| HCM 95th %tile Q(veh) | 5 | 0.5 | - | - | 2.1 | - |

**Notes**

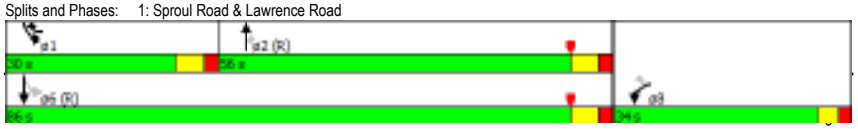
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 374 | 555 | 1254 | 435 | 388 | 1095 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1659 | 1485 | 3336 | 1558 | 1784 | 3569 |
| Flt Permitted | 0.950 | | | | 0.070 | |
| Satd. Flow (perm) | 1659 | 1485 | 3336 | 1558 | 131 | 3569 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 18 | | 247 | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Adj. Flow (vph) | 382 | 566 | 1280 | 444 | 396 | 1117 |
| Lane Group Flow (vph) | 382 | 566 | 1280 | 444 | 396 | 1117 |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 34.0 | 30.0 | 56.0 | 56.0 | 30.0 | 86.0 |
| Total Split (%) | 28.3% | 25.0% | 46.7% | 46.7% | 25.0% | 71.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road




1: Sproul Road & Lawrence Road
2025 BASE CONDITIONS
Timing Plan: SAT PEAK

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 374 | 555 | 1254 | 435 | 388 | 1095 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 382 | 449 | 1280 | 376 | 396 | 1117 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 416 | 671 | 1446 | 676 | 437 | 2425 |
| Arrive On Green | 0.25 | 0.25 | 0.29 | 0.29 | 0.20 | 0.68 |
| Sat Flow, veh/h | 1663 | 1485 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 382 | 449 | 1280 | 376 | 396 | 1117 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 26.8 | 28.7 | 44.0 | 24.3 | 20.2 | 17.6 |
| Cycle Q Clear(g_c), s | 26.8 | 28.7 | 44.0 | 24.3 | 20.2 | 17.6 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 416 | 671 | 1446 | 676 | 437 | 2425 |
| V/C Ratio(X) | 0.92 | 0.67 | 0.89 | 0.56 | 0.91 | 0.46 |
| Avail Cap(c_a), veh/h | 416 | 667 | 1448 | 680 | 456 | 2425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 0.67 | 0.67 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.54 | 0.54 | 0.48 | 0.48 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.8 | 25.8 | 39.9 | 32.9 | 38.0 | 9.2 |
| Incr Delay (d2), s/veh | 16.0 | 1.4 | 4.3 | 1.6 | 21.0 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 10.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.7 | 16.1 | 26.6 | 14.7 | 23.9 | 13.8 |
| LnGrp Delay(d),s/veh | 59.9 | 27.3 | 44.3 | 34.5 | 69.0 | 9.8 |
| LnGrp LOS | E | C | D | C | E | A |
| Approach Vol, veh/h | 831 | | 1656 | | | 1513 |
| Approach Delay, s/veh | 42.2 | | 42.0 | | | 25.3 |
| Approach LOS | D | | D | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.9 | 57.1 | | | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 24.0 | 50.0 | | | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 22.7 | 46.5 | | | | 20.1 | | 31.2 |
| Green Ext Time (p_c), s | 0.2 | 3.1 | | | | 23.8 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 35.8 |
| HCM 2010 LOS | D |

## 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway
## 2025 BASE CONDITIONS

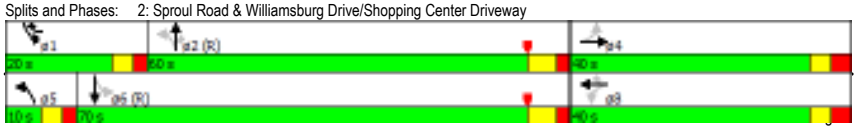
Timing Plan: SAT PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 17 | 249 | 14 | 246 | 19 | 1396 | 181 | 185 | 1320 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.957 | | | | 0.850 | | | 0.850 | | 0.999 | |
| Flt Protected | | 0.983 | | | 0.955 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1688 | 0 | 0 | 1685 | 1499 | 1564 | 3286 | 1534 | 1710 | 3417 | 0 |
| Flt Permitted | | 0.816 | | | 0.731 | | 0.133 | | | 0.061 | | |
| Satd. Flow (perm) | 0 | 1401 | 0 | 0 | 1289 | 1499 | 219 | 3286 | 1534 | 110 | 3417 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 18 | | | | 27 | | | 193 | | 1 | |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 884 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 15.1 | | | 6.6 | |
| Adj. Flow (vph) | 20 | 19 | 18 | 265 | 15 | 262 | 20 | 1485 | 193 | 197 | 1404 | 14 |
| Lane Group Flow (vph) | 0 | 57 | 0 | 0 | 280 | 262 | 20 | 1485 | 193 | 197 | 1418 | 0 |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | 20.0 | 10.0 | 60.0 | 60.0 | 20.0 | 70.0 | |
| Total Split (%) | 33.3% | 33.3% | | 33.3% | 33.3% | 16.7% | 8.3% | 50.0% | 50.0% | 16.7% | 58.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

### Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway




## 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway
## 2025 BASE CONDITIONS

Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 17 | 249 | 14 | 246 | 19 | 1396 | 181 | 185 | 1320 | 13 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1794 | 1800 | 1764 | 1764 | 1764 | 1764 | 1729 | 1816 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 11 | 265 | 15 | 218 | 20 | 1485 | 0 | 197 | 1404 | 13 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cap, veh/h | 42 | 35 | 10 | 261 | 11 | 603 | 147 | 1535 | 743 | 250 | 1981 | 18 |
| Arrive On Green | 0.28 | 0.29 | 0.28 | 0.28 | 0.29 | 0.29 | 0.01 | 0.33 | 0.00 | 0.06 | 0.38 | 0.38 |
| Sat Flow, veh/h | 0 | 119 | 34 | 695 | 39 | 1499 | 1680 | 3286 | 1544 | 1714 | 3472 | 32 |
| Grp Volume(v), veh/h | 50 | 0 | 0 | 280 | 0 | 218 | 20 | 1485 | 0 | 197 | 691 | 726 |
| Grp Sat Flow(s),veh/h/ln | 152 | 0 | 0 | 735 | 0 | 1499 | 1680 | 1643 | 1544 | 1714 | 1710 | 1794 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 0.7 | 52.0 | 0.0 | 7.8 | 41.1 | 41.1 |
| Cycle Q Clear(g_c), s | 34.0 | 0.0 | 0.0 | 34.0 | 0.0 | 12.5 | 0.7 | 52.0 | 0.0 | 7.8 | 41.1 | 41.1 |
| Prop In Lane | 0.40 | | 0.22 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 85 | 0 | 0 | 267 | 0 | 603 | 147 | 1535 | 743 | 250 | 975 | 1023 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.00 | 1.05 | 0.00 | 0.36 | 0.14 | 0.97 | 0.00 | 0.79 | 0.71 | 0.71 |
| Avail Cap(c_a), veh/h | 85 | 0 | 0 | 267 | 0 | 582 | 225 | 1628 | 765 | 310 | 975 | 1023 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.63 | 0.63 | 0.00 | 0.79 | 0.79 | 0.79 |
| Uniform Delay (d), s/veh | 35.3 | 0.0 | 0.0 | 46.3 | 0.0 | 25.1 | 22.8 | 40.6 | 0.0 | 34.1 | 28.8 | 28.8 |
| Incr Delay (d2), s/veh | 10.1 | 0.0 | 0.0 | 68.9 | 0.0 | 0.4 | 0.3 | 12.0 | 0.0 | 8.3 | 3.4 | 3.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 2.2 | 0.1 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 2.6 | 0.0 | 0.0 | 9.2 | 0.0 | 8.8 | 0.6 | 34.3 | 0.0 | 11.3 | 27.3 | 28.4 |
| LnGrp Delay(d),s/veh | 45.3 | 0.0 | 0.0 | 115.3 | 0.0 | 25.5 | 23.1 | 54.1 | 0.0 | 44.5 | 32.3 | 32.2 |
| LnGrp LOS | D | | | F | | C | C | D | | D | C | C |
| Approach Vol, veh/h | | 50 | | | 498 | | | 1505 | | | 1614 | |
| Approach Delay, s/veh | | 45.3 | | | 76.0 | | | 53.7 | | | 33.7 | |
| Approach LOS | | D | | | E | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 15.5 | 64.5 | | 40.0 | 6.6 | 73.4 | | 40.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 15.0 | 54.0 | | 34.0 | 5.0 | 64.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 10.3 | 54.5 | | 36.0 | 3.2 | 43.6 | | 36.0 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | | 0.0 | 0.0 | 14.1 | | 0.0 |

### Intersection Summary

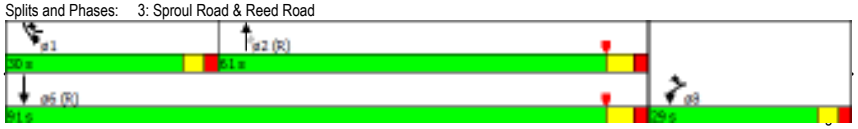
| | |
|---|---|
| HCM 2010 Ctrl Delay | 47.8 |
| HCM 2010 LOS | D |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 260 | 146 | 1267 | 288 | 279 | 1343 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (%) | -4% | | 4% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1727 | 1561 | 3318 | 1421 | 1744 | 3454 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1727 | 1561 | 3318 | 1421 | 1744 | 3454 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 25 | | 267 | | |
| Link Speed (mph) | 35 | | 40 | | | 40 |
| Link Distance (ft) | 417 | | 187 | | | 884 |
| Travel Time (s) | 8.1 | | 3.2 | | | 15.1 |
| Adj. Flow (vph) | 265 | 149 | 1293 | 294 | 285 | 1370 |
| Lane Group Flow (vph) | 265 | 149 | 1293 | 294 | 285 | 1370 |
| Turn Type | Prot | pt+ov | NA | Perm | Prot | NA |
| Protected Phases | 8 | 8 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | 2 | | |
| Detector Phase | 8 | 8 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 30.0 | 30.0 | 3.0 | 30.0 |
| Minimum Split (s) | 12.0 | | 36.0 | 36.0 | 12.0 | 36.0 |
| Total Split (s) | 29.0 | | 61.0 | 61.0 | 30.0 | 91.0 |
| Total Split (%) | 24.2% | | 50.8% | 50.8% | 25.0% | 75.8% |
| Yellow Time (s) | 3.0 | | 4.0 | 4.0 | 3.0 | 4.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | | 5.0 | 5.0 | 4.0 | 5.0 |
| Lead/Lag | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | Yes | |
| Recall Mode | None | | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sproul Road & Reed Road




3: Sproul Road & Reed Road
2025 BASE CONDITIONS
Timing Plan: SAT PEAK

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 260 | 146 | 1267 | 288 | 279 | 1343 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 1 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1747 | 1729 | 1836 | 1818 |
| Adj Flow Rate, veh/h | 265 | 149 | 1293 | 93 | 285 | 1370 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 0 | 1 | 2 | 0 | 1 |
| Cap, veh/h | 315 | 578 | 1731 | 767 | 329 | 2566 |
| Arrive On Green | 0.18 | 0.18 | 0.52 | 0.52 | 0.25 | 0.99 |
| Sat Flow, veh/h | 1731 | 1561 | 3406 | 1470 | 1749 | 3545 |
| Grp Volume(v), veh/h | 265 | 149 | 1293 | 93 | 285 | 1370 |
| Grp Sat Flow(s),veh/h/ln | 1731 | 1561 | 1659 | 1470 | 1749 | 1727 |
| Q Serve(g_s), s | 17.7 | 8.0 | 36.7 | 3.9 | 18.7 | 1.2 |
| Cycle Q Clear(g_c), s | 17.7 | 8.0 | 36.7 | 3.9 | 18.7 | 1.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 315 | 578 | 1731 | 767 | 329 | 2566 |
| V/C Ratio(X) | 0.84 | 0.26 | 0.75 | 0.12 | 0.87 | 0.53 |
| Avail Cap(c_a), veh/h | 361 | 619 | 1731 | 767 | 379 | 2566 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 |
| Uniform Delay (d), s/veh | 47.4 | 26.3 | 22.5 | 14.7 | 43.5 | 0.2 |
| Incr Delay (d2), s/veh | 14.7 | 0.2 | 3.0 | 0.3 | 12.6 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.9 | 6.2 | 24.3 | 3.0 | 14.5 | 0.9 |
| LnGrp Delay(d),s/veh | 62.1 | 26.6 | 25.5 | 15.0 | 56.1 | 0.8 |
| LnGrp LOS | E | C | C | B | E | A |
| Approach Vol, veh/h | 414 | | 1386 | | | 1655 |
| Approach Delay, s/veh | 49.3 | | 24.8 | | | 10.3 |
| Approach LOS | D | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 26.6 | 67.6 | | | | 94.2 | | 25.8 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 25.0 | 55.0 | | | | 85.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | 21.2 | 39.2 | | | | 3.7 | | 20.2 |
| Green Ext Time (p_c), s | 0.4 | 11.5 | | | | 26.3 | | 0.6 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 20.8 |
| HCM 2010 LOS | C |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 485 | 1000 | 3 | 486 | 1040 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Lane Util. Factor | 1.00 | 0.88 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | 0.850 | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3499 | 0 | 1636 | 1706 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Adj. Flow (vph) | 0 | 500 | 1031 | 3 | 501 | 1072 |
| Lane Group Flow (vph) | 0 | 500 | 1034 | 0 | 501 | 1072 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 36.0 | 34.0 | | 36.0 | 70.0 |
| Total Split (%) | | 51.4% | 48.6% | | 51.4% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 25.9 | 29.1 | | 25.9 | 70.0 |
| Actuated g/C Ratio | | 0.37 | 0.42 | | 0.37 | 1.00 |
| v/c Ratio | | 0.53 | 0.71 | | 0.83 | 0.63 |
| Control Delay | | 22.8 | 27.3 | | 33.1 | 1.8 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 22.8 | 27.3 | | 33.1 | 1.8 |
| LOS | | C | C | | C | A |
| Approach Delay | | | 27.3 | | | 11.7 |
| Approach LOS | | | C | | | B |
| Queue Length 50th (ft) | | 129 | 231 | | 181 | 0 |
| Queue Length 95th (ft) | | m171 | m202 | | #332 | 0 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1030 | 1455 | | 654 | 1706 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.49 | 0.71 | | 0.77 | 0.63 |

**Intersection Summary**

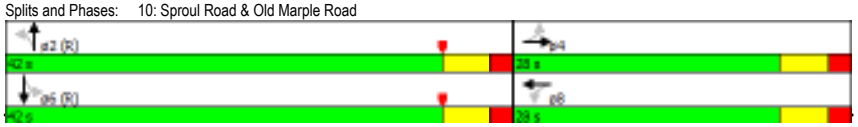
Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 6 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 18.7 — Intersection LOS: B
Intersection Capacity Utilization 70.2% — ICU Level of Service C
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 167 | 106 | 56 | 184 | 143 | 11 | 69 | 1290 | 73 | 3 | 970 | 115 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | 1.00 | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.977 | | | 0.995 | | | 0.992 | | | 0.984 | |
| Flt Protected | | 0.975 | | | 0.973 | | | 0.998 | | | | |
| Satd. Flow (prot) | 0 | 1774 | 0 | 0 | 1578 | 0 | 0 | 3289 | 0 | 0 | 3375 | 0 |
| Flt Permitted | | 0.684 | | | 0.660 | | | 0.761 | | | 0.951 | |
| Satd. Flow (perm) | 0 | 1244 | 0 | 0 | 1070 | 0 | 0 | 2508 | 0 | 0 | 3209 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 16 | | | 3 | | | 12 | | | 27 | |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Adj. Flow (vph) | 178 | 113 | 60 | 196 | 152 | 12 | 73 | 1372 | 78 | 3 | 1032 | 122 |
| Lane Group Flow (vph) | 0 | 351 | 0 | 0 | 360 | 0 | 0 | 1523 | 0 | 0 | 1157 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 28.0 | 28.0 | | 28.0 | 28.0 | | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 13 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 167 | 106 | 56 | 184 | 143 | 11 | 69 | 1290 | 73 | 3 | 970 | 115 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1878 | 1818 | 1782 | 1746 | 1782 | 1773 | 1750 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 178 | 113 | 47 | 196 | 152 | 5 | 73 | 1372 | 73 | 3 | 1032 | 108 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 292 | 166 | 61 | 291 | 187 | 6 | 82 | 1421 | 75 | 52 | 1567 | 171 |
| Arrive On Green | 0.31 | 0.32 | 0.31 | 0.31 | 0.32 | 0.31 | 0.52 | 0.54 | 0.52 | 0.52 | 0.54 | 0.52 |
| Sat Flow, veh/h | 669 | 518 | 192 | 661 | 585 | 18 | 75 | 2565 | 146 | 1 | 2980 | 320 |
| Grp Volume(v), veh/h | 338 | 0 | 0 | 353 | 0 | 0 | 733 | 0 | 785 | 607 | 0 | 536 |
| Grp Sat Flow(s),veh/h/ln | 1379 | 0 | 0 | 1264 | 0 | 0 | 1219 | 0 | 1567 | 1712 | 0 | 1589 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.3 | 0.0 | 0.0 | 20.1 | 0.0 | 32.5 | 1.0 | 0.0 | 16.5 |
| Cycle Q Clear(g_c), s | 15.8 | 0.0 | 0.0 | 19.0 | 0.0 | 0.0 | 36.6 | 0.0 | 32.5 | 33.5 | 0.0 | 16.5 |
| Prop In Lane | 0.53 | | 0.14 | 0.56 | | 0.01 | 0.10 | | 0.09 | 0.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 500 | 0 | 0 | 466 | 0 | 0 | 722 | 0 | 843 | 912 | 0 | 854 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.00 | 0.76 | 0.00 | 0.00 | 1.02 | 0.00 | 0.93 | 0.67 | 0.00 | 0.63 |
| Avail Cap(c_a), veh/h | 512 | 0 | 0 | 478 | 0 | 0 | 694 | 0 | 842 | 947 | 0 | 854 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.7 | 0.0 | 0.0 | 22.9 | 0.0 | 0.0 | 17.7 | 0.0 | 15.1 | 11.4 | 0.0 | 11.4 |
| Incr Delay (d2), s/veh | 3.4 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 | 37.4 | 0.0 | 18.3 | 3.8 | 0.0 | 3.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.8 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | 39.8 | 0.0 | 25.2 | 14.3 | 0.0 | 12.7 |
| LnGrp Delay(d),s/veh | 25.1 | 0.0 | 0.0 | 29.6 | 0.0 | 0.0 | 60.0 | 0.0 | 33.5 | 15.3 | 0.0 | 14.9 |
| LnGrp LOS | C | | | C | | | F | | C | B | | B |
| Approach Vol, veh/h | | 338 | | | 353 | | | 1518 | | | 1143 | |
| Approach Delay, s/veh | | 25.1 | | | 29.6 | | | 46.3 | | | 15.1 | |
| Approach LOS | | C | | | C | | | D | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.6 | | 27.4 | | 42.6 | | 27.4 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 22.0 | | 36.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 38.6 | | 17.8 | | 35.5 | | 21.0 |
| Green Ext Time (p_c), s | | 0.0 | | 1.2 | | 0.4 | | 0.3 |

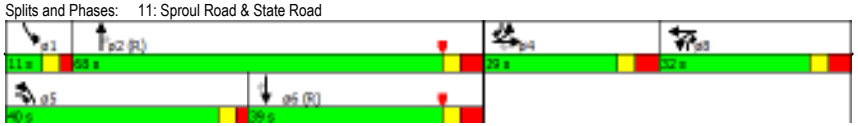
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.8 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 494 | 60 | 479 | 283 | 253 | 53 | 403 | 920 | 331 | 30 | 744 | 463 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 1.00 | 1.00 | 0.99 | 0.99 | 1.00 | | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Frt | | | 0.850 | | 0.976 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | 0.962 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1707 | 1714 | 1691 | 1733 | 1754 | 0 | 1580 | 3386 | 1515 | 1596 | 3386 | 1515 |
| Flt Permitted | 0.950 | 0.962 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1701 | 1709 | 1668 | 1722 | 1753 | 0 | 1580 | 3386 | 1496 | 1594 | 3386 | 1496 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 86 | | 6 | | | | 348 | | | 136 |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Adj. Flow (vph) | 520 | 63 | 504 | 298 | 266 | 56 | 424 | 968 | 348 | 32 | 783 | 487 |
| Lane Group Flow (vph) | 291 | 292 | 504 | 268 | 352 | 0 | 424 | 968 | 348 | 32 | 783 | 487 |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 29.0 | 29.0 | 40.0 | 32.0 | 32.0 | | 40.0 | 68.0 | 32.0 | 11.0 | 39.0 | 29.0 |
| Total Split (%) | 20.7% | 20.7% | 28.6% | 22.9% | 22.9% | | 28.6% | 48.6% | 22.9% | 7.9% | 27.9% | 20.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road






| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 494 | 60 | 479 | 283 | 253 | 53 | 403 | 920 | 331 | 30 | 744 | 463 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1829 | 1826 | 1872 | 1858 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 565 | 0 | 0 | 282 | 288 | 0 | 424 | 968 | 0 | 32 | 783 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 577 | 0 | 654 | 324 | 338 | 0 | 436 | 1565 | 978 | 57 | 806 | 609 |
| Arrive On Green | 0.16 | 0.00 | 0.00 | 0.18 | 0.18 | 0.00 | 0.26 | 0.46 | 0.00 | 0.03 | 0.24 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 565 | 0 | 0 | 282 | 288 | 0 | 424 | 968 | 0 | 32 | 783 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1858 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 22.4 | 0.0 | 0.0 | 21.6 | 21.0 | 0.0 | 34.6 | 30.0 | 0.0 | 2.6 | 32.0 | 0.0 |
| Cycle Q Clear(g_c), s | 22.4 | 0.0 | 0.0 | 21.6 | 21.0 | 0.0 | 34.6 | 30.0 | 0.0 | 2.6 | 32.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 577 | 0 | 654 | 324 | 338 | 0 | 436 | 1565 | 978 | 57 | 806 | 609 |
| V/C Ratio(X) | 0.98 | 0.00 | 0.00 | 0.87 | 0.85 | 0.00 | 0.97 | 0.62 | 0.00 | 0.57 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 577 | 0 | 654 | 331 | 345 | 0 | 436 | 1574 | 978 | 86 | 815 | 614 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 58.5 | 0.0 | 0.0 | 56.1 | 56.0 | 0.0 | 51.8 | 28.4 | 0.0 | 66.7 | 52.9 | 0.0 |
| Incr Delay (d2), s/veh | 32.0 | 0.0 | 0.0 | 20.9 | 17.8 | 0.0 | 35.6 | 1.8 | 0.0 | 8.6 | 25.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 34.2 | 0.0 | 0.0 | 4.7 | 6.8 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 22.5 | 0.0 | 0.0 | 19.4 | 19.8 | 0.0 | 29.1 | 20.7 | 0.0 | 2.4 | 24.7 | 0.0 |
| LnGrp Delay(d),s/veh | 124.8 | 0.0 | 0.0 | 81.8 | 80.6 | 0.0 | 92.7 | 30.2 | 0.0 | 75.3 | 78.3 | 0.0 |
| LnGrp LOS | F | | | F | F | | F | C | | E | E | |
| Approach Vol, veh/h | | 565 | | | 570 | | | 1392 | | | 815 | |
| Approach Delay, s/veh | | 124.8 | | | 81.2 | | | 49.2 | | | 78.2 | |
| Approach LOS | | F | | | F | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.6 | 71.1 | | 29.0 | 40.0 | 39.7 | | 31.3 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 6.0 | 61.0 | | 22.0 | 35.0 | 32.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 5.1 | 32.5 | | 24.9 | 37.1 | 34.5 | | 24.1 |
| Green Ext Time (p_c), s | 0.0 | 9.2 | | 0.0 | 0.0 | 0.0 | | 0.2 |

**Intersection Summary**

HCM 2010 Ctrl Delay 74.5
HCM 2010 LOS E

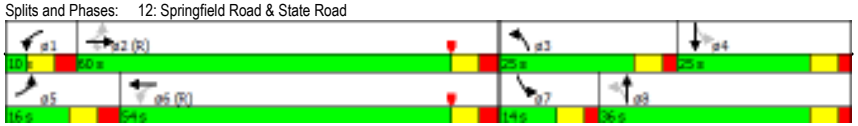
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 239 | 1445 | 472 | 42 | 1312 | 136 | 402 | 367 | 45 | 163 | 332 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | 1.00 | 1.00 | |
| Frt | | | 0.850 | | 0.986 | | | 0.984 | | | 0.984 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1744 | 3488 | 1560 | 1659 | 3242 | 0 | 1573 | 1704 | 0 | 1661 | 1718 | 0 |
| Flt Permitted | 0.074 | | | 0.083 | | | 0.160 | | | 0.200 | | |
| Satd. Flow (perm) | 136 | 3488 | 1527 | 145 | 3242 | 0 | 265 | 1704 | 0 | 350 | 1718 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 372 | | 11 | | | 5 | | | 4 | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Adj. Flow (vph) | 252 | 1521 | 497 | 44 | 1381 | 143 | 423 | 386 | 47 | 172 | 349 | 41 |
| Lane Group Flow (vph) | 252 | 1521 | 497 | 44 | 1524 | 0 | 423 | 433 | 0 | 172 | 390 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 16.0 | 60.0 | 60.0 | 10.0 | 54.0 | | 25.0 | 36.0 | | 14.0 | 25.0 | |
| Total Split (%) | 13.3% | 50.0% | 50.0% | 8.3% | 45.0% | | 20.8% | 30.0% | | 11.7% | 20.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road




12: Springfield Road & State Road
2025 BASE CONDITIONS
Timing Plan: SAT PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 239 | 1445 | 472 | 42 | 1312 | 136 | 402 | 367 | 45 | 163 | 332 | 39 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1730 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 252 | 1521 | 0 | 44 | 1381 | 0 | 423 | 386 | 0 | 172 | 349 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 206 | 1569 | 702 | 117 | 1315 | 0 | 342 | 463 | 0 | 199 | 301 | 0 |
| Arrive On Green | 0.08 | 0.45 | 0.00 | 0.03 | 0.40 | 0.00 | 0.17 | 0.26 | 0.00 | 0.08 | 0.17 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3374 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 252 | 1521 | 0 | 44 | 1381 | 0 | 423 | 386 | 0 | 172 | 349 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 10.0 | 51.0 | 0.0 | 1.8 | 48.0 | 0.0 | 20.0 | 24.4 | 0.0 | 9.0 | 20.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 51.0 | 0.0 | 1.8 | 48.0 | 0.0 | 20.0 | 24.4 | 0.0 | 9.0 | 20.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 206 | 1569 | 702 | 117 | 1315 | 0 | 342 | 463 | 0 | 199 | 301 | 0 |
| V/C Ratio(X) | 1.23 | 0.97 | 0.00 | 0.38 | 1.05 | 0.00 | 1.24 | 0.83 | 0.00 | 0.86 | 1.16 | 0.00 |
| Avail Cap(c_a), veh/h | 206 | 1569 | 702 | 123 | 1315 | 0 | 342 | 463 | 0 | 242 | 301 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 36.2 | 32.9 | 0.0 | 29.3 | 36.0 | 0.0 | 34.6 | 42.2 | 0.0 | 41.4 | 50.0 | 0.0 |
| Incr Delay (d2), s/veh | 136.6 | 16.5 | 0.0 | 2.0 | 39.1 | 0.0 | 130.0 | 12.4 | 0.0 | 22.9 | 101.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 41.6 | 9.5 | 0.0 | 0.0 | 25.7 | 0.0 | 49.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 29.3 | 40.2 | 0.0 | 1.6 | 57.0 | 0.0 | 48.5 | 20.0 | 0.0 | 4.8 | 33.2 | 0.0 |
| LnGrp Delay(d),s/veh | 214.4 | 58.8 | 0.0 | 31.3 | 100.8 | 0.0 | 213.9 | 54.8 | 0.0 | 64.3 | 151.5 | 0.0 |
| LnGrp LOS | F | E | | C | F | | F | D | | E | F | |
| Approach Vol, veh/h | | 1773 | | | 1425 | | | 809 | | | 521 | |
| Approach Delay, s/veh | | 80.9 | | | 98.6 | | | 138.0 | | | 122.7 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 60.0 | 25.0 | 25.0 | 16.0 | 54.0 | 14.0 | 36.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 53.0 | 19.0 | 19.0 | 9.0 | 47.0 | 8.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 53.5 | 22.5 | 22.5 | 12.5 | 50.5 | 11.5 | 26.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 |

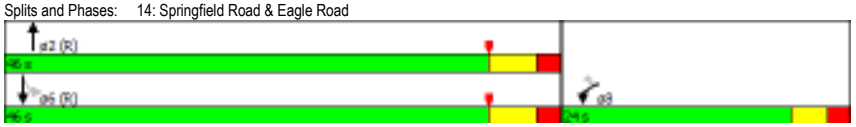
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 101.5 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 373 | 78 | 497 | 201 | 51 | 378 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | 0.961 | | | |
| Flt Protected | 0.950 | | | | | 0.994 |
| Satd. Flow (prot) | 1735 | 1439 | 1704 | 0 | 0 | 1782 |
| Flt Permitted | 0.950 | | | | | 0.789 |
| Satd. Flow (perm) | 1735 | 1439 | 1704 | 0 | 0 | 1415 |
| Right Turn on Red | | Yes | | No | | |
| Satd. Flow (RTOR) | | 85 | | | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Adj. Flow (vph) | 405 | 85 | 540 | 218 | 55 | 411 |
| Lane Group Flow (vph) | 405 | 85 | 758 | 0 | 0 | 466 |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 30.0 | | 30.0 | 30.0 |
| Minimum Split (s) | 12.0 | 12.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (s) | 24.0 | 24.0 | 46.0 | | 46.0 | 46.0 |
| Total Split (%) | 34.3% | 34.3% | 65.7% | | 65.7% | 65.7% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 10 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 373 | 78 | 497 | 201 | 51 | 378 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1693 | 1773 | 1791 | 1809 | 1793 |
| Adj Flow Rate, veh/h | 405 | 34 | 540 | 213 | 55 | 411 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 476 | 393 | 724 | 286 | 105 | 714 |
| Arrive On Green | 0.27 | 0.27 | 0.60 | 0.58 | 0.58 | 0.60 |
| Sat Flow, veh/h | 1740 | 1439 | 1211 | 478 | 79 | 1193 |
| Grp Volume(v), veh/h | 405 | 34 | 0 | 753 | 466 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1439 | 0 | 1689 | 1272 | 0 |
| Q Serve(g_s), s | 15.4 | 1.2 | 0.0 | 22.7 | 4.1 | 0.0 |
| Cycle Q Clear(g_c), s | 15.4 | 1.2 | 0.0 | 22.7 | 26.9 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.28 | 0.12 | |
| Lane Grp Cap(c), veh/h | 476 | 393 | 0 | 1010 | 800 | 0 |
| V/C Ratio(X) | 0.85 | 0.09 | 0.00 | 0.75 | 0.58 | 0.00 |
| Avail Cap(c_a), veh/h | 497 | 411 | 0 | 1010 | 800 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.45 | 0.00 |
| Uniform Delay (d), s/veh | 24.1 | 18.9 | 0.0 | 10.3 | 8.6 | 0.0 |
| Incr Delay (d2), s/veh | 12.9 | 0.1 | 0.0 | 5.0 | 1.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.1 | 0.9 | 0.0 | 17.5 | 8.0 | 0.0 |
| LnGrp Delay(d),s/veh | 37.0 | 19.0 | 0.0 | 15.3 | 10.0 | 0.0 |
| LnGrp LOS | D | B | | B | A | |
| Approach Vol, veh/h | 439 | | 753 | | | 466 |
| Approach Delay, s/veh | 35.6 | | 15.3 | | | 10.0 |
| Approach LOS | D | | B | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.9 | | | | 46.9 | | 23.1 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 40.0 | | | | 40.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 24.7 | | | | 28.9 | | 17.9 |
| Green Ext Time (p_c), s | | 5.4 | | | | 4.6 | | 0.2 |

**Intersection Summary**

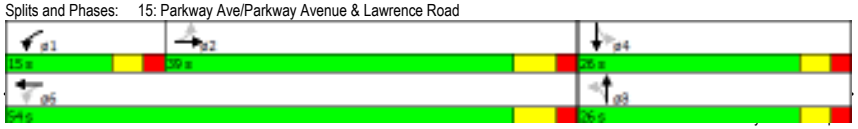
| | |
|---|---|
| HCM 2010 Ctrl Delay | 19.2 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 637 | 137 | 188 | 690 | 10 | 215 | 26 | 308 | 6 | 15 | 14 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.974 | | | 0.998 | | | 0.862 | | | 0.947 | |
| Flt Protected | | | | | 0.990 | | 0.950 | | | | 0.991 | |
| Satd. Flow (prot) | 0 | 3282 | 0 | 0 | 3304 | 0 | 1556 | 1477 | 0 | 0 | 1666 | 0 |
| Flt Permitted | | 0.951 | | | 0.614 | | 0.732 | | | | 0.925 | |
| Satd. Flow (perm) | 0 | 3121 | 0 | 0 | 2049 | 0 | 1199 | 1477 | 0 | 0 | 1555 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 3 | | | 335 | | | 15 | |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 604 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.5 | | | 12.7 | |
| Adj. Flow (vph) | 4 | 692 | 149 | 204 | 750 | 11 | 234 | 28 | 335 | 7 | 16 | 15 |
| Lane Group Flow (vph) | 0 | 845 | 0 | 0 | 965 | 0 | 234 | 363 | 0 | 0 | 38 | 0 |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 39.0 | 39.0 | | 15.0 | 54.0 | | 26.0 | 26.0 | | 26.0 | 26.0 | |
| Total Split (%) | 48.8% | 48.8% | | 18.8% | 67.5% | | 32.5% | 32.5% | | 32.5% | 32.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 69.2
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 4 | 637 | 137 | 188 | 690 | 10 | 215 | 26 | 308 | 6 | 15 | 14 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1773 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1775 | 1827 |
| Adj Flow Rate, veh/h | 4 | 692 | 145 | 204 | 750 | 10 | 234 | 28 | 247 | 7 | 16 | 13 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 56 | 1547 | 320 | 86 | 938 | 15 | 411 | 46 | 406 | 102 | 208 | 139 |
| Arrive On Green | 0.55 | 0.57 | 0.55 | 0.55 | 0.57 | 0.55 | 0.30 | 0.30 | 0.28 | 0.28 | 0.30 | 0.28 |
| Sat Flow, veh/h | 3 | 2714 | 566 | 3 | 1648 | 27 | 1296 | 156 | 1375 | 128 | 704 | 470 |
| Grp Volume(v), veh/h | 453 | 0 | 388 | 370 | 0 | 594 | 234 | 0 | 275 | 36 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1769 | 0 | 1514 | 80 | 0 | 1597 | 1296 | 0 | 1530 | 1301 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 9.9 | 30.5 | 0.0 | 16.9 | 5.4 | 0.0 | 10.3 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.9 | 0.0 | 9.9 | 30.5 | 0.0 | 16.9 | 15.3 | 0.0 | 10.3 | 10.4 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.37 | 0.55 | | 0.02 | 1.00 | | 0.90 | 0.19 | | 0.36 |
| Lane Grp Cap(c), veh/h | 1035 | 0 | 862 | 0 | 0 | 909 | 411 | 0 | 452 | 429 | 0 | 0 |
| V/C Ratio(X) | 0.44 | 0.00 | 0.45 | 0.00 | 0.00 | 0.65 | 0.57 | 0.00 | 0.61 | 0.08 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 1035 | 0 | 862 | 0 | 0 | 1180 | 458 | 0 | 508 | 483 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 8.3 | 0.0 | 8.5 | 0.0 | 0.0 | 9.8 | 22.8 | 0.0 | 20.5 | 17.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 0.4 | 0.0 | 0.0 | 0.8 | 1.3 | 0.0 | 1.7 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.8 | 0.0 | 7.7 | 0.0 | 0.0 | 12.0 | 7.4 | 0.0 | 8.0 | 0.9 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 8.6 | 0.0 | 8.8 | 0.0 | 0.0 | 10.7 | 24.2 | 0.0 | 22.3 | 17.2 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | B | | |
| Approach Vol, veh/h | | 841 | | | 964 | | | 509 | | | 36 | |
| Approach Delay, s/veh | | 8.7 | | | 6.6 | | | 23.1 | | | 17.2 | |
| Approach LOS | | A | | | A | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.8 | | 23.6 | | 42.8 | | 23.6 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 33.0 | | 21.0 | | 48.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 11.9 | | 12.4 | | 32.5 | | 17.8 |
| Green Ext Time (p_c), s | | 8.6 | | 1.6 | | 4.2 | | 0.8 |

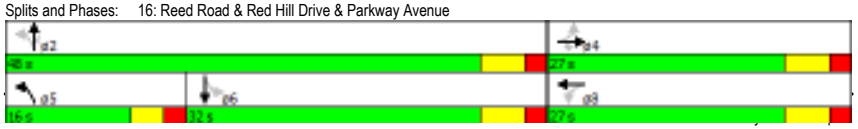
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 11.1 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 110 | 82 | 251 | 23 | 85 | 3 | 251 | 351 | 29 | 4 | 300 | 57 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | | 0.850 | | 0.979 | |
| Flt Protected | | 0.972 | | | 0.990 | | 0.950 | | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1688 | 1485 | 0 | 1812 | 0 | 1643 | 1747 | 1499 | 0 | 1811 | 0 |
| Flt Permitted | | 0.795 | | | 0.908 | | 0.326 | | | | 0.995 | |
| Satd. Flow (perm) | 0 | 1381 | 1485 | 0 | 1662 | 0 | 564 | 1747 | 1499 | 0 | 1804 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | 2 | | | | 44 | | 14 | |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 309 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 6.0 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Adj. Flow (vph) | 116 | 86 | 264 | 24 | 89 | 3 | 264 | 369 | 31 | 4 | 316 | 60 |
| Lane Group Flow (vph) | 0 | 202 | 264 | 0 | 116 | 0 | 264 | 369 | 31 | 0 | 380 | 0 |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 16.0 | 48.0 | 48.0 | 32.0 | 32.0 | |
| Total Split (%) | 36.0% | 36.0% | 36.0% | 36.0% | 36.0% | | 21.3% | 64.0% | 64.0% | 42.7% | 42.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 61.2 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 110 | 82 | 251 | 23 | 85 | 3 | 251 | 351 | 29 | 4 | 300 | 57 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1737 | 1747 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1864 | 1836 |
| Adj Flow Rate, veh/h | 116 | 86 | 222 | 24 | 89 | 2 | 264 | 369 | 29 | 4 | 316 | 45 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 304 | 185 | 359 | 133 | 359 | 7 | 680 | 960 | 824 | 78 | 473 | 67 |
| Arrive On Green | 0.22 | 0.24 | 0.24 | 0.22 | 0.24 | 0.22 | 0.17 | 0.55 | 0.55 | 0.28 | 0.30 | 0.28 |
| Sat Flow, veh/h | 769 | 763 | 1485 | 173 | 1486 | 29 | 1647 | 1747 | 1499 | 6 | 1589 | 224 |
| Grp Volume(v), veh/h | 202 | 0 | 222 | 115 | 0 | 0 | 264 | 369 | 29 | 365 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1533 | 0 | 1485 | 1689 | 0 | 0 | 1647 | 1747 | 1499 | 1819 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 6.4 | 0.0 | 0.0 | 0.0 | 4.4 | 5.8 | 0.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 6.4 | 5.0 | 0.0 | 0.0 | 4.4 | 5.8 | 0.4 | 8.6 | 0.0 | 0.0 |
| Prop In Lane | 0.57 | | 1.00 | 0.21 | | 0.02 | 1.00 | | 1.00 | 0.01 | | 0.12 |
| Lane Grp Cap(c), veh/h | 457 | 0 | 359 | 463 | 0 | 0 | 680 | 960 | 824 | 579 | 0 | 0 |
| V/C Ratio(X) | 0.44 | 0.00 | 0.62 | 0.25 | 0.00 | 0.00 | 0.39 | 0.38 | 0.04 | 0.63 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 760 | 0 | 682 | 809 | 0 | 0 | 816 | 1568 | 1346 | 1060 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.9 | 0.0 | 16.2 | 14.8 | 0.0 | 0.0 | 6.7 | 6.2 | 5.0 | 14.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 1.7 | 0.3 | 0.0 | 0.0 | 0.4 | 0.3 | 0.0 | 1.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.5 | 0.0 | 5.0 | 2.3 | 0.0 | 0.0 | 3.7 | 5.1 | 0.3 | 8.1 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 16.6 | 0.0 | 17.9 | 15.1 | 0.0 | 0.0 | 7.1 | 6.4 | 5.0 | 16.0 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | A | A | B | | |
| Approach Vol, veh/h | | 424 | | | 115 | | | 662 | | | 365 | |
| Approach Delay, s/veh | | 17.3 | | | 15.1 | | | 6.6 | | | 16.0 | |
| Approach LOS | | B | | | B | | | A | | | B | |

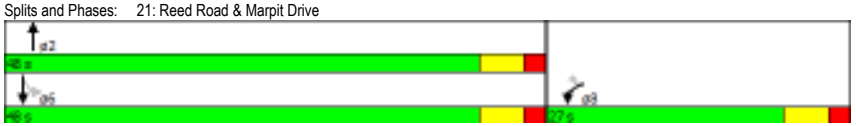
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 31.3 | | 16.6 | 12.0 | 19.3 | | 16.6 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | 11.0 | 26.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 8.3 | | 8.9 | 6.9 | 10.6 | | 7.0 |
| Green Ext Time (p_c), s | | 3.1 | | 1.7 | 0.3 | 2.7 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 206 | 74 | 361 | 143 | 84 | 452 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 1 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | 0.962 | | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1660 | 1471 | 1705 | 0 | 1693 | 1782 |
| Flt Permitted | 0.950 | | | | 0.364 | |
| Satd. Flow (perm) | 1660 | 1471 | 1705 | 0 | 649 | 1782 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 80 | 45 | | | |
| Link Speed (mph) | 35 | | 35 | | | 35 |
| Link Distance (ft) | 437 | | 386 | | | 311 |
| Travel Time (s) | 8.5 | | 7.5 | | | 6.1 |
| Adj. Flow (vph) | 222 | 80 | 388 | 154 | 90 | 486 |
| Lane Group Flow (vph) | 222 | 80 | 542 | 0 | 90 | 486 |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 15.0 | | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | 21.0 | | 21.0 | 21.0 |
| Total Split (s) | 27.0 | 27.0 | 48.0 | | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | 64.0% | | 64.0% | 64.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | Min | | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 45.3 | |
| Natural Cycle: 40 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Marpit Drive








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 206 | 74 | 361 | 143 | 84 | 452 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1748 | 1731 | 1772 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 222 | 31 | 388 | 131 | 90 | 486 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 3 | 4 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 364 | 322 | 651 | 220 | 454 | 914 |
| Arrive On Green | 0.22 | 0.22 | 0.51 | 0.49 | 0.51 | 0.51 |
| Sat Flow, veh/h | 1664 | 1471 | 1268 | 428 | 841 | 1782 |
| Grp Volume(v), veh/h | 222 | 31 | 0 | 519 | 90 | 486 |
| Grp Sat Flow(s),veh/h/ln | 1664 | 1471 | 0 | 1697 | 841 | 1782 |
| Q Serve(g_s), s | 4.5 | 0.6 | 0.0 | 8.1 | 3.1 | 6.8 |
| Cycle Q Clear(g_c), s | 4.5 | 0.6 | 0.0 | 8.1 | 10.6 | 6.8 |
| Prop In Lane | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Lane Grp Cap(c), veh/h | 364 | 322 | 0 | 870 | 454 | 914 |
| V/C Ratio(X) | 0.61 | 0.10 | 0.00 | 0.60 | 0.20 | 0.53 |
| Avail Cap(c_a), veh/h | 983 | 869 | 0 | 1958 | 993 | 2057 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.1 | 11.6 | 0.0 | 6.5 | 9.9 | 6.1 |
| Incr Delay (d2), s/veh | 1.7 | 0.1 | 0.0 | 0.7 | 0.2 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.0 | 0.5 | 0.0 | 6.8 | 1.3 | 6.1 |
| LnGrp Delay(d),s/veh | 14.8 | 11.7 | 0.0 | 7.1 | 10.1 | 6.6 |
| LnGrp LOS | B | B | | A | B | A |
| Approach Vol, veh/h | 253 | | 519 | | | 576 |
| Approach Delay, s/veh | 14.4 | | 7.1 | | | 7.1 |
| Approach LOS | B | | A | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 24.1 | | | | 24.1 | | 13.1 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | | | 42.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 10.1 | | | | 13.1 | | 7.0 |
| Green Ext Time (p_c), s | | 5.0 | | | | 5.0 | | 0.7 |

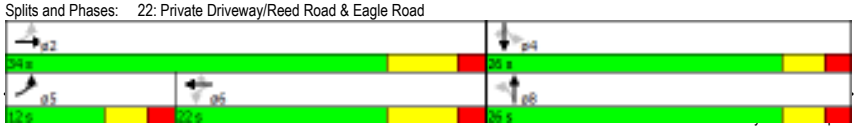
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.5 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 151 | 209 | 0 | 0 | 297 | 356 | 1 | 0 | 1 | 476 | 0 | 181 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.932 | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | | 0.976 | | | 0.950 | |
| Satd. Flow (prot) | 1778 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 1828 | 0 | 0 | 1668 | 1625 |
| Flt Permitted | 0.365 | | | | | | | 0.886 | | | 0.757 | |
| Satd. Flow (perm) | 683 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 1660 | 0 | 0 | 1329 | 1625 |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | 383 | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Adj. Flow (vph) | 162 | 225 | 0 | 0 | 319 | 383 | 1 | 0 | 1 | 512 | 0 | 195 |
| Lane Group Flow (vph) | 162 | 225 | 0 | 0 | 319 | 383 | 0 | 2 | 0 | 0 | 512 | 195 |
| Turn Type | pm+pt | NA | | | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 34.0 | | 22.0 | 22.0 | 22.0 | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 |
| Total Split (%) | 20.0% | 56.7% | | 36.7% | 36.7% | 36.7% | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 57.6
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 151 | 209 | 0 | 0 | 297 | 356 | 1 | 0 | 1 | 476 | 0 | 181 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1808 |
| Adj Flow Rate, veh/h | 162 | 225 | 0 | 0 | 319 | 211 | 1 | 0 | 1 | 512 | 0 | 184 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cap, veh/h | 415 | 840 | 0 | 0 | 469 | 402 | 92 | 31 | 31 | 448 | 0 | 573 |
| Arrive On Green | 0.11 | 0.45 | 0.00 | 0.00 | 0.27 | 0.27 | 0.36 | 0.00 | 0.36 | 0.36 | 0.00 | 0.38 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 83 | 83 | 893 | 0 | 1537 |
| Grp Volume(v), veh/h | 162 | 225 | 0 | 0 | 319 | 211 | 2 | 0 | 0 | 512 | 0 | 184 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 166 | 0 | 0 | 893 | 0 | 1537 |
| Q Serve(g_s), s | 3.3 | 4.5 | 0.0 | 0.0 | 9.6 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 |
| Cycle Q Clear(g_c), s | 3.3 | 4.5 | 0.0 | 0.0 | 9.6 | 7.1 | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 5.0 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 415 | 840 | 0 | 0 | 469 | 402 | 151 | 0 | 0 | 433 | 0 | 573 |
| V/C Ratio(X) | 0.39 | 0.27 | 0.00 | 0.00 | 0.68 | 0.53 | 0.01 | 0.00 | 0.00 | 1.18 | 0.00 | 0.32 |
| Avail Cap(c_a), veh/h | 462 | 879 | 0 | 0 | 473 | 402 | 152 | 0 | 0 | 444 | 0 | 578 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.2 | 9.9 | 0.0 | 0.0 | 19.2 | 18.1 | 15.0 | 0.0 | 0.0 | 22.1 | 0.0 | 13.2 |
| Incr Delay (d2), s/veh | 0.6 | 0.3 | 0.0 | 0.0 | 4.7 | 2.0 | 0.0 | 0.0 | 0.0 | 103.8 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.1 | 4.2 | 0.0 | 0.0 | 8.9 | 5.7 | 0.0 | 0.0 | 0.0 | 35.4 | 0.0 | 3.9 |
| LnGrp Delay(d),s/veh | 12.8 | 10.2 | 0.0 | 0.0 | 23.9 | 20.2 | 15.0 | 0.0 | 0.0 | 125.9 | 0.0 | 13.5 |
| LnGrp LOS | B | B | | | C | C | B | | | F | | B |
| Approach Vol, veh/h | | 387 | | | 530 | | | 2 | | | 696 | |
| Approach Delay, s/veh | | 11.3 | | | 22.4 | | | 15.0 | | | 96.2 | |
| Approach LOS | | B | | | C | | | B | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.5 | | 26.0 | 10.5 | 22.0 | | 26.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 21.0 | 7.0 | 15.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 7.0 | | 23.0 | 5.8 | 12.1 | | 23.0 |
| Green Ext Time (p_c), s | | 5.2 | | 0.0 | 0.1 | 1.4 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 51.5 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 2% | -2% | |
| Storage Length (ft) | 0 | 0 | 70 | | | 0 |
| Storage Lanes | 1 | 0 | 1 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | 0.923 | | | | 0.994 | |
| Flt Protected | 0.979 | | 0.950 | | | |
| Satd. Flow (prot) | 1499 | 0 | 1465 | 3319 | 3398 | 0 |
| Flt Permitted | 0.979 | | 0.950 | | | |
| Satd. Flow (perm) | 1499 | 0 | 1465 | 3319 | 3398 | 0 |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 1034 | | | 519 | 187 | |
| Travel Time (s) | 28.2 | | | 8.8 | 3.2 | |
| Adj. Flow (vph) | 18 | 24 | 58 | 1946 | 1592 | 63 |
| Lane Group Flow (vph) | 42 | 0 | 58 | 1946 | 1655 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 18 | 24 | 57 | 1927 | 1576 | 62 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 70 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -2 | - | - | 2 | -2 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 0 | 4 | 4 | 2 | 1 | 2 |
| Mvmt Flow | 18 | 24 | 58 | 1946 | 1592 | 63 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2711 | 827 | 1655 | 0 | - | 0 |
| Stage 1 | 1623 | - | - | - | - | - |
| Stage 2 | 1088 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.1 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *~ 13 | *571 | 651 | - | - | - |
| Stage 1 | *584 | - | - | - | - | - |
| Stage 2 | *340 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 12 | *571 | 651 | - | - | - |
| Mov Cap-2 Maneuver | *~ 12 | - | - | - | - | - |
| Stage 1 | *584 | - | - | - | - | - |
| Stage 2 | *310 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 599.7 | 0.3 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 651 | - | 27 | - | - |
| HCM Lane V/C Ratio | 0.088 | - | 1.571 | - | - |
| HCM Control Delay (s) | 11.1 | - | $ 599.7 | - | - |
| HCM Lane LOS | B | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 5.1 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 100 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.882 | | | 0.955 | | | | | | | |
| Flt Protected | | 0.994 | | | 0.968 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1777 | 0 | 0 | 1689 | 0 | 1693 | 3352 | 0 | 1693 | 3352 | 0 |
| Flt Permitted | | 0.994 | | | 0.968 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1777 | 0 | 0 | 1689 | 0 | 1693 | 3352 | 0 | 1693 | 3352 | 0 |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 473 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.1 | |
| Adj. Flow (vph) | 22 | 0 | 152 | 2 | 0 | 1 | 32 | 1492 | 0 | 15 | 1510 | 1 |
| Lane Group Flow (vph) | 0 | 174 | 0 | 0 | 3 | 0 | 32 | 1492 | 0 | 15 | 1511 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 39.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 20 | 0 | 141 | 2 | 0 | 1 | 30 | 1388 | 0 | 14 | 1404 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Stop | - | - | None | - | - | None | - | - | Yield |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | -3 | - | - | 2 | - | - | 2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 22 | 0 | 152 | 2 | 0 | 1 | 32 | 1492 | 0 | 15 | 1510 | 1 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2351 | 3097 | 755 | 2342 | 3097 | 746 | 1510 | 0 | 0 | 1492 | 0 | 0 |
| Stage 1 | 1540 | 1540 | - | 1557 | 1557 | - | - | - | - | - | - | - |
| Stage 2 | 811 | 1557 | - | 785 | 1540 | - | - | - | - | - | - | - |
| Critical Hdwy | 8.5 | 6.5 | 7.2 | 7.8 | 5.9 | 6.9 | 3.9 | - | - | 3.9 | - | - |
| Critical Hdwy Stg 1 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 7.5 | 5.5 | - | 6.8 | 4.9 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 4 | 2.9 | 2.8 | 4 | 2.9 | 2.4 | - | - | 2.4 | - | - |
| Pot Cap-1 Maneuver | *~ 11 | *12 | *591 | *17 | *20 | *578 | *715 | - | - | *699 | - | - |
| Stage 1 | *612 | *429 | - | *599 | *419 | - | - | - | - | - | - | - |
| Stage 2 | *599 | *419 | - | *612 | *429 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | 1 | | | 1 | 1 | - | - | 1 | - | - |
| Mov Cap-1 Maneuver | *~ 10 | *11 | *591 | *12 | *19 | *578 | *715 | - | - | *699 | - | - |
| Mov Cap-2 Maneuver | *~ 10 | *11 | - | *12 | *19 | - | - | - | - | - | - | - |
| Stage 1 | *585 | *420 | - | *572 | *401 | - | - | - | - | - | - | - |
| Stage 2 | *571 | *401 | - | *445 | *420 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 731.9 | 244.5 | 0.2 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 715 | - | - | 74 | 18 | * 699 | - | - |
| HCM Lane V/C Ratio | 0.045 | - | - | 2.339 | 0.179 | 0.022 | - | - |
| HCM Control Delay (s) | 10.3 | - | - | $ 731.9 | 244.5 | 10.3 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 16.4 | 0.5 | 0.1 | - | - |

| Notes |
|---|

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 2% | -2% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1710 | 1530 | 0 | 3352 | 3420 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1710 | 1530 | 0 | 3352 | 3420 | 0 |
| Link Speed (mph) | 25 | | | 40 | 40 | |
| Link Distance (ft) | 265 | | | 870 | 546 | |
| Travel Time (s) | 7.2 | | | 14.8 | 9.3 | |
| Adj. Flow (vph) | 14 | 77 | 0 | 1652 | 1573 | 0 |
| Lane Group Flow (vph) | 14 | 77 | 0 | 1652 | 1573 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 72 | 0 | 1536 | 1463 | 0 |
| Conflicting Peds, #/hr | 1 | 1 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 2 | -2 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 0 |
| Mvmt Flow | 14 | 77 | 0 | 1652 | 1573 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2400 | 788 | 1574 | 0 | - | 0 |
| Stage 1 | 1574 | - | - | - | - | - |
| Stage 2 | 826 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | 3.9 | - | - | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | *16 | *525 | *680 | - | - | - |
| Stage 1 | *543 | - | - | - | - | - |
| Stage 2 | *510 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *16 | *525 | *680 | - | - | - |
| Mov Cap-2 Maneuver | *247 | - | - | - | - | - |
| Stage 1 | *543 | - | - | - | - | - |
| Stage 2 | *510 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.1 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | * 680 | - | 247 | 525 | - | - |
| HCM Lane V/C Ratio | - | - | 0.057 | 0.147 | - | - |
| HCM Control Delay (s) | 0 | - | 20.4 | 13 | - | - |
| HCM Lane LOS | A | - | C | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | 0.5 | - | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | |
| Frt | 0.865 | | | | | |
| Flt Protected | | | | | | 0.999 |
| Satd. Flow (prot) | 1782 | 0 | 3420 | 0 | 0 | 3349 |
| Flt Permitted | | | | | | 0.999 |
| Satd. Flow (perm) | 1782 | 0 | 3420 | 0 | 0 | 3349 |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Adj. Flow (vph) | 0 | 27 | 1570 | 5 | 26 | 1626 |
| Lane Group Flow (vph) | 27 | 0 | 1575 | 0 | 0 | 1652 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 1539 | 5 | 25 | 1593 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 27 | 1570 | 5 | 26 | 1626 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2437 | 790 | 0 | 0 | 1576 | 0 |
| Stage 1 | 1573 | - | - | - | - | - |
| Stage 2 | 864 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *20 | *528 | - | - | *639 | - |
| Stage 1 | *547 | - | - | - | - | - |
| Stage 2 | *491 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *12 | *527 | - | - | *638 | - |
| Mov Cap-2 Maneuver | *12 | - | - | - | - | - |
| Stage 1 | *547 | - | - | - | - | - |
| Stage 2 | *285 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.2 | 0 | 2.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 527 | * 638 | - |
| HCM Lane V/C Ratio | - | - | 0.05 | 0.04 | - |
| HCM Control Delay (s) | - | - | 12.2 | 10.9 | 2.2 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.922 | | | | 0.951 | |
| Flt Protected | 0.979 | | | 0.995 | | |
| Satd. Flow (prot) | 1516 | 0 | 0 | 1711 | 1647 | 0 |
| Flt Permitted | 0.979 | | | 0.995 | | |
| Satd. Flow (perm) | 1516 | 0 | 0 | 1711 | 1647 | 0 |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Adj. Flow (vph) | 92 | 126 | 87 | 729 | 544 | 307 |
| Lane Group Flow (vph) | 218 | 0 | 0 | 816 | 851 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 20.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 80 | 110 | 76 | 634 | 473 | 267 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 0 | 0 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 92 | 126 | 87 | 729 | 544 | 307 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1600 | 697 | 851 | 0 | - | 0 |
| Stage 1 | 697 | - | - | - | - | - |
| Stage 2 | 903 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | 126 | 537 | 630 | - | - | - |
| Stage 1 | 586 | - | - | - | - | - |
| Stage 2 | 431 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | 97 | 537 | 630 | - | - | - |
| Mov Cap-2 Maneuver | 97 | - | - | - | - | - |
| Stage 1 | 586 | - | - | - | - | - |
| Stage 2 | 331 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 174.6 | 1.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 630 | - | 185 | - | - |
| HCM Lane V/C Ratio | 0.139 | - | 1.18 | - | - |
| HCM Control Delay (s) | 11.6 | 0 | 174.6 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 11.4 | - | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.970 | | 0.899 | |
| Flt Protected | | 0.978 | | | 0.987 | |
| Satd. Flow (prot) | 0 | 3228 | 1767 | 0 | 1577 | 0 |
| Flt Permitted | | 0.978 | | | 0.987 | |
| Satd. Flow (perm) | 0 | 3228 | 1767 | 0 | 1577 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 417 | 303 | | 589 | |
| Travel Time (s) | | 8.1 | 5.9 | | 16.1 | |
| Adj. Flow (vph) | 271 | 343 | 357 | 101 | 54 | 158 |
| Lane Group Flow (vph) | 0 | 614 | 458 | 0 | 212 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 8.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 257 | 326 | 339 | 96 | 51 | 150 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 1 | 2 | 1 | 0 | 2 | 1 |
| Mvmt Flow | 271 | 343 | 357 | 101 | 54 | 158 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 458 | 0 | - | 0 | 1120 | 407 |
| Stage 1 | - | - | - | - | 407 | - |
| Stage 2 | - | - | - | - | 713 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1060 | - | - | - | 179 | 660 |
| Stage 1 | - | - | - | - | 694 | - |
| Stage 2 | - | - | - | - | 422 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1060 | - | - | - | 122 | 660 |
| Mov Cap-2 Maneuver | - | - | - | - | 122 | - |
| Stage 1 | - | - | - | - | 694 | - |
| Stage 2 | - | - | - | - | 289 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 4.5 | 0 | 38 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1060 | - | - | - | 311 |
| HCM Lane V/C Ratio | 0.255 | - | - | - | 0.68 |
| HCM Control Delay (s) | 9.6 | 0.6 | - | - | 38 |
| HCM Lane LOS | A | A | - | - | E |
| HCM 95th %tile Q(veh) | 1 | - | - | - | 4.6 |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | 4% | | 0% | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.980 | | 0.955 | |
| Flt Protected | | 0.995 | | | 0.968 | |
| Satd. Flow (prot) | 0 | 3363 | 1714 | 0 | 1653 | 0 |
| Flt Permitted | | 0.995 | | | 0.968 | |
| Satd. Flow (perm) | 0 | 3363 | 1714 | 0 | 1653 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 303 | 285 | | 309 | |
| Travel Time (s) | | 5.9 | 5.6 | | 8.4 | |
| Adj. Flow (vph) | 38 | 380 | 388 | 69 | 89 | 44 |
| Lane Group Flow (vph) | 0 | 418 | 457 | 0 | 133 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 36 | 357 | 365 | 65 | 84 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 4 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 1 | 1 | 0 | 1 | 0 |
| Mvmt Flow | 38 | 380 | 388 | 69 | 89 | 44 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 457 | 0 | - | 0 | 689 | 423 |
| Stage 1 | - | - | - | - | 423 | - |
| Stage 2 | - | - | - | - | 266 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.5 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1061 | - | - | - | 375 | 646 |
| Stage 1 | - | - | - | - | 679 | - |
| Stage 2 | - | - | - | - | 816 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1061 | - | - | - | 358 | 646 |
| Mov Cap-2 Maneuver | - | - | - | - | 358 | - |
| Stage 1 | - | - | - | - | 679 | - |
| Stage 2 | - | - | - | - | 779 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1 | 0 | 17.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1061 | - | - | - | 419 |
| HCM Lane V/C Ratio | 0.036 | - | - | - | 0.317 |
| HCM Control Delay (s) | 8.5 | 0.2 | - | - | 17.5 |
| HCM Lane LOS | A | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 1.3 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.884 | | 0.995 | | | |
| Flt Protected | 0.993 | | | | | 0.989 |
| Satd. Flow (prot) | 1562 | 0 | 1748 | 0 | 0 | 1767 |
| Flt Permitted | 0.993 | | | | | 0.989 |
| Satd. Flow (perm) | 1562 | 0 | 1748 | 0 | 0 | 1767 |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Adj. Flow (vph) | 40 | 241 | 455 | 18 | 160 | 541 |
| Lane Group Flow (vph) | 281 | 0 | 473 | 0 | 0 | 701 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 38 | 227 | 428 | 17 | 150 | 509 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 40 | 241 | 455 | 18 | 160 | 541 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1316 | 455 | 0 | 0 | 455 | 0 |
| Stage 1 | 455 | - | - | - | - | - |
| Stage 2 | 861 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 218 | 656 | - | - | 837 | - |
| Stage 1 | 764 | - | - | - | - | - |
| Stage 2 | 505 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 158 | 656 | - | - | 837 | - |
| Mov Cap-2 Maneuver | 286 | - | - | - | - | - |
| Stage 1 | 764 | - | - | - | - | - |
| Stage 2 | 367 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.1 | 0 | 2.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 553 | 837 | - |
| HCM Lane V/C Ratio | - | - | 0.51 | 0.191 | - |
| HCM Control Delay (s) | - | - | 18.1 | 10.3 | 0 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.9 | 0.7 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.996 | | 0.907 | |
| Flt Protected | 0.950 | | | | 0.985 | |
| Satd. Flow (prot) | 1710 | 1782 | 3347 | 0 | 1841 | 0 |
| Flt Permitted | 0.950 | | | | 0.985 | |
| Satd. Flow (perm) | 1710 | 1782 | 3347 | 0 | 1841 | 0 |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Adj. Flow (vph) | 6 | 278 | 491 | 13 | 31 | 68 |
| Lane Group Flow (vph) | 6 | 278 | 504 | 0 | 99 | 0 |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 217 | 383 | 10 | 24 | 53 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 5 | 5 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 0 | 1 | 1 | 11 | 0 | 0 |
| Mvmt Flow | 6 | 278 | 491 | 13 | 31 | 68 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 509 | 0 | - | 0 | 793 | 257 |
| Stage 1 | - | - | - | - | 502 | - |
| Stage 2 | - | - | - | - | 291 | - |
| Critical Hdwy | 4.3 | - | - | - | 6.2 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5 | - |
| Follow-up Hdwy | 3 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 802 | - | - | - | 418 | 802 |
| Stage 1 | - | - | - | - | 692 | - |
| Stage 2 | - | - | - | - | 902 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 802 | - | - | - | 410 | 798 |
| Mov Cap-2 Maneuver | - | - | - | - | 410 | - |
| Stage 1 | - | - | - | - | 688 | - |
| Stage 2 | - | - | - | - | 890 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 12 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 802 | - | - | - | 616 |
| HCM Lane V/C Ratio | 0.008 | - | - | - | 0.16 |
| HCM Control Delay (s) | 9.5 | - | - | - | 12 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 129 | 55 | 169 | 9 | 43 | 22 | 114 | 305 | 4 | 24 | 184 | 124 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 217 | | | 179 | | | 380 | | | 604 | |
| Travel Time (s) | | 5.9 | | | 4.9 | | | 10.4 | | | 16.5 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 19.4 |
| Intersection LOS | C |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 129 | 55 | 169 | 0 | 9 | 43 | 22 | 0 | 114 | 305 | 4 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 0 | 1 | 2 | 11 | 0 | 5 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 0 | 139 | 59 | 182 | 0 | 10 | 46 | 24 | 0 | 123 | 328 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 13.8 | 12 | 26.6 |
| HCM LOS | B | B | D |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 27% | 70% | 0% | 12% | 7% |
| Vol Thru, % | 72% | 30% | 0% | 58% | 55% |
| Vol Right, % | 1% | 0% | 100% | 30% | 37% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 423 | 184 | 169 | 74 | 332 |
| LT Vol | 114 | 129 | 0 | 9 | 24 |
| Through Vol | 305 | 55 | 0 | 43 | 184 |
| RT Vol | 4 | 0 | 169 | 22 | 124 |
| Lane Flow Rate | 455 | 198 | 182 | 80 | 357 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.769 | 0.41 | 0.322 | 0.165 | 0.599 |
| Departure Headway (Hd) | 6.088 | 7.456 | 6.379 | 7.473 | 6.038 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 596 | 483 | 563 | 478 | 596 |
| Service Time | 4.13 | 5.203 | 4.126 | 5.542 | 4.083 |
| HCM Lane V/C Ratio | 0.763 | 0.41 | 0.323 | 0.167 | 0.599 |
| HCM Control Delay | 26.6 | 15.3 | 12.1 | 12 | 17.8 |
| HCM Lane LOS | D | C | B | B | C |
| HCM 95th-tile Q | 7.1 | 2 | 1.4 | 0.6 | 4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 24 | 184 | 124 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 26 | 198 | 133 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 17.8 |
| HCM LOS | C |

| Lane |
|---|

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 205 | 45 | 127 | 309 | 73 | 129 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1459 | | | 573 | 481 | |
| Travel Time (s) | 33.2 | | | 13.0 | 10.9 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 5.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 205 | 45 | 127 | 309 | 73 | 129 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 218 | 48 | 135 | 329 | 78 | 137 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 218 | 0 | 817 | 218 |
| Stage 1 | - | - | - | - | 218 | - |
| Stage 2 | - | - | - | - | 599 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 1011 | - | 225 | 814 |
| Stage 1 | - | - | - | - | 818 | - |
| Stage 2 | - | - | - | - | 416 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1011 | - | 188 | 814 |
| Mov Cap-2 Maneuver | - | - | - | - | 188 | - |
| Stage 1 | - | - | - | - | 818 | - |
| Stage 2 | - | - | - | - | 348 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.7 | 19.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 188 | 814 | - | - | 1011 | - |
| HCM Lane V/C Ratio | 0.413 | 0.169 | - | - | 0.134 | - |
| HCM Control Delay (s) | 37 | 10.3 | - | - | 9.1 | 0 |
| HCM Lane LOS | E | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 1.9 | 0.6 | - | - | 0.5 | - |

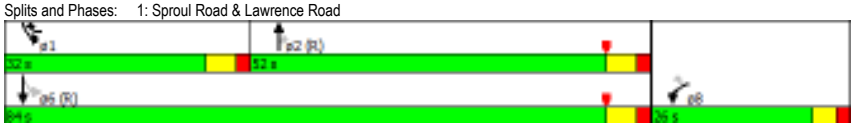
# *2025 PROJECTED CONDITIONS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 357 | 665 | 1319 | 404 | 417 | 906 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 26.0 | 32.0 | 52.0 | 52.0 | 32.0 | 84.0 |
| Total Split (%) | 23.6% | 29.1% | 47.3% | 47.3% | 29.1% | 76.4% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 357 | 665 | 1319 | 404 | 417 | 906 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1713 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 364 | 611 | 1346 | 320 | 426 | 924 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 317 | 631 | 1425 | 669 | 479 | 2481 |
| Arrive On Green | 0.20 | 0.20 | 0.45 | 0.45 | 0.22 | 0.72 |
| Sat Flow, veh/h | 1585 | 1456 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 364 | 611 | 1346 | 320 | 426 | 924 |
| Grp Sat Flow(s),veh/h/ln | 1585 | 1456 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 22.0 | 22.0 | 42.7 | 16.0 | 20.1 | 11.3 |
| Cycle Q Clear(g_c), s | 22.0 | 22.0 | 42.7 | 16.0 | 20.1 | 11.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 317 | 631 | 1425 | 669 | 479 | 2481 |
| V/C Ratio(X) | 1.15 | 0.97 | 0.94 | 0.48 | 0.89 | 0.37 |
| Avail Cap(c_a), veh/h | 317 | 611 | 1469 | 690 | 522 | 2481 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.15 | 0.15 | 0.56 | 0.56 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.0 | 30.4 | 29.9 | 21.9 | 32.8 | 6.0 |
| Incr Delay (d2), s/veh | 72.9 | 8.3 | 8.8 | 1.4 | 16.2 | 0.4 |
| Initial Q Delay(d3),s/veh | 29.1 | 0.0 | 1.6 | 0.0 | 1.1 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 31.8 | 22.3 | 27.8 | 10.4 | 21.3 | 9.2 |
| LnGrp Delay(d),s/veh | 146.0 | 38.8 | 40.3 | 23.3 | 50.2 | 6.4 |
| LnGrp LOS | F | D | D | C | D | A |
| Approach Vol, veh/h | 975 | | 1666 | | | 1350 |
| Approach Delay, s/veh | 78.8 | | 37.0 | | | 20.2 |
| Approach LOS | E | | D | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 29.1 | 54.9 | | | | 84.0 | | 26.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 26.0 | 46.0 | | | | 78.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 22.6 | 45.2 | | | | 13.8 | | 24.5 |
| Green Ext Time (p_c), s | 0.6 | 0.7 | | | | 21.5 | | 0.0 |

**Intersection Summary**

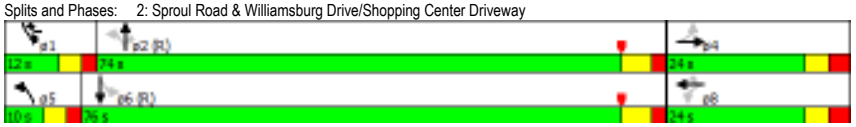
HCM 2010 Ctrl Delay 41.5
HCM 2010 LOS D

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 41 | 16 | 37 | 74 | 6 | 81 | 26 | 1656 | 84 | 86 | 1326 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 611 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.4 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 24.0 | 24.0 | | 24.0 | 24.0 | 12.0 | 10.0 | 74.0 | 74.0 | 12.0 | 76.0 | |
| Total Split (%) | 21.8% | 21.8% | | 21.8% | 21.8% | 10.9% | 9.1% | 67.3% | 67.3% | 10.9% | 69.1% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 101 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 41 | 16 | 37 | 74 | 6 | 81 | 26 | 1656 | 84 | 86 | 1326 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1699 | 1800 | 1764 | 1739 | 1696 | 1764 | 1696 | 1781 | 1748 | 1713 | 1800 |
| Adj Flow Rate, veh/h | 43 | 17 | 38 | 77 | 6 | 77 | 27 | 1725 | 0 | 90 | 1381 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 3 | 3 | 5 | 5 |
| Cap, veh/h | 87 | 40 | 50 | 200 | 13 | 295 | 329 | 2152 | 1011 | 214 | 2268 | 28 |
| Arrive On Green | 0.15 | 0.16 | 0.15 | 0.15 | 0.16 | 0.16 | 0.02 | 0.67 | 0.00 | 0.06 | 0.92 | 0.90 |
| Sat Flow, veh/h | 251 | 249 | 317 | 859 | 83 | 1442 | 1680 | 3223 | 1514 | 1664 | 3292 | 41 |
| Grp Volume(v), veh/h | 98 | 0 | 0 | 83 | 0 | 77 | 27 | 1725 | 0 | 90 | 682 | 716 |
| Grp Sat Flow(s),veh/h/ln | 817 | 0 | 0 | 943 | 0 | 1442 | 1680 | 1611 | 1514 | 1664 | 1627 | 1706 |
| Q Serve(g_s), s | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 0.6 | 42.1 | 0.0 | 1.8 | 8.7 | 8.8 |
| Cycle Q Clear(g_c), s | 14.4 | 0.0 | 0.0 | 9.5 | 0.0 | 4.9 | 0.6 | 42.1 | 0.0 | 1.8 | 8.7 | 8.8 |
| Prop In Lane | 0.44 | | 0.39 | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 170 | 0 | 0 | 205 | 0 | 295 | 329 | 2152 | 1011 | 214 | 1121 | 1175 |
| V/C Ratio(X) | 0.58 | 0.00 | 0.00 | 0.41 | 0.00 | 0.26 | 0.08 | 0.80 | 0.00 | 0.42 | 0.61 | 0.61 |
| Avail Cap(c_a), veh/h | 188 | 0 | 0 | 222 | 0 | 315 | 379 | 2152 | 1011 | 262 | 1121 | 1175 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.33 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.77 | 0.77 | 0.77 |
| Uniform Delay (d), s/veh | 46.0 | 0.0 | 0.0 | 43.3 | 0.0 | 36.7 | 5.5 | 13.3 | 0.0 | 17.3 | 1.8 | 1.8 |
| Incr Delay (d2), s/veh | 3.5 | 0.0 | 0.0 | 1.3 | 0.0 | 0.5 | 0.1 | 3.3 | 0.0 | 1.0 | 1.9 | 1.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.6 | 0.0 | 0.0 | 4.4 | 0.0 | 3.6 | 0.5 | 27.3 | 0.0 | 3.0 | 6.9 | 7.2 |
| LnGrp Delay(d),s/veh | 49.5 | 0.0 | 0.0 | 44.5 | 0.0 | 37.2 | 5.6 | 16.6 | 0.0 | 18.4 | 3.7 | 3.6 |
| LnGrp LOS | D | | | D | | D | A | B | | B | A | A |
| Approach Vol, veh/h | | 98 | | | 160 | | | 1752 | | | 1488 | |
| Approach Delay, s/veh | | 49.5 | | | 41.0 | | | 16.5 | | | 4.6 | |
| Approach LOS | | D | | | D | | | B | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.0 | 78.5 | | 22.5 | 6.7 | 80.8 | | 22.5 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 68.0 | | 18.0 | 5.0 | 70.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 44.6 | | 16.4 | 3.1 | 11.2 | | 11.5 |
| Green Ext Time (p_c), s | 0.0 | 17.0 | | 0.2 | 0.0 | 29.6 | | 0.5 |

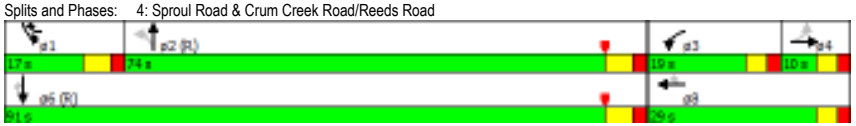
**Intersection Summary**

HCM 2010 Ctrl Delay 13.5
HCM 2010 LOS B

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 15 | 35 | 235 | 11 | 212 | 60 | 2052 | 293 | 249 | 1061 | 29 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 225 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 459 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.8 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 2% | 6% | 3% | 3% | 3% | 3% | 7% | 2% | 2% | 4% | 3% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 10.0 | 10.0 | | 19.0 | 29.0 | 17.0 | 74.0 | 74.0 | | 17.0 | 91.0 | 91.0 |
| Total Split (%) | 8.3% | 8.3% | | 15.8% | 24.2% | 14.2% | 61.7% | 61.7% | | 14.2% | 75.8% | 75.8% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 118 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 15 | 35 | 235 | 11 | 212 | 60 | 2052 | 293 | 249 | 1061 | 29 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1734 | 1818 | 1783 | 1783 | 1783 | 1730 | 1742 | 1853 | 1782 | 1818 | 1836 |
| Adj Flow Rate, veh/h | 23 | 15 | 29 | 240 | 11 | 171 | 61 | 2094 | 238 | 254 | 1083 | 24 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 7 | 7 | 2 | 4 | 3 |
| Cap, veh/h | 117 | 26 | 51 | 336 | 330 | 407 | 342 | 2263 | 255 | 329 | 2555 | 1141 |
| Arrive On Green | 0.05 | 0.05 | 0.04 | 0.10 | 0.19 | 0.18 | 1.00 | 1.00 | 1.00 | 0.10 | 0.74 | 0.73 |
| Sat Flow, veh/h | 1134 | 530 | 1024 | 3293 | 1783 | 1515 | 471 | 3785 | 426 | 3293 | 3454 | 1560 |
| Grp Volume(v), veh/h | 23 | 0 | 44 | 240 | 11 | 171 | 61 | 1400 | 932 | 254 | 1083 | 24 |
| Grp Sat Flow(s),veh/h/ln | 1134 | 0 | 1554 | 1647 | 1783 | 1515 | 471 | 1272 | 1667 | 1647 | 1727 | 1560 |
| Q Serve(g_s), s | 2.4 | 0.0 | 3.3 | 8.5 | 0.6 | 11.2 | 0.0 | 0.0 | 0.0 | 9.0 | 14.3 | 0.5 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 3.3 | 8.5 | 0.6 | 11.2 | 0.0 | 0.0 | 0.0 | 9.0 | 14.3 | 0.5 |
| Prop In Lane | 1.00 | | 0.66 | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 117 | 0 | 78 | 336 | 330 | 407 | 342 | 1521 | 997 | 329 | 2555 | 1141 |
| V/C Ratio(X) | 0.20 | 0.00 | 0.57 | 0.71 | 0.03 | 0.42 | 0.18 | 0.92 | 0.93 | 0.77 | 0.42 | 0.02 |
| Avail Cap(c_a), veh/h | 117 | 0 | 78 | 412 | 371 | 442 | 342 | 1521 | 997 | 329 | 2555 | 1141 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.3 | 0.0 | 56.1 | 52.2 | 40.1 | 36.2 | 0.0 | 0.0 | 0.0 | 52.7 | 5.9 | 4.4 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 9.3 | 4.5 | 0.0 | 0.7 | 1.1 | 10.6 | 16.6 | 10.7 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 0.0 | 2.9 | 7.3 | 0.5 | 8.4 | 0.2 | 4.0 | 8.1 | 8.1 | 11.3 | 0.4 |
| LnGrp Delay(d),s/veh | 56.1 | 0.0 | 65.3 | 56.7 | 40.1 | 36.9 | 1.1 | 10.6 | 16.6 | 63.4 | 6.4 | 4.4 |
| LnGrp LOS | E | | E | E | D | D | A | B | B | E | A | A |
| Approach Vol, veh/h | | 67 | | | 422 | | | 2393 | | | 1361 | |
| Approach Delay, s/veh | | 62.1 | | | 48.2 | | | 12.7 | | | 17.0 | |
| Approach LOS | | E | | | D | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 76.8 | 16.2 | 10.0 | | 93.8 | | 26.2 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 11.0 | 68.0 | 14.0 | 5.0 | | 85.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | 11.5 | 2.5 | 11.0 | 5.3 | | 16.8 | | 13.2 |
| Green Ext Time (p_c), s | 0.0 | 39.6 | 0.3 | 0.0 | | 40.5 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.4 |
| HCM 2010 LOS | B |

## 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway
## 2025 PROJECTED CONDITIONS

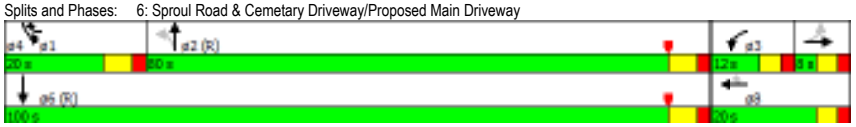
Timing Plan: AM PEAK

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 0 | 6 | 80 | 0 | 40 | 18 | 2337 | 111 | 75 | 1283 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 1 | | 1 | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 6% | 4% | 2% | 2% | 5% | 50% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 12.0 | 20.0 | 20.0 | 80.0 | 80.0 | | 20.0 | 100.0 | |
| Total Split (%) | 6.7% | 6.7% | | 10.0% | 16.7% | 16.7% | 66.7% | 66.7% | | 16.7% | 83.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

### Intersection Summary

| | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 110 (92%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway






## 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway
## 2025 PROJECTED CONDITIONS

Timing Plan: AM PEAK

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 4 | 0 | 6 | 80 | 0 | 40 | 18 | 2337 | 111 | 75 | 1283 | 2 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1872 | 1800 | 1863 | 1791 | 1791 | 1681 | 1784 | 1853 | 1747 | 1764 | 1853 |
| Adj Flow Rate, veh/h | 4 | 0 | 0 | 83 | 0 | 30 | 19 | 2434 | 82 | 78 | 1336 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 6 | 4 | 4 | 2 | 5 | 5 |
| Cap, veh/h | 94 | 47 | 0 | 178 | 198 | 274 | 319 | 2776 | 93 | 116 | 2730 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.05 | 0.00 | 0.11 | 1.00 | 1.00 | 1.00 | 0.14 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1328 | 1872 | 0 | 3442 | 1791 | 1523 | 368 | 3946 | 132 | 1664 | 3440 | 0 |
| Grp Volume(v), veh/h | 4 | 0 | 0 | 83 | 0 | 30 | 19 | 1426 | 1090 | 78 | 1336 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1328 | 1872 | 0 | 1721 | 1791 | 1523 | 368 | 1159 | 1760 | 1664 | 1676 | 0 |
| Q Serve(g_s), s | 0.4 | 0.0 | 0.0 | 2.8 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.4 | 0.0 | 0.0 | 2.8 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.08 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 94 | 47 | 0 | 178 | 198 | 274 | 319 | 1631 | 1238 | 116 | 2730 | 0 |
| V/C Ratio(X) | 0.04 | 0.00 | 0.00 | 0.47 | 0.00 | 0.11 | 0.06 | 0.87 | 0.88 | 0.67 | 0.49 | 0.00 |
| Avail Cap(c_a), veh/h | 104 | 62 | 0 | 229 | 239 | 309 | 319 | 1631 | 1238 | 208 | 2730 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.16 | 0.16 | 0.16 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 57.2 | 0.0 | 0.0 | 55.3 | 0.0 | 41.2 | 0.0 | 0.0 | 0.0 | 50.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 1.9 | 0.0 | 0.2 | 0.1 | 1.2 | 1.7 | 6.7 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 | 1.5 | 0.0 | 0.5 | 1.0 | 4.8 | 0.4 | 0.0 |
| LnGrp Delay(d),s/veh | 57.4 | 0.0 | 0.0 | 57.2 | 0.0 | 41.3 | 0.1 | 1.2 | 1.7 | 57.1 | 0.6 | 0.0 |
| LnGrp LOS | E | | | E | | D | A | A | A | E | A | |
| Approach Vol, veh/h | | 4 | | | 113 | | | 2535 | | | 1414 | |
| Approach Delay, s/veh | | 57.4 | | | 53.0 | | | 1.4 | | | 3.7 | |
| Approach LOS | | E | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.3 | 89.4 | 10.2 | 7.0 | | 102.7 | | 17.3 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 74.0 | 7.0 | 3.0 | | 94.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 7.8 | 2.5 | 5.3 | 2.9 | | 2.5 | | 4.0 |
| Green Ext Time (p_c), s | 0.1 | 48.8 | 0.0 | 0.0 | | 56.9 | | 0.0 |

### Intersection Summary

| | |
|---|---|
| HCM 2010 Ctrl Delay | 3.7 |
| HCM 2010 LOS | A |

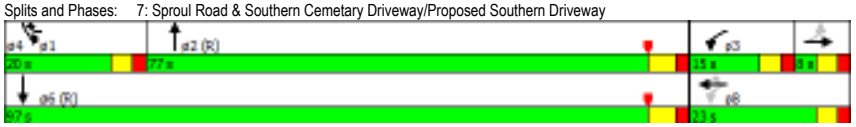
### Notes

User approved changes to right turn type.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 0 | 0 | 60 | 0 | 54 | 0 | 2378 | 51 | 51 | 1488 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 4% | 2% | 2% | 6% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 8.0 | | 22.0 | | 8.0 | 22.0 | |
| Total Split (s) | 8.0 | 8.0 | | 15.0 | 23.0 | 20.0 | | 77.0 | | 20.0 | 97.0 | |
| Total Split (%) | 6.7% | 6.7% | | 12.5% | 19.2% | 16.7% | | 64.2% | | 16.7% | 80.8% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 0 | 0 | 0 | 60 | 0 | 54 | 0 | 2378 | 51 | 51 | 1488 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1783 | 1853 | 1782 | 1784 | 0 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 65 | 0 | 46 | 0 | 2557 | 38 | 55 | 1600 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 4 | 4 | 2 | 6 | 0 |
| Cap, veh/h | 60 | 2 | 0 | 162 | 107 | 169 | 0 | 3139 | 47 | 89 | 2930 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 1.00 | 1.00 | 0.10 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1309 | 1800 | 0 | 1681 | 1765 | 1500 | 0 | 4654 | 60 | 1697 | 3478 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 65 | 0 | 46 | 0 | 1468 | 1127 | 55 | 1600 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1309 | 1800 | 0 | 1681 | 1765 | 1500 | 0 | 1159 | 1772 | 1697 | 1695 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.03 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 60 | 2 | 0 | 162 | 107 | 169 | 0 | 1805 | 1380 | 89 | 2930 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.40 | 0.00 | 0.27 | 0.00 | 0.81 | 0.82 | 0.62 | 0.55 | 0.00 |
| Avail Cap(c_a), veh/h | 147 | 60 | 0 | 214 | 279 | 316 | 0 | 1805 | 1380 | 226 | 2930 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.89 | 0.89 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 55.0 | 0.0 | 48.7 | 0.0 | 0.0 | 0.0 | 52.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.9 | 0.0 | 4.1 | 5.4 | 6.1 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.0 | 0.0 | 0.0 | 3.9 | 0.0 | 2.6 | 0.0 | 1.9 | 3.8 | 3.4 | 0.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 56.6 | 0.0 | 49.6 | 0.0 | 4.1 | 5.4 | 58.7 | 0.7 | 0.0 |
| LnGrp LOS | | | | E | | D | | A | A | E | A | |
| Approach Vol, veh/h | | 0 | | | 111 | | | 2595 | | | 1655 | |
| Approach Delay, s/veh | | 0.0 | | | 53.7 | | | 4.7 | | | 2.6 | |
| Approach LOS | | | | | D | | | A | | | A | |

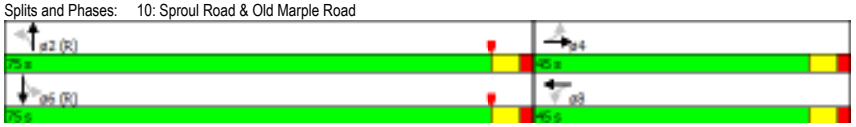
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 10.3 | 98.5 | 11.3 | 0.0 | | 108.7 | | 11.3 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 15.0 | 71.0 | 10.0 | 3.0 | | 91.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 2.5 | 7.0 | 0.0 | | 2.5 | | 5.9 |
| Green Ext Time (p_c), s | 0.1 | 52.5 | 0.0 | 0.0 | | 63.2 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.1 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 138 | 76 | 39 | 222 | 244 | 1 | 173 | 1221 | 41 | 1 | 837 | 150 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 45.0 | 45.0 | | 45.0 | 45.0 | | 75.0 | 75.0 | | 75.0 | 75.0 | |
| Total Split (%) | 37.5% | 37.5% | | 37.5% | 37.5% | | 62.5% | 62.5% | | 62.5% | 62.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 138 | 76 | 39 | 222 | 244 | 1 | 173 | 1221 | 41 | 1 | 837 | 150 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1801 | 1818 | 1782 | 1714 | 1782 | 1773 | 1718 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 147 | 81 | 36 | 236 | 260 | 1 | 184 | 1299 | 35 | 1 | 890 | 131 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 |
| Cap, veh/h | 245 | 130 | 52 | 251 | 228 | 1 | 93 | 1337 | 25 | 30 | 1566 | 245 |
| Arrive On Green | 0.32 | 0.33 | 0.33 | 0.32 | 0.33 | 0.32 | 0.57 | 0.58 | 0.57 | 0.57 | 0.58 | 0.57 |
| Sat Flow, veh/h | 596 | 390 | 156 | 621 | 684 | 3 | 201 | 1983 | 60 | 0 | 2684 | 421 |
| Grp Volume(v), veh/h | 264 | 0 | 0 | 497 | 0 | 0 | 617 | 0 | 901 | 547 | 0 | 475 |
| Grp Sat Flow(s),veh/h/ln | 1142 | 0 | 0 | 1307 | 0 | 0 | 692 | 0 | 1553 | 1578 | 0 | 1527 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 15.1 | 0.0 | 0.0 | 46.3 | 0.0 | 69.1 | 0.0 | 0.0 | 22.7 |
| Cycle Q Clear(g_c), s | 23.9 | 0.0 | 0.0 | 39.0 | 0.0 | 0.0 | 69.0 | 0.0 | 69.1 | 69.0 | 0.0 | 22.7 |
| Prop In Lane | 0.56 | | 0.14 | 0.47 | | 0.00 | 0.30 | | 0.04 | 0.00 | | 0.28 |
| Lane Grp Cap(c), veh/h | 418 | 0 | 0 | 469 | 0 | 0 | 565 | 0 | 908 | 937 | 0 | 891 |
| V/C Ratio(X) | 0.63 | 0.00 | 0.00 | 1.06 | 0.00 | 0.00 | 1.09 | 0.00 | 0.99 | 0.58 | 0.00 | 0.53 |
| Avail Cap(c_a), veh/h | 418 | 0 | 0 | 469 | 0 | 0 | 437 | 0 | 906 | 937 | 0 | 891 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.5 | 0.0 | 0.0 | 42.2 | 0.0 | 0.0 | 36.8 | 0.0 | 24.9 | 15.7 | 0.0 | 15.2 |
| Incr Delay (d2), s/veh | 3.1 | 0.0 | 0.0 | 58.2 | 0.0 | 0.0 | 65.0 | 0.0 | 28.2 | 2.7 | 0.0 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.7 | 0.0 | 0.0 | 41.8 | 0.0 | 0.0 | 53.3 | 0.0 | 46.9 | 17.5 | 0.0 | 15.3 |
| LnGrp Delay(d),s/veh | 37.6 | 0.0 | 0.0 | 100.4 | 0.0 | 0.0 | 107.6 | 0.0 | 54.4 | 18.4 | 0.0 | 17.5 |
| LnGrp LOS | D | | | F | | | F | | D | B | | B |
| Approach Vol, veh/h | | 264 | | | 497 | | | 1518 | | | 1022 | |
| Approach Delay, s/veh | | 37.6 | | | 100.4 | | | 76.0 | | | 18.0 | |
| Approach LOS | | D | | | F | | | E | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 75.0 | | 45.0 | | 75.0 | | 45.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 69.0 | | 39.0 | | 69.0 | | 39.0 |
| Max Q Clear Time (g_c+I1), s | | 71.1 | | 25.9 | | 71.0 | | 41.0 |
| Green Ext Time (p_c), s | | 0.0 | | 2.7 | | 0.0 | | 0.0 |

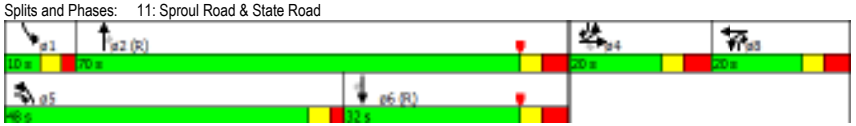
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 58.6 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 339 | 16 | 320 | 169 | 74 | 62 | 490 | 1179 | 332 | 21 | 597 | 437 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 48% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 20.0 | 20.0 | 48.0 | 20.0 | 20.0 | | 48.0 | 70.0 | 20.0 | 10.0 | 32.0 | 20.0 |
| Total Split (%) | 16.7% | 16.7% | 40.0% | 16.7% | 16.7% | | 40.0% | 58.3% | 16.7% | 8.3% | 26.7% | 16.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 339 | 16 | 320 | 169 | 74 | 62 | 490 | 1179 | 332 | 21 | 597 | 437 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1826 | 1786 | 1844 | 1872 | 1814 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 365 | 0 | 0 | 126 | 146 | 0 | 510 | 1228 | 0 | 22 | 622 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 406 | 0 | 709 | 193 | 196 | 0 | 570 | 1917 | 1011 | 44 | 851 | 560 |
| Arrive On Green | 0.12 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.33 | 0.57 | 0.00 | 0.03 | 0.26 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 365 | 0 | 0 | 126 | 146 | 0 | 510 | 1228 | 0 | 22 | 622 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 12.4 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 34.7 | 29.6 | 0.0 | 1.5 | 20.3 | 0.0 |
| Cycle Q Clear(g_c), s | 12.4 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 34.7 | 29.6 | 0.0 | 1.5 | 20.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 406 | 0 | 709 | 193 | 196 | 0 | 570 | 1917 | 1011 | 44 | 851 | 560 |
| V/C Ratio(X) | 0.90 | 0.00 | 0.00 | 0.65 | 0.74 | 0.00 | 0.90 | 0.64 | 0.00 | 0.50 | 0.73 | 0.00 |
| Avail Cap(c_a), veh/h | 406 | 0 | 696 | 208 | 212 | 0 | 622 | 1917 | 1011 | 86 | 879 | 572 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.3 | 0.0 | 0.0 | 51.4 | 51.9 | 0.0 | 38.7 | 17.7 | 0.0 | 57.7 | 40.8 | 0.0 |
| Incr Delay (d2), s/veh | 22.4 | 0.0 | 0.0 | 6.5 | 12.4 | 0.0 | 14.8 | 1.7 | 0.0 | 8.4 | 5.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.7 | 0.0 | 0.0 | 7.8 | 9.2 | 0.0 | 28.0 | 20.4 | 0.0 | 1.5 | 15.3 | 0.0 |
| LnGrp Delay(d),s/veh | 74.7 | 0.0 | 0.0 | 57.8 | 64.3 | 0.0 | 61.1 | 19.4 | 0.0 | 66.1 | 46.3 | 0.0 |
| LnGrp LOS | E | | | E | E | | E | B | | E | D | |
| Approach Vol, veh/h | | 365 | | | 272 | | | 1738 | | | 644 | |
| Approach Delay, s/veh | | 74.7 | | | 61.3 | | | 31.6 | | | 47.0 | |
| Approach LOS | | E | | | E | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.1 | 73.9 | | 20.0 | 43.3 | 37.8 | | 19.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 63.0 | | 13.0 | 43.0 | 25.0 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 32.1 | | 14.9 | 37.2 | 22.8 | | 11.9 |
| Green Ext Time (p_c), s | 0.0 | 10.4 | | 0.0 | 1.1 | 1.6 | | 0.1 |

**Intersection Summary**

HCM 2010 Ctrl Delay 42.8
HCM 2010 LOS D

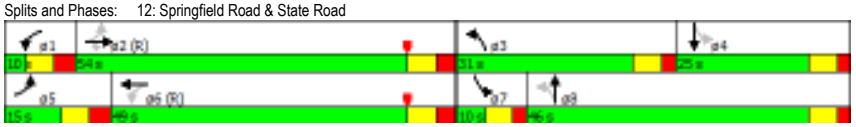
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 218 | 1048 | 311 | 13 | 1243 | 155 | 492 | 562 | 30 | 118 | 318 | 79 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 10% | 4% | 8% | 25% | 3% | 6% | 3% | 3% | 0% | 2% | 7% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 15.0 | 54.0 | 54.0 | 10.0 | 49.0 | | 31.0 | 46.0 | | 10.0 | 25.0 | |
| Total Split (%) | 12.5% | 45.0% | 45.0% | 8.3% | 40.8% | | 25.8% | 38.3% | | 8.3% | 20.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 24 (20%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 218 | 1048 | 311 | 13 | 1243 | 155 | 492 | 562 | 30 | 118 | 318 | 79 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 2 | 0 | 0 | 7 | 0 | 4 | 4 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1685 | 1783 | 1717 | 1397 | 1690 | 1746 | 1756 | 1759 | 1809 | 1791 | 1704 | 1827 |
| Adj Flow Rate, veh/h | 225 | 1080 | 0 | 13 | 1281 | 0 | 507 | 579 | 0 | 122 | 328 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 10 | 4 | 8 | 25 | 3 | 3 | 3 | 3 | 3 | 2 | 7 | 7 |
| Cap, veh/h | 180 | 1407 | 606 | 95 | 1150 | 0 | 422 | 601 | 0 | 134 | 284 | 0 |
| Arrive On Green | 0.08 | 0.42 | 0.00 | 0.02 | 0.36 | 0.00 | 0.22 | 0.34 | 0.00 | 0.08 | 0.33 | 0.00 |
| Sat Flow, veh/h | 1605 | 3387 | 1459 | 1330 | 3295 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Grp Volume(v), veh/h | 225 | 1080 | 0 | 13 | 1281 | 0 | 507 | 579 | 0 | 122 | 328 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1605 | 1694 | 1459 | 1330 | 1605 | 0 | 1673 | 1759 | 0 | 1706 | 1704 | 0 |
| Q Serve(g_s), s | 9.0 | 32.8 | 0.0 | 0.7 | 43.0 | 0.0 | 26.0 | 38.8 | 0.0 | 5.0 | 20.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 32.8 | 0.0 | 0.7 | 43.0 | 0.0 | 26.0 | 38.8 | 0.0 | 5.0 | 20.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 180 | 1407 | 606 | 95 | 1150 | 0 | 422 | 601 | 0 | 134 | 284 | 0 |
| V/C Ratio(X) | 1.25 | 0.77 | 0.00 | 0.14 | 1.11 | 0.00 | 1.20 | 0.96 | 0.00 | 0.91 | 1.15 | 0.00 |
| Avail Cap(c_a), veh/h | 180 | 1407 | 606 | 160 | 1150 | 0 | 422 | 601 | 0 | 146 | 284 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.2 | 30.2 | 0.0 | 30.3 | 38.5 | 0.0 | 35.0 | 39.3 | 0.0 | 45.2 | 40.0 | 0.0 |
| Incr Delay (d2), s/veh | 148.9 | 4.1 | 0.0 | 0.6 | 63.4 | 0.0 | 110.9 | 27.7 | 0.0 | 46.6 | 101.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 61.2 | 0.1 | 0.0 | 0.0 | 19.4 | 0.0 | 27.9 | 8.7 | 0.0 | 0.0 | 10.9 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 28.2 | 22.9 | 0.0 | 0.5 | 56.0 | 0.0 | 52.6 | 33.7 | 0.0 | 6.2 | 32.2 | 0.0 |
| LnGrp Delay(d),s/veh | 242.3 | 34.3 | 0.0 | 30.9 | 121.4 | 0.0 | 173.7 | 75.7 | 0.0 | 91.9 | 152.8 | 0.0 |
| LnGrp LOS | F | C | | C | F | | F | E | | F | F | |
| Approach Vol, veh/h | | 1305 | | | 1294 | | | 1086 | | | 450 | |
| Approach Delay, s/veh | | 70.2 | | | 120.5 | | | 121.5 | | | 136.3 | |
| Approach LOS | | E | | | F | | | F | | | F | |

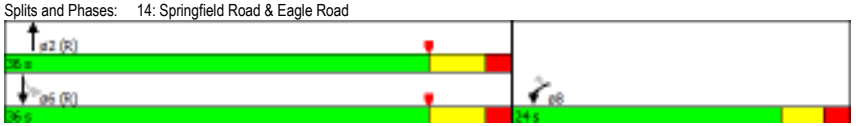
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.1 | 55.9 | 31.0 | 25.0 | 15.0 | 49.0 | 10.0 | 46.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 47.0 | 25.0 | 19.0 | 8.0 | 42.0 | 4.0 | 40.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 35.3 | 28.5 | 22.5 | 11.5 | 45.5 | 7.5 | 41.3 |
| Green Ext Time (p_c), s | 0.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 106.6 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 591 | 257 | 648 | 282 | 39 | 356 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 24.0 | 24.0 | 36.0 | | 36.0 | 36.0 |
| Total Split (%) | 40.0% | 40.0% | 60.0% | | 60.0% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 59 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 591 | 257 | 648 | 282 | 39 | 356 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1757 | 1791 | 1740 | 1791 | 1809 | 1738 |
| Adj Flow Rate, veh/h | 642 | 206 | 704 | 264 | 42 | 387 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 2 | 4 | 4 |
| Cap, veh/h | 558 | 508 | 767 | 112 | 66 | 392 |
| Arrive On Green | 0.33 | 0.33 | 0.52 | 0.50 | 0.50 | 0.52 |
| Sat Flow, veh/h | 1673 | 1523 | 1208 | 453 | 0 | 758 |
| Grp Volume(v), veh/h | 642 | 206 | 0 | 968 | 429 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1673 | 1523 | 0 | 1660 | 758 | 0 |
| Q Serve(g_s), s | 20.0 | 6.3 | 0.0 | 31.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 20.0 | 6.3 | 0.0 | 31.0 | 30.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.27 | 0.10 | |
| Lane Grp Cap(c), veh/h | 558 | 508 | 0 | 879 | 445 | 0 |
| V/C Ratio(X) | 1.15 | 0.41 | 0.00 | 1.10 | 0.96 | 0.00 |
| Avail Cap(c_a), veh/h | 558 | 508 | 0 | 858 | 445 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.75 | 0.00 |
| Uniform Delay (d), s/veh | 20.0 | 15.4 | 0.0 | 14.6 | 17.3 | 0.0 |
| Incr Delay (d2), s/veh | 87.1 | 0.5 | 0.0 | 61.8 | 29.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 22.1 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 44.7 | 4.9 | 0.0 | 53.7 | 14.0 | 0.0 |
| LnGrp Delay(d),s/veh | 129.2 | 15.9 | 0.0 | 80.1 | 46.3 | 0.0 |
| LnGrp LOS | F | B | | F | D | |
| Approach Vol, veh/h | 848 | | 968 | | 429 | |
| Approach Delay, s/veh | 101.7 | | 80.1 | | 46.3 | |
| Approach LOS | F | | F | | D | |

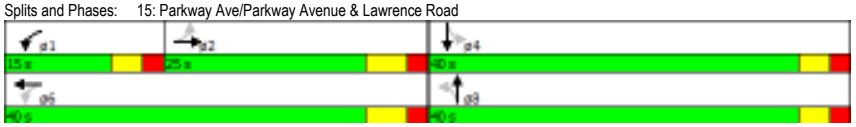
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.0 | | | | 36.0 | | 24.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | | | 30.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 33.0 | | | | 32.0 | | 22.5 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 81.8 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 6 | 832 | 109 | 161 | 607 | 5 | 408 | 16 | 396 | 8 | 11 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 596 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | | 10.0 | 15.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 21.0 | 21.0 | | 15.0 | 21.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 25.0 | 25.0 | | 15.0 | 40.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 31.3% | 31.3% | | 18.8% | 50.0% | | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 73.3 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 6 | 832 | 109 | 161 | 607 | 5 | 408 | 16 | 396 | 8 | 11 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1717 | 1791 | 1791 | 1628 | 1791 | 1721 | 1735 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 6 | 858 | 112 | 166 | 626 | 2 | 421 | 16 | 348 | 8 | 11 | 12 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 48 | 1242 | 161 | 72 | 676 | 3 | 317 | 336 | 632 | 103 | 137 | 116 |
| Arrive On Green | 0.43 | 0.44 | 0.43 | 0.43 | 0.44 | 0.43 | 0.45 | 0.45 | 0.44 | 0.44 | 0.45 | 0.44 |
| Sat Flow, veh/h | 5 | 2835 | 368 | 3 | 1544 | 6 | 1278 | 65 | 1419 | 206 | 449 | 414 |
| Grp Volume(v), veh/h | 521 | 0 | 455 | 286 | 0 | 508 | 421 | 0 | 364 | 31 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1710 | 0 | 1497 | 72 | 0 | 1480 | 1278 | 0 | 1485 | 1070 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 19.6 | 41.0 | 0.0 | 23.4 | 18.0 | 0.0 | 14.5 | 0.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 19.8 | 0.0 | 19.6 | 41.0 | 0.0 | 23.4 | 32.1 | 0.0 | 14.5 | 14.7 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.25 | 0.58 | | 0.00 | 1.00 | | 0.96 | 0.26 | | 0.39 |
| Lane Grp Cap(c), veh/h | 773 | 0 | 656 | 0 | 0 | 648 | 317 | 0 | 667 | 347 | 0 | 0 |
| V/C Ratio(X) | 0.67 | 0.00 | 0.69 | 0.00 | 0.00 | 0.78 | 1.33 | 0.00 | 0.55 | 0.09 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 774 | 0 | 657 | 0 | 0 | 649 | 554 | 0 | 670 | 527 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 18.2 | 0.0 | 18.2 | 0.0 | 0.0 | 19.2 | 27.9 | 0.0 | 16.5 | 15.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.3 | 0.0 | 3.2 | 0.0 | 0.0 | 6.2 | 160.5 | 0.0 | 0.9 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.2 | 0.0 | 13.5 | 0.0 | 0.0 | 15.9 | 39.0 | 0.0 | 10.3 | 0.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 20.5 | 0.0 | 21.4 | 0.0 | 0.0 | 25.4 | 196.9 | 0.0 | 17.5 | 15.6 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | | | C | F | | B | B | | |
| Approach Vol, veh/h | | 976 | | | 794 | | | 785 | | | 31 | |
| Approach Delay, s/veh | | 20.9 | | | 16.2 | | | 113.7 | | | 15.6 | |
| Approach LOS | | C | | | B | | | F | | | B | |

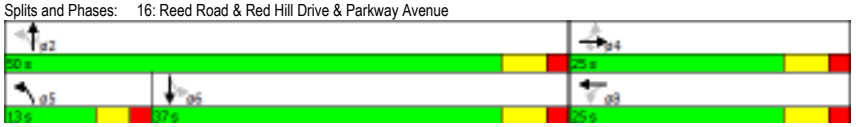
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 39.8 | | 40.0 | | 39.8 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 19.0 | | 35.0 | | 34.0 | | 35.0 |
| Max Q Clear Time (g_c+I1), s | | 21.8 | | 16.7 | | 43.0 | | 34.6 |
| Green Ext Time (p_c), s | | 0.0 | | 3.6 | | 0.0 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.6 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 70 | 61 | 283 | 32 | 100 | 4 | 283 | 729 | 125 | 4 | 200 | 45 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | | 13.0 | 50.0 | 50.0 | 37.0 | 37.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | | 17.3% | 66.7% | 66.7% | 49.3% | 49.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 61.1 | |
| Natural Cycle: 55 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 70 | 61 | 283 | 32 | 100 | 4 | 283 | 729 | 125 | 4 | 200 | 45 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1618 | 1680 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1806 | 1836 |
| Adj Flow Rate, veh/h | 72 | 63 | 251 | 33 | 103 | 4 | 292 | 752 | 117 | 4 | 206 | 43 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 268 | 198 | 369 | 142 | 358 | 12 | 689 | 928 | 813 | 75 | 405 | 83 |
| Arrive On Green | 0.24 | 0.26 | 0.26 | 0.24 | 0.26 | 0.24 | 0.18 | 0.54 | 0.54 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 609 | 769 | 1428 | 210 | 1397 | 47 | 1500 | 1713 | 1499 | 8 | 1435 | 295 |
| Grp Volume(v), veh/h | 135 | 0 | 251 | 140 | 0 | 0 | 292 | 752 | 117 | 253 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1378 | 0 | 1428 | 1654 | 0 | 0 | 1500 | 1713 | 1499 | 1738 | 0 | 0 |
| Q Serve(g_s), s | 0.4 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 | 5.9 | 17.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.6 | 0.0 | 7.9 | 3.1 | 0.0 | 0.0 | 5.9 | 17.9 | 1.9 | 6.1 | 0.0 | 0.0 |
| Prop In Lane | 0.53 | | 1.00 | 0.24 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.17 |
| Lane Grp Cap(c), veh/h | 439 | 0 | 369 | 480 | 0 | 0 | 689 | 928 | 813 | 529 | 0 | 0 |
| V/C Ratio(X) | 0.31 | 0.00 | 0.68 | 0.29 | 0.00 | 0.00 | 0.42 | 0.81 | 0.14 | 0.48 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 624 | 0 | 572 | 702 | 0 | 0 | 690 | 1543 | 1351 | 1139 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.3 | 0.0 | 16.8 | 15.1 | 0.0 | 0.0 | 7.5 | 9.4 | 5.7 | 15.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 2.2 | 0.3 | 0.0 | 0.0 | 0.4 | 1.8 | 0.1 | 0.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.9 | 0.0 | 6.1 | 3.0 | 0.0 | 0.0 | 4.5 | 13.7 | 1.4 | 5.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 15.7 | 0.0 | 19.2 | 15.4 | 0.0 | 0.0 | 7.9 | 11.1 | 5.8 | 15.9 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | B | | | A | B | A | B | | |
| Approach Vol, veh/h | | 386 | | | 140 | | | 1161 | | | 253 | |
| Approach Delay, s/veh | | 17.9 | | | 15.4 | | | 9.8 | | | 15.9 | |
| Approach LOS | | B | | | B | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.1 | | 17.8 | 13.0 | 19.1 | | 17.8 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 44.0 | | 19.0 | 8.0 | 31.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 20.4 | | 10.4 | 8.4 | 8.1 | | 5.1 |
| Green Ext Time (p_c), s | | 5.0 | | 1.4 | 0.0 | 4.9 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.6 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 48 | 396 | 52 | 46 | 395 | 63 | 42 | 0 | 28 | 41 | 0 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 175 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 6% | 2% | 2% | 9% | 5% | 2% | 2% | 2% | 3% | 2% | 8% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 21.0 | 21.0 | 21.0 | 9.0 | 21.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 12.0 | 39.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (%) | 45.0% | 45.0% | 45.0% | 20.0% | 65.0% | | 35.0% | 35.0% | | 35.0% | 35.0% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 15 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 48 | 396 | 52 | 46 | 395 | 63 | 42 | 0 | 28 | 41 | 0 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1705 | 1765 | 1729 | 1627 | 1764 | 1765 | 1765 | 1800 | 1800 | 1727 | 1800 |
| Adj Flow Rate, veh/h | 52 | 426 | 56 | 49 | 425 | 68 | 45 | 0 | 30 | 44 | 0 | 14 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 6 | 6 | 2 | 2 | 9 | 9 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 228 | 1732 | 969 | 93 | 1052 | 168 | 264 | 0 | 147 | 181 | 10 | 27 |
| Arrive On Green | 0.63 | 0.65 | 0.65 | 0.06 | 0.77 | 0.75 | 0.10 | 0.00 | 0.08 | 0.08 | 0.00 | 0.08 |
| Sat Flow, veh/h | 240 | 2682 | 1500 | 1647 | 1369 | 219 | 1310 | 0 | 1500 | 767 | 103 | 277 |
| Grp Volume(v), veh/h | 242 | 236 | 56 | 49 | 0 | 493 | 45 | 0 | 30 | 58 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1448 | 1474 | 1500 | 1647 | 0 | 1588 | 1310 | 0 | 1500 | 1147 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 4.0 | 0.8 | 1.7 | 0.0 | 6.3 | 0.0 | 0.0 | 1.1 | 2.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.6 | 4.0 | 0.8 | 1.7 | 0.0 | 6.3 | 1.5 | 0.0 | 1.1 | 3.2 | 0.0 | 0.0 |
| Prop In Lane | 0.21 | | 1.00 | 1.00 | | 0.14 | 1.00 | | 1.00 | 0.76 | | 0.24 |
| Lane Grp Cap(c), veh/h | 984 | 952 | 969 | 93 | 0 | 1221 | 264 | 0 | 147 | 199 | 0 | 0 |
| V/C Ratio(X) | 0.25 | 0.25 | 0.06 | 0.53 | 0.00 | 0.40 | 0.17 | 0.00 | 0.20 | 0.29 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 984 | 952 | 969 | 220 | 0 | 1221 | 507 | 0 | 425 | 442 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 4.4 | 4.5 | 3.9 | 27.5 | 0.0 | 2.4 | 25.1 | 0.0 | 25.4 | 26.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.6 | 0.1 | 4.6 | 0.0 | 1.0 | 0.3 | 0.0 | 0.7 | 0.8 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.4 | 3.2 | 0.7 | 1.6 | 0.0 | 5.3 | 1.3 | 0.0 | 0.9 | 1.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 5.0 | 5.1 | 4.0 | 32.2 | 0.0 | 3.4 | 25.4 | 0.0 | 26.1 | 27.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | C | | A | C | | C | C | | |
| Approach Vol, veh/h | | 534 | | | 542 | | | 75 | | | 58 | |
| Approach Delay, s/veh | | 5.0 | | | 6.0 | | | 25.7 | | | 27.3 | |
| Approach LOS | | A | | | A | | | C | | | C | |

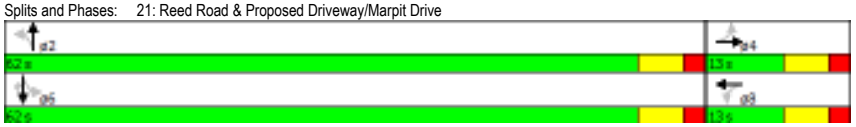
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.4 | 42.8 | | 9.9 | | 50.1 | | 9.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 22.0 | | 16.0 | | 34.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 6.5 | | 5.2 | | 8.3 | | 4.0 |
| Green Ext Time (p_c), s | 0.0 | 3.7 | | 0.3 | | 4.2 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.8 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 14 | 4 | 21 | 80 | 10 | 31 | 37 | 1084 | 224 | 45 | 240 | 11 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 293 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 6.7 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 50% | 2% | 14% | 2% | 1% | 6% | 19% | 7% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 22.0 | 22.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 62.0 | 62.0 | | 62.0 | 62.0 | 62.0 |
| Total Split (%) | 17.3% | 17.3% | | 17.3% | 17.3% | | 82.7% | 82.7% | | 82.7% | 82.7% | 82.7% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 79.9 | |
| Natural Cycle: 120 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 14 | 4 | 21 | 80 | 10 | 31 | 37 | 1084 | 224 | 45 | 240 | 11 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1200 | 1622 | 1800 | 1765 | 1767 | 1800 | 1513 | 1682 | 1765 |
| Adj Flow Rate, veh/h | 15 | 4 | 22 | 84 | 11 | 30 | 39 | 1141 | 225 | 47 | 253 | 12 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 50 | 2 | 2 | 2 | 1 | 1 | 19 | 7 | 2 |
| Cap, veh/h | 200 | 25 | 139 | 183 | 41 | 112 | 850 | 1171 | 146 | 97 | 1279 | 1140 |
| Arrive On Green | 0.11 | 0.11 | 0.09 | 0.11 | 0.11 | 0.11 | 0.76 | 0.76 | 0.75 | 0.76 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1289 | 236 | 1299 | 888 | 385 | 1051 | 1051 | 1434 | 283 | 322 | 1682 | 1500 |
| Grp Volume(v), veh/h | 15 | 0 | 26 | 84 | 0 | 41 | 39 | 0 | 1366 | 47 | 253 | 12 |
| Grp Sat Flow(s),veh/h/ln | 1289 | 0 | 1535 | 888 | 0 | 1436 | 1051 | 0 | 1717 | 322 | 1682 | 1500 |
| Q Serve(g_s), s | 0.8 | 0.0 | 1.2 | 7.1 | 0.0 | 2.0 | 0.8 | 0.0 | 57.0 | 0.5 | 3.2 | 0.1 |
| Cycle Q Clear(g_c), s | 2.8 | 0.0 | 1.2 | 7.7 | 0.0 | 2.0 | 4.0 | 0.0 | 57.0 | 57.0 | 3.2 | 0.1 |
| Prop In Lane | 1.00 | | 0.85 | 1.00 | | 0.73 | 1.00 | | 0.16 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 200 | 0 | 164 | 183 | 0 | 153 | 850 | 0 | 1317 | 97 | 1279 | 1140 |
| V/C Ratio(X) | 0.08 | 0.00 | 0.16 | 0.46 | 0.00 | 0.27 | 0.05 | 0.00 | 1.04 | 0.48 | 0.20 | 0.01 |
| Avail Cap(c_a), veh/h | 200 | 0 | 164 | 183 | 0 | 153 | 850 | 0 | 1305 | 98 | 1279 | 1140 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.1 | 0.0 | 30.8 | 33.7 | 0.0 | 30.8 | 3.1 | 0.0 | 9.1 | 37.5 | 2.5 | 2.2 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.4 | 1.8 | 0.0 | 0.9 | 0.0 | 0.0 | 34.9 | 3.7 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.5 | 0.0 | 0.9 | 3.3 | 0.0 | 1.5 | 0.4 | 0.0 | 71.8 | 1.9 | 2.7 | 0.1 |
| LnGrp Delay(d),s/veh | 32.2 | 0.0 | 31.3 | 35.5 | 0.0 | 31.7 | 3.1 | 0.0 | 49.2 | 41.2 | 2.6 | 2.2 |
| LnGrp LOS | C | | C | D | | C | A | | F | D | A | A |
| Approach Vol, veh/h | | 41 | | | 125 | | | 1405 | | | 312 | |
| Approach Delay, s/veh | | 31.6 | | | 34.3 | | | 48.0 | | | 8.4 | |
| Approach LOS | | C | | | C | | | D | | | A | |

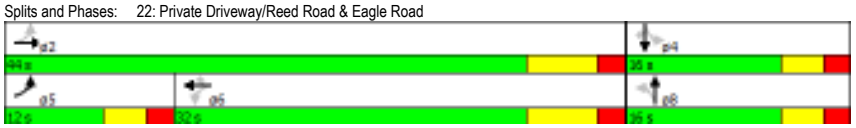
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.0 | | 13.0 | | 62.0 | | 13.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 56.0 | | 7.0 | | 56.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | | 59.0 | | 5.3 | | 59.5 | | 10.2 |
| Green Ext Time (p_c), s | | 0.0 | | 0.1 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 40.1 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 454 | 152 | 2 | 2 | 433 | 890 | 5 | 3 | 3 | 254 | 3 | 79 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 15.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 22.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 44.0 | | 32.0 | 32.0 | 32.0 | 16.0 | 16.0 | | 16.0 | 16.0 | 16.0 |
| Total Split (%) | 20.0% | 73.3% | | 53.3% | 53.3% | 53.3% | 26.7% | 26.7% | | 26.7% | 26.7% | 26.7% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 58.3 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 454 | 152 | 2 | 2 | 433 | 890 | 5 | 3 | 3 | 254 | 3 | 79 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1773 | 1647 | 1790 |
| Adj Flow Rate, veh/h | 483 | 162 | 2 | 2 | 461 | 853 | 5 | 3 | 3 | 270 | 3 | 75 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 66 | 66 | 3 |
| Cap, veh/h | 395 | 1114 | 14 | 61 | 734 | 630 | 87 | 41 | 15 | 296 | 2 | 304 |
| Arrive On Green | 0.13 | 0.63 | 0.62 | 0.42 | 0.43 | 0.43 | 0.18 | 0.20 | 0.18 | 0.18 | 0.20 | 0.20 |
| Sat Flow, veh/h | 1782 | 1759 | 22 | 1 | 1694 | 1455 | 0 | 204 | 76 | 883 | 10 | 1522 |
| Grp Volume(v), veh/h | 483 | 0 | 164 | 463 | 0 | 853 | 11 | 0 | 0 | 273 | 0 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 280 | 0 | 0 | 892 | 0 | 1522 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.2 | 0.0 | 0.0 | 26.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.2 | 13.0 | 0.0 | 26.0 | 11.0 | 0.0 | 0.0 | 11.0 | 0.0 | 2.5 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 0.99 | | 1.00 |
| Lane Grp Cap(c), veh/h | 395 | 0 | 1128 | 766 | 0 | 630 | 139 | 0 | 0 | 283 | 0 | 304 |
| V/C Ratio(X) | 1.22 | 0.00 | 0.15 | 0.60 | 0.00 | 1.35 | 0.08 | 0.00 | 0.00 | 0.96 | 0.00 | 0.25 |
| Avail Cap(c_a), veh/h | 452 | 0 | 1128 | 766 | 0 | 630 | 139 | 0 | 0 | 283 | 0 | 304 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.4 | 0.0 | 4.4 | 13.3 | 0.0 | 17.0 | 20.3 | 0.0 | 0.0 | 26.3 | 0.0 | 20.2 |
| Incr Delay (d2), s/veh | 120.7 | 0.0 | 0.1 | 1.8 | 0.0 | 169.1 | 0.2 | 0.0 | 0.0 | 43.8 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 36.3 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 40.5 | 0.0 | 2.0 | 10.7 | 0.0 | 74.9 | 0.3 | 0.0 | 0.0 | 12.6 | 0.0 | 1.9 |
| LnGrp Delay(d),s/veh | 171.5 | 0.0 | 4.5 | 15.1 | 0.0 | 198.6 | 20.5 | 0.0 | 0.0 | 70.1 | 0.0 | 20.6 |
| LnGrp LOS | F | | A | B | | F | C | | | E | | C |
| Approach Vol, veh/h | | 647 | | | 1316 | | | 11 | | | 348 | |
| Approach Delay, s/veh | | 129.2 | | | 134.1 | | | 20.5 | | | 59.4 | |
| Approach LOS | | F | | | F | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 44.0 | | 16.0 | 12.0 | 32.0 | | 16.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 37.0 | | 11.0 | 7.0 | 25.0 | | 11.0 |
| Max Q Clear Time (g_c+I1), s | | 4.2 | | 13.0 | 10.5 | 28.5 | | 13.0 |
| Green Ext Time (p_c), s | | 16.3 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 121.0 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 893 | 1427 | 0 | 380 | 917 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1620 | 1672 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 940 | 1502 | 0 | 400 | 965 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 57.0 | 63.0 | | 57.0 | 120.0 |
| Total Split (%) | | 47.5% | 52.5% | | 47.5% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 47.8 | 57.2 | | 47.8 | 120.0 |
| Actuated g/C Ratio | | 0.40 | 0.48 | | 0.40 | 1.00 |
| v/c Ratio | | 0.92 | 0.92 | | 0.62 | 0.58 |
| Control Delay | | 45.3 | 33.7 | | 32.8 | 2.6 |
| Queue Delay | | 21.6 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 66.9 | 33.7 | | 32.8 | 2.6 |
| LOS | | E | C | | C | A |
| Approach Delay | | | 33.7 | | | 11.5 |
| Approach LOS | | | C | | | B |
| Queue Length 50th (ft) | | 431 | 424 | | 240 | 34 |
| Queue Length 95th (ft) | | m384 | m303 | | 337 | 64 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1052 | 1634 | | 661 | 1672 |
| Starvation Cap Reductn | | 142 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 1.03 | 0.92 | | 0.61 | 0.58 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 33.9 — Intersection LOS: C
Intersection Capacity Utilization 87.1% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 59 | 17 | 34 | 19 | 22 | 29 | 51 | 665 | 2 | 19 | 199 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 192 | | | 246 | | | 388 | | | 596 | |
| Travel Time (s) | | 5.2 | | | 6.7 | | | 10.6 | | | 16.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 38.9 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 59 | 17 | 34 | 0 | 19 | 22 | 29 | 0 | 51 | 665 | 2 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 16 | 13 | 13 | 2 | 6 | 0 | 0 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 0 | 63 | 18 | 36 | 0 | 20 | 23 | 31 | 0 | 54 | 707 | 2 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.4 | 10.8 | 55.8 |
| HCM LOS | B | B | F |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 7% | 78% | 0% | 27% | 7% |
| Vol Thru, % | 93% | 22% | 0% | 31% | 73% |
| Vol Right, % | 0% | 0% | 100% | 41% | 20% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 718 | 76 | 34 | 70 | 273 |
| LT Vol | 51 | 59 | 0 | 19 | 19 |
| Through Vol | 665 | 17 | 0 | 22 | 199 |
| RT Vol | 2 | 0 | 34 | 29 | 55 |
| Lane Flow Rate | 764 | 81 | 36 | 74 | 290 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 1 | 0.174 | 0.066 | 0.138 | 0.441 |
| Departure Headway (Hd) | 5.056 | 7.747 | 6.58 | 6.655 | 5.462 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 726 | 462 | 541 | 535 | 653 |
| Service Time | 3.056 | 5.502 | 4.364 | 4.744 | 3.544 |
| HCM Lane V/C Ratio | 1.052 | 0.175 | 0.067 | 0.138 | 0.444 |
| HCM Control Delay | 55.8 | 12.1 | 9.8 | 10.8 | 12.8 |
| HCM Lane LOS | F | B | A | B | B |
| HCM 95th-tile Q | 16.3 | 0.6 | 0.2 | 0.5 | 2.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 19 | 199 | 55 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 20 | 212 | 59 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 12.8 |
| HCM LOS | B |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 35 | 2494 | 57 | 52 | 1342 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 8.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 35 | 2494 | 57 | 52 | 1342 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 39 | 2771 | 63 | 58 | 1491 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3664 | 1417 | 0 | 0 | 2834 | 0 |
| Stage 1 | 2803 | - | - | - | - | - |
| Stage 2 | 861 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | 2 | 114 | - | - | 141 | - |
| Stage 1 | 23 | - | - | - | - | - |
| Stage 2 | 391 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 2 | 114 | - | - | 141 | - |
| Mov Cap-2 Maneuver | 2 | - | - | - | - | - |
| Stage 1 | 23 | - | - | - | - | - |
| Stage 2 | 391 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 52.1 | 0 | 22.8 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 114 | 141 | - |
| HCM Lane V/C Ratio | - | - | 0.341 | 0.41 | - |
| HCM Control Delay (s) | - | - | 52.1 | 47.2 | 21.9 |
| HCM Lane LOS | - | - | F | E | C |
| HCM 95th %tile Q(veh) | - | - | 1.4 | 1.8 | - |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 44 | 50 | 60 | 851 | 501 | 420 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 44 | 50 | 60 | 851 | 501 | 420 |
| Conflicting Peds, #/hr | 0 | 0 | 1 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 11 | 2 | 4 | 5 | 5 |
| Mvmt Flow | 45 | 52 | 62 | 877 | 516 | 433 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1734 | 734 | 949 | 0 | - | 0 |
| Stage 1 | 733 | - | - | - | - | - |
| Stage 2 | 1001 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.31 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.2 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *104 | 485 | 461 | - | - | - |
| Stage 1 | *554 | - | - | - | - | - |
| Stage 2 | *385 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *77 | 485 | 461 | - | - | - |
| Mov Cap-2 Maneuver | *77 | - | - | - | - | - |
| Stage 1 | *554 | - | - | - | - | - |
| Stage 2 | *284 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 75.8 | 0.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 461 | - | 139 | - | - |
| HCM Lane V/C Ratio | 0.134 | - | 0.697 | - | - |
| HCM Control Delay (s) | 14 | 0 | 75.8 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 3.9 | - | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 192 | 426 | 10 | 0 | 374 | 62 | 0 | 0 | 2 | 39 | 0 | 73 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 366 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 10.0 | | | 7.8 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 2% | 8% | 17% | 2% | 2% | 2% | 0% | 2% | 10% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

**Intersection Summary**

Area Type: Other





**Intersection**

Int Delay, s/veh 2.6

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 192 | 426 | 10 | 0 | 374 | 62 | 0 | 0 | 2 | 39 | 0 | 73 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 5 | 2 | 2 | 8 | 17 | 2 | 2 | 2 | 0 | 2 | 10 |
| Mvmt Flow | 204 | 453 | 11 | 0 | 398 | 66 | 0 | 0 | 2 | 41 | 0 | 78 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 464 | 0 | 0 | 464 | 0 | 0 | 1337 | 1331 | 232 | 1066 | 1303 | 431 |
| Stage 1 | - | - | - | - | - | - | 867 | 867 | - | 431 | 431 | - |
| Stage 2 | - | - | - | - | - | - | 470 | 464 | - | 635 | 872 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.5 | 6.53 | 6.7 | 7.5 | 6.53 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.3 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 3.1 | 2.8 | 4.019 | 3.1 |
| Pot Cap-1 Maneuver | *1126 | - | - | 1055 | - | - | *251 | *246 | 832 | *467 | *258 | *872 |
| Stage 1 | - | - | - | - | - | - | *388 | *369 | - | *965 | *672 | - |
| Stage 2 | - | - | - | - | - | - | *965 | *672 | - | *500 | *367 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *1126 | - | - | 1055 | - | - | *197 | *201 | 832 | *401 | *211 | *872 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *197 | *201 | - | *401 | *211 | - |
| Stage 1 | - | - | - | - | - | - | *318 | *302 | - | *790 | *672 | - |
| Stage 2 | - | - | - | - | - | - | *879 | *672 | - | *408 | *301 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 9.3 | 12.2 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 832 | * 1126 | - | - | 1055 | - | - | 619 |
| HCM Lane V/C Ratio | 0.003 | 0.181 | - | - | - | - | - | 0.192 |
| HCM Control Delay (s) | 9.3 | 8.9 | - | - | 0 | - | - | 12.2 |
| HCM Lane LOS | A | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0.7 | - | - | 0 | - | - | 0.7 |

**Notes**

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 9 | 108 | 1043 | 31 | 195 | 311 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 9 | 108 | 1043 | 31 | 195 | 311 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 9 | 110 | 1064 | 32 | 199 | 317 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1779 | 1064 | 0 | 0 | 1064 | 0 |
| Stage 1 | 1064 | - | - | - | - | - |
| Stage 2 | 715 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 109 | 269 | - | - | 544 | - |
| Stage 1 | 391 | - | - | - | - | - |
| Stage 2 | 569 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 61 | 269 | - | - | 544 | - |
| Mov Cap-2 Maneuver | 187 | - | - | - | - | - |
| Stage 1 | 391 | - | - | - | - | - |
| Stage 2 | 316 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 30.1 | 0 | 5.9 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 260 | 544 | - |
| HCM Lane V/C Ratio | - | - | 0.459 | 0.366 | - |
| HCM Control Delay (s) | - | - | 30.1 | 15.4 | 0 |
| HCM Lane LOS | - | - | D | C | A |
| HCM 95th %tile Q(veh) | - | - | 2.3 | 1.7 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 55 | 232 | 742 | 142 | 50 | 83 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Heavy Vehicles (%) | 15% | 8% | 3% | 8% | 19% | 17% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 18.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 55 | 232 | 742 | 142 | 50 | 83 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 1 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 15 | 8 | 3 | 8 | 19 | 17 |
| Mvmt Flow | 74 | 314 | 1003 | 192 | 68 | 112 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1195 | 0 | - | 0 | 1561 | 597 |
| Stage 1 | - | - | - | - | 1099 | - |
| Stage 2 | - | - | - | - | 462 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.4 | 7.3 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.2 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 596 | - | - | - | 87 | 443 |
| Stage 1 | - | - | - | - | 244 | - |
| Stage 2 | - | - | - | - | 652 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 596 | - | - | - | 76 | 443 |
| Mov Cap-2 Maneuver | - | - | - | - | 76 | - |
| Stage 1 | - | - | - | - | 244 | - |
| Stage 2 | - | - | - | - | 571 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.3 | 0 | 174 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 596 | - | - | - | 157 |
| HCM Lane V/C Ratio | 0.125 | - | - | - | 1.145 |
| HCM Control Delay (s) | 11.9 | - | - | - | 174 |
| HCM Lane LOS | B | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 9.8 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 254 | 33 | 57 | 473 | 264 | 347 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1478 | | | 553 | 444 | |
| Travel Time (s) | 33.6 | | | 12.6 | 10.1 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 107.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 254 | 33 | 57 | 473 | 264 | 347 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 6 | 0 | 2 | 4 | 4 | 1 |
| Mvmt Flow | 292 | 38 | 66 | 544 | 303 | 399 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 293 | 0 | 968 | 293 |
| Stage 1 | - | - | - | - | 293 | - |
| Stage 2 | - | - | - | - | 675 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.84 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.84 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 953 | - | ~ 162 | 719 |
| Stage 1 | - | - | - | - | 715 | - |
| Stage 2 | - | - | - | - | 361 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 953 | - | ~ 146 | 719 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 146 | - |
| Stage 1 | - | - | - | - | 715 | - |
| Stage 2 | - | - | - | - | 325 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1 | 250.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 146 | 719 | - | - | 953 | - |
| HCM Lane V/C Ratio | 2.078 | 0.555 | - | - | 0.069 | - |
| HCM Control Delay (s) | $ 558.5 | 16.1 | - | - | 9.1 | 0 |
| HCM Lane LOS | F | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 24.4 | 3.4 | - | - | 0.2 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 26 | 2324 | 58 | 53 | 1361 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 14 | 12 | 13 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 26 | 2324 | 58 | 53 | 1361 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 5 |
| Mvmt Flow | 0 | 27 | 2396 | 60 | 55 | 1403 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3237 | 1228 | 0 | 0 | 2456 | 0 |
| Stage 1 | 2426 | - | - | - | - | - |
| Stage 2 | 811 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *40 | *503 | - | - | *609 | - |
| Stage 1 | *522 | - | - | - | - | - |
| Stage 2 | *612 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *36 | *503 | - | - | *609 | - |
| Mov Cap-2 Maneuver | *262 | - | - | - | - | - |
| Stage 1 | *522 | - | - | - | - | - |
| Stage 2 | *557 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.6 | 0 | 0.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 503 | * 609 | - |
| HCM Lane V/C Ratio | - | - | 0.053 | 0.09 | - |
| HCM Control Delay (s) | - | - | 12.6 | 11.5 | - |
| HCM Lane LOS | - | - | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.3 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 413 | 0 | 0 | 428 | 7 | 4 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 9% | 2% | 2% | 9% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 413 | 0 | 0 | 428 | 7 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 9 | 2 | 2 | 9 | 2 | 2 |
| Mvmt Flow | 435 | 0 | 0 | 451 | 7 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 435 | 0 | 886 | 217 |
| Stage 1 | - | - | - | - | 435 | - |
| Stage 2 | - | - | - | - | 451 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | - | - | 1216 | - | 389 | *1107 |
| Stage 1 | - | - | - | - | 950 | - |
| Stage 2 | - | - | - | - | 692 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | 1216 | - | 389 | *1107 |
| Mov Cap-2 Maneuver | - | - | - | - | 389 | - |
| Stage 1 | - | - | - | - | 950 | - |
| Stage 2 | - | - | - | - | 692 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 12.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 509 | - | - | 1216 | - |
| HCM Lane V/C Ratio | 0.023 | - | - | - | - |
| HCM Control Delay (s) | 12.2 | - | - | 0 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 558 | 401 | 9 | 0 | 57 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 5% | 3% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 558 | 401 | 9 | 0 | 57 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 5 | 3 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 581 | 418 | 9 | 0 | 59 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 427 | 0 | - | 0 | 713 | 214 |
| Stage 1 | - | - | - | - | 422 | - |
| Stage 2 | - | - | - | - | 291 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1225 | - | - | - | 499 | *1035 |
| Stage 1 | - | - | - | - | 909 | - |
| Stage 2 | - | - | - | - | 786 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | 1225 | - | - | - | 499 | *1035 |
| Mov Cap-2 Maneuver | - | - | - | - | 499 | - |
| Stage 1 | - | - | - | - | 909 | - |
| Stage 2 | - | - | - | - | 786 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 8.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1225 | - | - | - | 1035 |
| HCM Lane V/C Ratio | - | - | - | - | 0.057 |
| HCM Control Delay (s) | 0 | - | - | - | 8.7 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 4 | 28 | 71 | 183 | 86 | 4 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 28 | 71 | 183 | 86 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 10 | 2 |
| Mvmt Flow | 4 | 30 | 76 | 195 | 91 | 4 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 440 | 94 | 96 | 0 | - | 0 |
| Stage 1 | 94 | - | - | - | - | - |
| Stage 2 | 346 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 654 | 1028 | 1113 | - | - | - |
| Stage 1 | 1083 | - | - | - | - | - |
| Stage 2 | 820 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 604 | 1028 | 1113 | - | - | - |
| Mov Cap-2 Maneuver | 604 | - | - | - | - | - |
| Stage 1 | 1083 | - | - | - | - | - |
| Stage 2 | 757 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9 | 2.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1113 | - | 945 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | 0.036 | - | - |
| HCM Control Delay (s) | 8.5 | 0 | 9 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.1 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 44 | 1721 | 150 | 0 | 1438 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 130 | | 459 | | | 611 |
| Travel Time (s) | 3.5 | | 7.8 | | | 10.4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 4% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 44 | 1721 | 150 | 0 | 1438 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 4 |
| Mvmt Flow | 0 | 45 | 1756 | 153 | 0 | 1467 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2490 | 878 | 0 | 0 | 1756 | 0 |
| Stage 1 | 1756 | - | - | - | - | - |
| Stage 2 | 734 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *14 | *416 | - | - | *503 | - |
| Stage 1 | *431 | - | - | - | - | - |
| Stage 2 | *584 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *14 | *416 | - | - | *503 | - |
| Mov Cap-2 Maneuver | *233 | - | - | - | - | - |
| Stage 1 | *431 | - | - | - | - | - |
| Stage 2 | *584 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.7 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 416 | * 503 | - |
| HCM Lane V/C Ratio | - | - | 0.108 | - | - |
| HCM Control Delay (s) | - | - | 14.7 | 0 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0 | - |

Notes

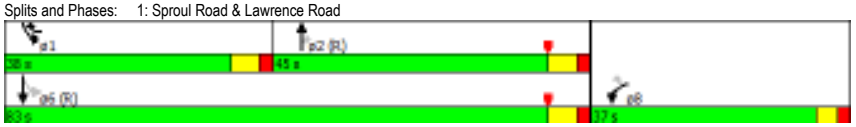
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 563 | 600 | 1318 | 482 | 552 | 1690 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 37.0 | 38.0 | 45.0 | 45.0 | 38.0 | 83.0 |
| Total Split (%) | 30.8% | 31.7% | 37.5% | 37.5% | 31.7% | 69.2% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 563 | 600 | 1318 | 482 | 552 | 1690 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 586 | 563 | 1373 | 418 | 575 | 1760 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 457 | 817 | 1123 | 523 | 555 | 2335 |
| Arrive On Green | 0.28 | 0.28 | 0.67 | 0.67 | 0.28 | 0.65 |
| Sat Flow, veh/h | 1663 | 1485 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 586 | 563 | 1373 | 418 | 575 | 1760 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 33.0 | 33.0 | 40.0 | 22.9 | 33.0 | 40.3 |
| Cycle Q Clear(g_c), s | 33.0 | 33.0 | 40.0 | 22.9 | 33.0 | 40.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 457 | 817 | 1123 | 523 | 555 | 2335 |
| V/C Ratio(X) | 1.28 | 0.69 | 1.22 | 0.80 | 1.04 | 0.75 |
| Avail Cap(c_a), veh/h | 457 | 817 | 1123 | 523 | 555 | 2335 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.09 | 0.09 | 0.42 | 0.42 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.5 | 19.6 | 20.0 | 17.1 | 36.9 | 14.4 |
| Incr Delay (d2), s/veh | 128.1 | 0.2 | 103.7 | 5.4 | 47.7 | 2.3 |
| Initial Q Delay(d3),s/veh | 18.2 | 0.0 | 7.8 | 0.0 | 30.7 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 57.9 | 15.3 | 63.2 | 13.7 | 51.3 | 28.0 |
| LnGrp Delay(d),s/veh | 189.8 | 19.8 | 131.5 | 22.5 | 115.4 | 16.7 |
| LnGrp LOS | F | B | F | C | F | B |
| Approach Vol, veh/h | 1149 | | 1791 | | | 2335 |
| Approach Delay, s/veh | 106.5 | | 106.1 | | | 41.0 |
| Approach LOS | F | | F | | | D |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 38.0 | 45.0 | | | | 83.0 | | 37.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 32.0 | 39.0 | | | | 77.0 | | 32.0 |
| Max Q Clear Time (g_c+I1), s | 35.5 | 42.5 | | | | 42.8 | | 35.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 25.9 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 77.4
HCM 2010 LOS E

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 45 | 259 | 14 | 221 | 41 | 1531 | 132 | 196 | 2189 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 633 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.8 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | 21.0 | 10.0 | 64.0 | 64.0 | 21.0 | 75.0 | |
| Total Split (%) | 29.2% | 29.2% | | 29.2% | 29.2% | 17.5% | 8.3% | 53.3% | 53.3% | 17.5% | 62.5% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 13 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 45 | 259 | 14 | 221 | 41 | 1531 | 132 | 196 | 2189 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1764 | 1800 | 1764 | 1764 | 1747 | 1764 | 1747 | 1835 | 1800 | 1782 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 45 | 264 | 14 | 208 | 42 | 1562 | 0 | 200 | 2234 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 38 | 39 | 40 | 182 | 7 | 553 | 117 | 1681 | 790 | 375 | 2073 | 11 |
| Arrive On Green | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | 0.25 | 0.06 | 1.00 | 0.00 | 0.16 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 156 | 160 | 493 | 26 | 1460 | 1680 | 3318 | 1559 | 1714 | 3441 | 29 |
| Grp Volume(v), veh/h | 89 | 0 | 0 | 278 | 0 | 208 | 42 | 1562 | 0 | 200 | 1098 | 1155 |
| Grp Sat Flow(s),veh/h/ln | 316 | 0 | 0 | 520 | 0 | 1460 | 1680 | 1659 | 1559 | 1714 | 1693 | 1777 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.4 | 1.3 | 0.0 | 0.0 | 5.8 | 0.0 | 68.7 |
| Cycle Q Clear(g_c), s | 29.0 | 0.0 | 0.0 | 29.0 | 0.0 | 13.4 | 1.3 | 0.0 | 0.0 | 5.8 | 0.0 | 68.7 |
| Prop In Lane | 0.26 | | 0.51 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 114 | 0 | 0 | 184 | 0 | 553 | 117 | 1681 | 790 | 375 | 1016 | 1068 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.00 | 1.51 | 0.00 | 0.38 | 0.36 | 0.93 | 0.00 | 0.53 | 1.08 | 1.08 |
| Avail Cap(c_a), veh/h | 114 | 0 | 0 | 184 | 0 | 484 | 149 | 1836 | 863 | 478 | 1018 | 1069 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.33 | 0.33 | 0.33 |
| Uniform Delay (d), s/veh | 38.3 | 0.0 | 0.0 | 49.7 | 0.0 | 27.2 | 27.5 | 0.5 | 0.0 | 7.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 28.3 | 0.0 | 0.0 | 255.6 | 0.0 | 0.4 | 1.8 | 10.6 | 0.0 | 0.4 | 42.8 | 43.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 6.5 | 6.2 |
| %ile BackOfQ(95%),veh/ln | 5.9 | 0.0 | 0.0 | 34.6 | 0.0 | 8.7 | 1.3 | 5.0 | 0.0 | 4.8 | 23.7 | 25.1 |
| LnGrp Delay(d),s/veh | 66.7 | 0.0 | 0.0 | 305.3 | 0.0 | 27.6 | 29.3 | 11.1 | 0.0 | 8.7 | 49.3 | 49.5 |
| LnGrp LOS | E | | | F | | C | C | B | | A | F | F |
| Approach Vol, veh/h | | 89 | | | 486 | | | 1604 | | | 2453 | |
| Approach Delay, s/veh | | 66.7 | | | 186.5 | | | 11.5 | | | 46.1 | |
| Approach LOS | | E | | | F | | | B | | | D | |

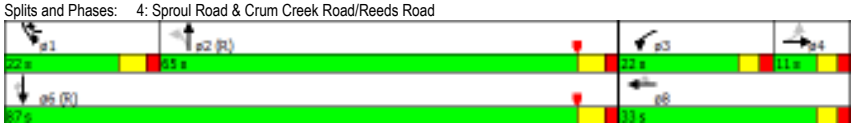
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.6 | 71.4 | | 35.0 | 7.8 | 77.2 | | 35.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 16.0 | 58.0 | | 29.0 | 5.0 | 69.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 8.3 | 2.5 | | 31.0 | 3.8 | 70.7 | | 31.0 |
| Green Ext Time (p_c), s | 0.4 | 41.3 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 49.2 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 14 | 22 | 51 | 382 | 36 | 268 | 49 | 1471 | 274 | 426 | 2235 | 96 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 225 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 437 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.4 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 2% | 6% | 1% | 3% | 0% | 3% | 7% | 2% | 2% | 4% | 3% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 11.0 | 11.0 | | 22.0 | 33.0 | 22.0 | 65.0 | 65.0 | | 22.0 | 87.0 | 87.0 |
| Total Split (%) | 9.2% | 9.2% | | 18.3% | 27.5% | 18.3% | 54.2% | 54.2% | | 18.3% | 72.5% | 72.5% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 31 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 14 | 22 | 51 | 382 | 36 | 268 | 49 | 1471 | 274 | 426 | 2235 | 96 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1735 | 1818 | 1818 | 1783 | 1836 | 1730 | 1745 | 1853 | 1782 | 1818 | 1836 |
| Adj Flow Rate, veh/h | 15 | 23 | 41 | 398 | 38 | 227 | 51 | 1532 | 223 | 444 | 2328 | 79 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 3 | 2 | 2 | 1 | 3 | 0 | 3 | 7 | 7 | 2 | 4 | 3 |
| Cap, veh/h | 121 | 33 | 58 | 488 | 422 | 591 | 127 | 1925 | 280 | 467 | 2377 | 1061 |
| Arrive On Green | 0.06 | 0.06 | 0.05 | 0.15 | 0.24 | 0.24 | 1.00 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1052 | 560 | 999 | 3359 | 1783 | 1561 | 133 | 3815 | 554 | 3293 | 3454 | 1560 |
| Grp Volume(v), veh/h | 15 | 0 | 64 | 398 | 38 | 227 | 51 | 1092 | 663 | 444 | 2328 | 79 |
| Grp Sat Flow(s),veh/h/ln | 1052 | 0 | 1559 | 1679 | 1783 | 1561 | 133 | 1361 | 1647 | 1647 | 1727 | 1560 |
| Q Serve(g_s), s | 1.6 | 0.0 | 4.8 | 13.8 | 2.0 | 12.7 | 0.0 | 0.0 | 0.0 | 15.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.6 | 0.0 | 4.8 | 13.8 | 2.0 | 12.7 | 0.0 | 0.0 | 0.0 | 15.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.64 | 1.00 | | 1.00 | 1.00 | | 0.34 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 121 | 0 | 91 | 488 | 422 | 591 | 127 | 1374 | 831 | 467 | 2377 | 1061 |
| V/C Ratio(X) | 0.12 | 0.00 | 0.70 | 0.82 | 0.09 | 0.38 | 0.40 | 0.80 | 0.80 | 0.95 | 0.98 | 0.07 |
| Avail Cap(c_a), veh/h | 121 | 0 | 91 | 504 | 431 | 598 | 127 | 1374 | 831 | 467 | 2377 | 1061 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.0 | 0.0 | 55.8 | 49.7 | 35.7 | 27.1 | 0.0 | 0.0 | 0.0 | 42.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 21.7 | 9.8 | 0.1 | 0.4 | 9.2 | 4.8 | 7.8 | 29.7 | 14.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.9 | 0.0 | 4.7 | 11.4 | 1.8 | 9.4 | 0.6 | 1.7 | 3.3 | 14.0 | 8.2 | 0.1 |
| LnGrp Delay(d),s/veh | 54.4 | 0.0 | 77.5 | 59.5 | 35.8 | 27.5 | 9.2 | 4.8 | 7.8 | 72.3 | 14.2 | 0.1 |
| LnGrp LOS | D | | E | E | D | C | A | A | A | E | B | A |
| Approach Vol, veh/h | | 79 | | | 663 | | | 1806 | | | 2851 | |
| Approach Delay, s/veh | | 73.1 | | | 47.2 | | | 6.1 | | | 22.9 | |
| Approach LOS | | E | | | D | | | A | | | C | |

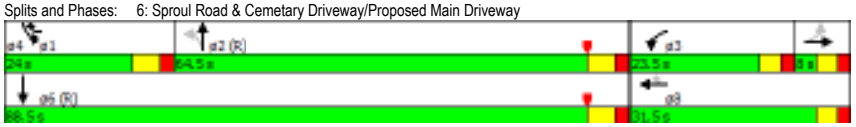
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.0 | 65.6 | 21.4 | 11.0 | | 87.6 | | 32.4 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 59.0 | 17.0 | 6.0 | | 81.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | 18.4 | 2.5 | 16.3 | 6.8 | | 2.5 | | 15.2 |
| Green Ext Time (p_c), s | 0.0 | 48.7 | 0.1 | 0.0 | | 64.2 | | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.0 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 3 | 500 | 0 | 191 | 1 | 1578 | 220 | 203 | 2333 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | 2 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 23.5 | 31.5 | 24.0 | 64.5 | 64.5 | | 24.0 | 88.5 | |
| Total Split (%) | 6.7% | 6.7% | | 19.6% | 26.3% | 20.0% | 53.8% | 53.8% | | 20.0% | 73.8% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 47 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 0 | 3 | 500 | 0 | 191 | 1 | 1578 | 220 | 203 | 2333 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1872 | 1800 | 1863 | 1791 | 1791 | 1782 | 1833 | 1853 | 1747 | 1835 | 1853 |
| Adj Flow Rate, veh/h | 1 | 0 | 0 | 505 | 0 | 141 | 1 | 1594 | 159 | 205 | 2357 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 |
| Cap, veh/h | 99 | 62 | 0 | 559 | 410 | 570 | 133 | 2086 | 208 | 242 | 2427 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.16 | 0.00 | 0.23 | 0.51 | 0.51 | 0.51 | 0.29 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1183 | 1872 | 0 | 3442 | 1791 | 1519 | 144 | 4101 | 409 | 1664 | 3578 | 0 |
| Grp Volume(v), veh/h | 1 | 0 | 0 | 505 | 0 | 141 | 1 | 1068 | 685 | 205 | 2357 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1183 | 1872 | 0 | 1721 | 1791 | 1519 | 144 | 1375 | 1761 | 1664 | 1743 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 17.3 | 0.0 | 7.7 | 0.4 | 37.5 | 37.6 | 13.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 17.3 | 0.0 | 7.7 | 0.4 | 37.5 | 37.6 | 13.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 99 | 62 | 0 | 559 | 410 | 570 | 133 | 1398 | 896 | 242 | 2427 | 0 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.00 | 0.90 | 0.00 | 0.25 | 0.01 | 0.76 | 0.76 | 0.85 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 62 | 0 | 559 | 410 | 570 | 133 | 1398 | 896 | 263 | 2427 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.60 | 0.60 | 0.60 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 56.1 | 0.0 | 0.0 | 49.3 | 0.0 | 25.9 | 14.6 | 23.7 | 23.7 | 41.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 18.0 | 0.0 | 0.2 | 0.1 | 2.5 | 3.8 | 20.5 | 12.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.1 | 0.0 | 0.0 | 14.7 | 0.0 | 5.8 | 0.0 | 19.4 | 24.6 | 12.3 | 7.7 | 0.0 |
| LnGrp Delay(d),s/veh | 56.2 | 0.0 | 0.0 | 67.3 | 0.0 | 26.1 | 14.6 | 26.1 | 27.5 | 61.7 | 12.7 | 0.0 |
| LnGrp LOS | E | | | E | | C | B | C | C | E | B | |
| Approach Vol, veh/h | | 1 | | | 646 | | | 1754 | | | 2562 | |
| Approach Delay, s/veh | | 56.2 | | | 58.3 | | | 26.7 | | | 16.6 | |
| Approach LOS | | E | | | E | | | C | | | B | |

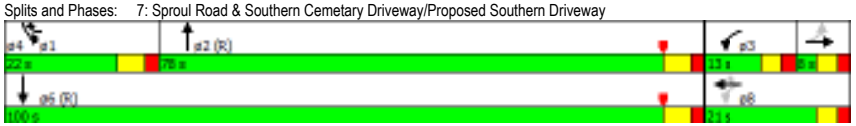
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.5 | 66.0 | 23.5 | 8.0 | | 88.5 | | 31.5 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 18.0 | 58.5 | 18.5 | 3.0 | | 82.5 | | 26.5 |
| Max Q Clear Time (g_c+I1), s | 16.4 | 40.1 | 19.8 | 2.6 | | 2.5 | | 10.2 |
| Green Ext Time (p_c), s | 0.1 | 17.0 | 0.0 | 0.0 | | 58.8 | | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.6 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 1 | 0 | 10 | 162 | 0 | 112 | 0 | 1836 | 93 | 90 | 2608 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 13.0 | 21.0 | 22.0 | | 78.0 | | 22.0 | 100.0 | |
| Total Split (%) | 6.6% | 6.6% | | 10.7% | 17.4% | 18.2% | | 64.5% | | 18.2% | 82.6% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 121 | |
| Actuated Cycle Length: 121 | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 0 | 10 | 162 | 0 | 112 | 0 | 1836 | 93 | 90 | 2608 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1834 | 1853 | 1782 | 1872 | 0 |
| Adj Flow Rate, veh/h | 1 | 0 | 10 | 169 | 0 | 106 | 0 | 1912 | 80 | 94 | 2717 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 0 |
| Cap, veh/h | 100 | 0 | 49 | 224 | 247 | 331 | 0 | 2831 | 118 | 137 | 2794 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.02 | 0.07 | 0.00 | 0.14 | 0.00 | 0.66 | 0.66 | 0.08 | 0.79 | 0.00 |
| Sat Flow, veh/h | 1239 | 0 | 1493 | 1681 | 1765 | 1500 | 0 | 4779 | 178 | 1697 | 3650 | 0 |
| Grp Volume(v), veh/h | 1 | 0 | 10 | 169 | 0 | 106 | 0 | 1183 | 809 | 94 | 2717 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1239 | 0 | 1493 | 1681 | 1765 | 1500 | 0 | 1321 | 1803 | 1697 | 1778 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.8 | 9.0 | 0.0 | 7.2 | 0.0 | 33.0 | 33.1 | 6.5 | 83.9 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.8 | 9.0 | 0.0 | 7.2 | 0.0 | 33.0 | 33.1 | 6.5 | 83.9 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.00 | | 0.10 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 100 | 0 | 49 | 224 | 247 | 331 | 0 | 1753 | 1196 | 137 | 2794 | 0 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.21 | 0.75 | 0.00 | 0.32 | 0.00 | 0.67 | 0.68 | 0.69 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 100 | 0 | 49 | 224 | 248 | 332 | 0 | 1753 | 1196 | 238 | 2794 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.30 | 0.30 | 0.00 |
| Uniform Delay (d), s/veh | 56.7 | 0.0 | 57.5 | 52.0 | 0.0 | 39.5 | 0.0 | 12.4 | 12.4 | 54.1 | 11.8 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 2.1 | 13.5 | 0.0 | 0.6 | 0.0 | 2.1 | 3.1 | 1.8 | 4.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.1 | 0.0 | 0.6 | 10.2 | 0.0 | 5.5 | 0.0 | 18.1 | 24.3 | 4.7 | 47.6 | 0.0 |
| LnGrp Delay(d),s/veh | 56.7 | 0.0 | 59.6 | 65.5 | 0.0 | 40.1 | 0.0 | 14.5 | 15.5 | 56.0 | 16.6 | 0.0 |
| LnGrp LOS | E | | E | E | | D | | B | B | E | B | |
| Approach Vol, veh/h | | 11 | | | 275 | | | 1992 | | | 2811 | |
| Approach Delay, s/veh | | 59.3 | | | 55.7 | | | 14.9 | | | 17.9 | |
| Approach LOS | | E | | | E | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 14.7 | 85.3 | 13.0 | 7.9 | | 100.1 | | 20.9 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 72.0 | 8.0 | 3.0 | | 94.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 35.6 | 11.5 | 2.8 | | 86.4 | | 9.7 |
| Green Ext Time (p_c), s | 0.1 | 34.0 | 0.0 | 0.0 | | 7.4 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 210 | 170 | 56 | 157 | 146 | 13 | 75 | 1141 | 62 | 4 | 1471 | 208 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 4 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 210 | 170 | 56 | 157 | 146 | 13 | 75 | 1141 | 62 | 4 | 1471 | 208 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1883 | 1818 | 1782 | 1756 | 1782 | 1773 | 1751 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 219 | 177 | 46 | 164 | 152 | 11 | 78 | 1189 | 53 | 4 | 1532 | 188 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 286 | 187 | 47 | 254 | 209 | 14 | 70 | 906 | 45 | 48 | 1564 | 185 |
| Arrive On Green | 0.32 | 0.33 | 0.32 | 0.32 | 0.33 | 0.32 | 0.52 | 0.53 | 0.52 | 0.52 | 0.53 | 0.52 |
| Sat Flow, veh/h | 644 | 560 | 140 | 546 | 628 | 41 | 2 | 1889 | 108 | 1 | 2930 | 359 |
| Grp Volume(v), veh/h | 442 | 0 | 0 | 327 | 0 | 0 | 547 | 0 | 773 | 895 | 0 | 829 |
| Grp Sat Flow(s),veh/h/ln | 1344 | 0 | 0 | 1215 | 0 | 0 | 425 | 0 | 1574 | 1707 | 0 | 1583 |
| Q Serve(g_s), s | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 33.7 | 5.3 | 0.0 | 38.5 |
| Cycle Q Clear(g_c), s | 24.0 | 0.0 | 0.0 | 18.5 | 0.0 | 0.0 | 39.0 | 0.0 | 33.7 | 39.0 | 0.0 | 38.5 |
| Prop In Lane | 0.50 | | 0.10 | 0.50 | | 0.03 | 0.14 | | 0.07 | 0.00 | | 0.23 |
| Lane Grp Cap(c), veh/h | 502 | 0 | 0 | 461 | 0 | 0 | 125 | 0 | 842 | 811 | 0 | 845 |
| V/C Ratio(X) | 0.88 | 0.00 | 0.00 | 0.71 | 0.00 | 0.00 | 4.39 | 0.00 | 0.92 | 1.10 | 0.00 | 0.98 |
| Avail Cap(c_a), veh/h | 502 | 0 | 0 | 461 | 0 | 0 | 276 | 0 | 840 | 936 | 0 | 844 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.5 | 0.0 | 0.0 | 22.7 | 0.0 | 0.0 | 20.4 | 0.0 | 17.1 | 18.0 | 0.0 | 17.3 |
| Incr Delay (d2), s/veh | 16.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 1542.6 | 0.0 | 16.5 | 64.0 | 0.0 | 26.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 17.1 | 0.0 | 0.0 | 11.3 | 0.0 | 0.0 | 100.9 | 0.0 | 27.5 | 58.1 | 0.0 | 30.8 |
| LnGrp Delay(d),s/veh | 42.0 | 0.0 | 0.0 | 27.7 | 0.0 | 0.0 | 1563.1 | 0.0 | 33.6 | 84.0 | 0.0 | 44.0 |
| LnGrp LOS | D | | | C | | | F | | C | F | | D |
| Approach Vol, veh/h | | 442 | | | 327 | | | 1320 | | | 1724 | |
| Approach Delay, s/veh | | 42.0 | | | 27.7 | | | 667.8 | | | 64.8 | |
| Approach LOS | | D | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 45.0 | | 30.0 | | 45.0 | | 30.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 39.0 | | 24.0 | | 39.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 41.0 | | 26.0 | | 41.0 | | 20.5 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 1.2 |

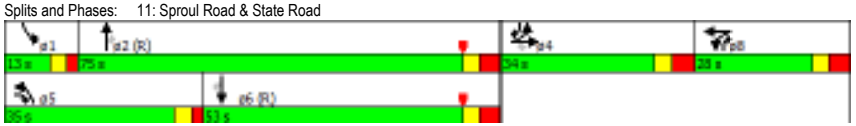
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 267.7 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 433 | 88 | 752 | 322 | 160 | 73 | 325 | 780 | 326 | 95 | 1139 | 544 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 40% | | | 14% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 34.0 | 34.0 | 35.0 | 28.0 | 28.0 | | 35.0 | 75.0 | 28.0 | 13.0 | 53.0 | 34.0 |
| Total Split (%) | 22.7% | 22.7% | 23.3% | 18.7% | 18.7% | | 23.3% | 50.0% | 18.7% | 8.7% | 35.3% | 22.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 433 | 88 | 752 | 322 | 160 | 73 | 325 | 780 | 326 | 95 | 1139 | 544 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1820 | 1844 | 1872 | 1856 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 511 | 0 | 0 | 248 | 282 | 0 | 335 | 804 | 0 | 98 | 1174 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 597 | 0 | 603 | 261 | 272 | 0 | 351 | 1615 | 941 | 103 | 1061 | 757 |
| Arrive On Green | 0.17 | 0.00 | 0.00 | 0.15 | 0.15 | 0.00 | 0.21 | 0.48 | 0.00 | 0.06 | 0.33 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 511 | 0 | 0 | 248 | 282 | 0 | 335 | 804 | 0 | 98 | 1174 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 21.2 | 0.0 | 0.0 | 20.7 | 22.0 | 0.0 | 29.3 | 24.4 | 0.0 | 8.5 | 49.6 | 0.0 |
| Cycle Q Clear(g_c), s | 21.2 | 0.0 | 0.0 | 20.7 | 22.0 | 0.0 | 29.3 | 24.4 | 0.0 | 8.5 | 49.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 597 | 0 | 603 | 261 | 272 | 0 | 351 | 1615 | 941 | 103 | 1061 | 757 |
| V/C Ratio(X) | 0.86 | 0.00 | 0.00 | 0.95 | 1.04 | 0.00 | 0.96 | 0.50 | 0.00 | 0.95 | 1.11 | 0.00 |
| Avail Cap(c_a), veh/h | 656 | 0 | 617 | 261 | 272 | 0 | 351 | 1615 | 954 | 103 | 1119 | 757 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 60.5 | 0.0 | 0.0 | 63.4 | 64.0 | 0.0 | 58.8 | 27.0 | 0.0 | 70.3 | 51.5 | 0.0 |
| Incr Delay (d2), s/veh | 10.1 | 0.0 | 0.0 | 41.6 | 64.3 | 0.0 | 36.3 | 1.1 | 0.0 | 73.4 | 61.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 16.7 | 0.0 | 0.0 | 19.2 | 29.0 | 0.0 | 24.1 | 17.5 | 0.0 | 10.2 | 58.9 | 0.0 |
| LnGrp Delay(d),s/veh | 70.8 | 0.0 | 0.0 | 105.1 | 128.3 | 0.0 | 95.1 | 28.2 | 0.0 | 143.7 | 131.3 | 0.0 |
| LnGrp LOS | E | | | F | F | | F | C | | F | F | |
| Approach Vol, veh/h | | 511 | | | 530 | | | 1139 | | | 1272 | |
| Approach Delay, s/veh | | 70.8 | | | 117.4 | | | 47.8 | | | 132.3 | |
| Approach LOS | | E | | | F | | | D | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 77.6 | | 31.4 | 35.0 | 55.6 | | 28.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 8.0 | 68.0 | | 27.0 | 30.0 | 46.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | 11.0 | 26.9 | | 23.7 | 31.8 | 52.1 | | 24.5 |
| Green Ext Time (p_c), s | 0.0 | 12.2 | | 0.7 | 0.0 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 93.0
HCM 2010 LOS F

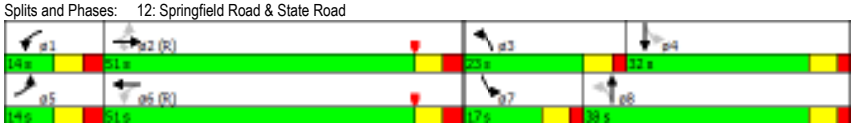
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 186 | 1459 | 543 | 38 | 1252 | 121 | 368 | 453 | 43 | 280 | 494 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 14.0 | 51.0 | 51.0 | 14.0 | 51.0 | | 23.0 | 38.0 | | 17.0 | 32.0 | |
| Total Split (%) | 11.7% | 42.5% | 42.5% | 11.7% | 42.5% | | 19.2% | 31.7% | | 14.2% | 26.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 186 | 1459 | 543 | 38 | 1252 | 121 | 368 | 453 | 43 | 280 | 494 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1807 | 1827 |
| Adj Flow Rate, veh/h | 188 | 1474 | 0 | 38 | 1265 | 0 | 372 | 458 | 0 | 283 | 499 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 177 | 1423 | 637 | 114 | 1232 | 0 | 316 | 493 | 0 | 232 | 407 | 0 |
| Arrive On Green | 0.07 | 0.41 | 0.00 | 0.03 | 0.38 | 0.00 | 0.15 | 0.28 | 0.00 | 0.10 | 0.22 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Grp Volume(v), veh/h | 188 | 1474 | 0 | 38 | 1265 | 0 | 372 | 458 | 0 | 283 | 499 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Q Serve(g_s), s | 8.0 | 49.0 | 0.0 | 1.7 | 45.0 | 0.0 | 18.0 | 29.9 | 0.0 | 12.0 | 27.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 49.0 | 0.0 | 1.7 | 45.0 | 0.0 | 18.0 | 29.9 | 0.0 | 12.0 | 27.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 177 | 1423 | 637 | 114 | 1232 | 0 | 316 | 493 | 0 | 232 | 407 | 0 |
| V/C Ratio(X) | 1.06 | 1.04 | 0.00 | 0.33 | 1.03 | 0.00 | 1.18 | 0.93 | 0.00 | 1.22 | 1.23 | 0.00 |
| Avail Cap(c_a), veh/h | 177 | 1423 | 637 | 168 | 1232 | 0 | 316 | 493 | 0 | 256 | 407 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.0 | 35.5 | 0.0 | 29.9 | 37.5 | 0.0 | 35.5 | 42.6 | 0.0 | 35.5 | 46.5 | 0.0 |
| Incr Delay (d2), s/veh | 86.0 | 33.6 | 0.0 | 1.7 | 32.8 | 0.0 | 107.9 | 24.2 | 0.0 | 130.8 | 122.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 73.1 | 7.3 | 0.0 | 0.0 | 2.8 | 0.0 | 19.1 | 1.7 | 0.0 | 12.6 | 14.3 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 22.1 | 55.8 | 0.0 | 1.4 | 47.2 | 0.0 | 37.8 | 25.7 | 0.0 | 16.2 | 51.1 | 0.0 |
| LnGrp Delay(d),s/veh | 191.2 | 76.4 | 0.0 | 31.6 | 73.1 | 0.0 | 162.6 | 68.5 | 0.0 | 178.9 | 183.1 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | E | | F | F | |
| Approach Vol, veh/h | | 1662 | | | 1303 | | | 830 | | | 782 | |
| Approach Delay, s/veh | | 89.4 | | | 71.9 | | | 110.6 | | | 181.6 | |
| Approach LOS | | F | | | E | | | F | | | F | |

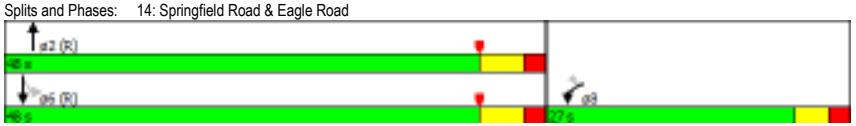
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 55.0 | 23.0 | 32.0 | 14.0 | 51.0 | 17.0 | 38.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 44.0 | 17.0 | 26.0 | 7.0 | 44.0 | 11.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 51.5 | 20.5 | 29.5 | 10.5 | 47.5 | 14.5 | 32.4 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 104.0 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 390 | 88 | 474 | 379 | 217 | 620 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 27.0 | 27.0 | 48.0 | | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | 64.0% | | 64.0% | 64.0% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 75 | |
| Offset: 13 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 390 | 88 | 474 | 379 | 217 | 620 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1809 | 1809 | 1771 | 1791 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 411 | 75 | 499 | 352 | 228 | 653 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 1 | 1 |
| Cap, veh/h | 483 | 451 | 568 | 400 | 94 | 177 |
| Arrive On Green | 0.28 | 0.28 | 0.60 | 0.59 | 0.59 | 0.60 |
| Sat Flow, veh/h | 1723 | 1537 | 968 | 683 | 85 | 343 |
| Grp Volume(v), veh/h | 411 | 75 | 0 | 851 | 881 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1723 | 1537 | 0 | 1651 | 428 | 0 |
| Q Serve(g_s), s | 16.9 | 2.8 | 0.0 | 32.0 | 12.0 | 0.0 |
| Cycle Q Clear(g_c), s | 16.9 | 2.8 | 0.0 | 32.0 | 44.0 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.41 | 0.26 | |
| Lane Grp Cap(c), veh/h | 483 | 451 | 0 | 968 | 240 | 0 |
| V/C Ratio(X) | 0.85 | 0.17 | 0.00 | 0.88 | 3.67 | 0.00 |
| Avail Cap(c_a), veh/h | 528 | 471 | 0 | 991 | 312 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 25.6 | 19.7 | 0.0 | 13.5 | 25.7 | 0.0 |
| Incr Delay (d2), s/veh | 11.8 | 0.2 | 0.0 | 11.2 | 1201.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.8 | 2.1 | 0.0 | 24.9 | 146.2 | 0.0 |
| LnGrp Delay(d),s/veh | 37.6 | 19.9 | 0.0 | 24.7 | 1227.0 | 0.0 |
| LnGrp LOS | D | B | | C | F | |
| Approach Vol, veh/h | 486 | | 851 | | 881 | |
| Approach Delay, s/veh | 34.8 | | 24.7 | | 1227.0 | |
| Approach LOS | C | | C | | F | |

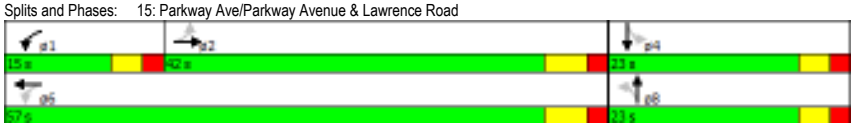
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 50.0 | | | | 50.0 | | 25.0 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | | | 42.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 34.0 | | | | 46.0 | | 19.4 |
| Green Ext Time (p_c), s | | 5.7 | | | | 0.0 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 504.5 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 688 | 236 | 418 | 869 | 5 | 270 | 23 | 273 | 6 | 40 | 33 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 578 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 15.8 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 42.0 | 42.0 | | 15.0 | 57.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 52.5% | 52.5% | | 18.8% | 71.3% | | 28.8% | 28.8% | | 28.8% | 28.8% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 80 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 688 | 236 | 418 | 869 | 5 | 270 | 23 | 273 | 6 | 40 | 33 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1810 | 1827 |
| Adj Flow Rate, veh/h | 30 | 709 | 234 | 431 | 896 | 5 | 278 | 24 | 186 | 6 | 41 | 25 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 65 | 1317 | 499 | 92 | 1035 | 6 | 399 | 41 | 317 | 60 | 250 | 139 |
| Arrive On Green | 0.64 | 0.65 | 0.64 | 0.64 | 0.65 | 0.64 | 0.24 | 0.24 | 0.22 | 0.22 | 0.24 | 0.22 |
| Sat Flow, veh/h | 27 | 2027 | 768 | 3 | 1593 | 9 | 1253 | 172 | 1334 | 46 | 1051 | 583 |
| Grp Volume(v), veh/h | 517 | 0 | 456 | 431 | 0 | 901 | 278 | 0 | 210 | 72 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1327 | 0 | 1494 | 3 | 0 | 1602 | 1253 | 0 | 1506 | 1680 | 0 | 0 |
| Q Serve(g_s), s | 5.7 | 0.0 | 12.5 | 80.0 | 0.0 | 36.0 | 14.2 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 41.7 | 0.0 | 12.5 | 80.0 | 0.0 | 36.0 | 16.4 | 0.0 | 10.0 | 2.7 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.51 | 1.00 | | 0.01 | 1.00 | | 0.89 | 0.08 | | 0.35 |
| Lane Grp Cap(c), veh/h | 894 | 0 | 971 | 0 | 0 | 1041 | 399 | 0 | 358 | 427 | 0 | 0 |
| V/C Ratio(X) | 0.58 | 0.00 | 0.47 | 0.00 | 0.00 | 0.87 | 0.70 | 0.00 | 0.59 | 0.17 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 894 | 0 | 971 | 0 | 0 | 1041 | 399 | 0 | 358 | 427 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 8.2 | 0.0 | 7.2 | 0.0 | 0.0 | 11.2 | 29.2 | 0.0 | 27.4 | 24.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.9 | 0.0 | 0.4 | 0.0 | 0.0 | 7.8 | 5.2 | 0.0 | 2.5 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.0 | 0.0 | 8.9 | 0.0 | 0.0 | 24.7 | 10.7 | 0.0 | 7.8 | 2.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 9.1 | 0.0 | 7.6 | 0.0 | 0.0 | 19.0 | 34.4 | 0.0 | 29.9 | 24.6 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | B | C | | C | C | | |
| Approach Vol, veh/h | | 973 | | | 1332 | | | 488 | | | 72 | |
| Approach Delay, s/veh | | 8.4 | | | 12.8 | | | 32.5 | | | 24.6 | |
| Approach LOS | | A | | | B | | | C | | | C | |

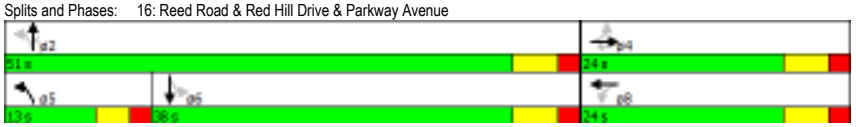
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 57.0 | | 23.0 | | 57.0 | | 23.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 18.0 | | 51.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 43.7 | | 4.7 | | 82.0 | | 18.9 |
| Green Ext Time (p_c), s | | 0.0 | | 2.1 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.0 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 62 | 145 | 363 | 38 | 63 | 11 | 379 | 438 | 66 | 5 | 634 | 69 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | | 13.0 | 51.0 | 51.0 | 38.0 | 38.0 | |
| Total Split (%) | 32.0% | 32.0% | 32.0% | 32.0% | 32.0% | | 17.3% | 68.0% | 68.0% | 50.7% | 50.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 73.7 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 62 | 145 | 363 | 38 | 63 | 11 | 379 | 438 | 66 | 5 | 634 | 69 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1752 | 1729 | 1836 | 1786 | 1836 | 1713 | 1764 | 1680 | 1836 | 1903 | 1836 |
| Adj Flow Rate, veh/h | 65 | 153 | 320 | 40 | 66 | 11 | 399 | 461 | 63 | 5 | 667 | 69 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 153 | 313 | 374 | 110 | 159 | 21 | 379 | 1078 | 873 | 50 | 762 | 57 |
| Arrive On Green | 0.24 | 0.26 | 0.26 | 0.24 | 0.26 | 0.24 | 0.12 | 0.61 | 0.61 | 0.42 | 0.43 | 0.42 |
| Sat Flow, veh/h | 363 | 1250 | 1464 | 238 | 726 | 100 | 1631 | 1764 | 1428 | 3 | 1692 | 174 |
| Grp Volume(v), veh/h | 218 | 0 | 320 | 117 | 0 | 0 | 399 | 461 | 63 | 741 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1614 | 0 | 1464 | 1064 | 0 | 0 | 1631 | 1764 | 1428 | 1869 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 15.4 | 0.8 | 0.0 | 0.0 | 9.0 | 10.2 | 1.3 | 4.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.4 | 0.0 | 15.4 | 9.1 | 0.0 | 0.0 | 9.0 | 10.2 | 1.3 | 28.1 | 0.0 | 0.0 |
| Prop In Lane | 0.30 | | 1.00 | 0.34 | | 0.09 | 1.00 | | 1.00 | 0.01 | | 0.09 |
| Lane Grp Cap(c), veh/h | 445 | 0 | 374 | 278 | 0 | 0 | 379 | 1078 | 873 | 837 | 0 | 0 |
| V/C Ratio(X) | 0.49 | 0.00 | 0.86 | 0.42 | 0.00 | 0.00 | 1.05 | 0.43 | 0.07 | 0.89 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 454 | 0 | 375 | 323 | 0 | 0 | 421 | 1093 | 885 | 855 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 23.9 | 0.0 | 26.6 | 22.9 | 0.0 | 0.0 | 12.8 | 7.6 | 5.9 | 20.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 17.4 | 1.0 | 0.0 | 0.0 | 58.6 | 0.3 | 0.0 | 10.9 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 7.3 | 0.0 | 13.1 | 4.0 | 0.0 | 0.0 | 18.3 | 8.6 | 1.0 | 24.3 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 24.8 | 0.0 | 45.4 | 23.9 | 0.0 | 0.0 | 71.4 | 7.9 | 5.9 | 31.2 | 0.0 | 0.0 |
| LnGrp LOS | C | | D | C | | | F | A | A | C | | |
| Approach Vol, veh/h | | 538 | | | 117 | | | 923 | | | 741 | |
| Approach Delay, s/veh | | 37.1 | | | 23.9 | | | 35.2 | | | 31.2 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 50.2 | | 24.0 | 13.0 | 37.2 | | 24.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 45.0 | | 18.0 | 8.0 | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 12.7 | | 17.9 | 11.5 | 30.1 | | 11.1 |
| Green Ext Time (p_c), s | | 6.2 | | 0.0 | 0.0 | 1.1 | | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.8 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 25 | 417 | 123 | 110 | 377 | 36 | 150 | 0 | 105 | 79 | 0 | 51 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 175 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | 3 | | 3 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles (%) | 4% | 3% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Parking (#/hr) | | | 0 | | | | | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | 15.0 | 3.0 | 15.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Minimum Split (s) | 21.0 | 21.0 | 21.0 | 8.0 | 20.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 14.0 | 38.0 | | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 23.3% | 63.3% | | 36.7% | 36.7% | | 36.7% | 36.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 10 (17%), Referenced to phase 2:EBTL and 6:WBT, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 25 | 417 | 123 | 110 | 377 | 36 | 150 | 0 | 105 | 79 | 0 | 51 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1747 | 1765 | 1729 | 1748 | 1764 | 1765 | 1765 | 1800 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 28 | 469 | 138 | 124 | 424 | 40 | 169 | 0 | 118 | 89 | 0 | 57 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 100 | 1289 | 563 | 192 | 944 | 89 | 455 | 0 | 400 | 257 | 23 | 118 |
| Arrive On Green | 0.40 | 0.42 | 0.42 | 0.12 | 0.60 | 0.58 | 0.27 | 0.00 | 0.25 | 0.25 | 0.00 | 0.25 |
| Sat Flow, veh/h | 81 | 3093 | 1350 | 1647 | 1573 | 148 | 1265 | 0 | 1500 | 602 | 87 | 442 |
| Grp Volume(v), veh/h | 263 | 234 | 138 | 124 | 0 | 464 | 169 | 0 | 118 | 146 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1664 | 1510 | 1350 | 1647 | 0 | 1722 | 1265 | 0 | 1500 | 1132 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 6.4 | 4.0 | 4.3 | 0.0 | 8.9 | 0.0 | 0.0 | 3.8 | 4.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.3 | 6.4 | 4.0 | 4.3 | 0.0 | 8.9 | 6.9 | 0.0 | 3.8 | 8.0 | 0.0 | 0.0 |
| Prop In Lane | 0.11 | | 1.00 | 1.00 | | 0.09 | 1.00 | | 1.00 | 0.61 | | 0.39 |
| Lane Grp Cap(c), veh/h | 732 | 629 | 563 | 192 | 0 | 1033 | 455 | 0 | 400 | 379 | 0 | 0 |
| V/C Ratio(X) | 0.36 | 0.37 | 0.25 | 0.64 | 0.00 | 0.45 | 0.37 | 0.00 | 0.30 | 0.38 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 732 | 629 | 563 | 275 | 0 | 1033 | 497 | 0 | 450 | 424 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 12.1 | 12.1 | 11.4 | 25.3 | 0.0 | 6.6 | 18.7 | 0.0 | 17.9 | 19.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.4 | 1.7 | 1.0 | 3.6 | 0.0 | 1.4 | 0.5 | 0.0 | 0.4 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.1 | 5.3 | 2.9 | 3.9 | 0.0 | 8.0 | 4.3 | 0.0 | 2.9 | 4.1 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 13.4 | 13.8 | 12.4 | 28.9 | 0.0 | 8.0 | 19.2 | 0.0 | 18.3 | 20.6 | 0.0 | 0.0 |
| LnGrp LOS | B | B | B | C | | A | B | | B | C | | |
| Approach Vol, veh/h | | 635 | | | 588 | | | 287 | | | 146 | |
| Approach Delay, s/veh | | 13.3 | | | 12.4 | | | 18.8 | | | 20.6 | |
| Approach LOS | | B | | | B | | | B | | | C | |

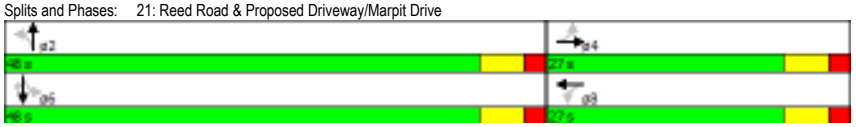
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.0 | 29.0 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 9.0 | 19.0 | | 17.0 | | 33.0 | | 17.0 |
| Max Q Clear Time (g_c+I1), s | 6.8 | 8.9 | | 10.0 | | 10.9 | | 9.4 |
| Green Ext Time (p_c), s | 0.1 | 3.2 | | 1.1 | | 4.3 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.6 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 36 | 21 | 94 | 307 | 18 | 90 | 75 | 455 | 122 | 42 | 828 | 49 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 456 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 10.4 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 1% | 2% | 2% | 1% | 15% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 27.0 | 27.0 | | 27.0 | 27.0 | | 48.0 | 48.0 | | 48.0 | 48.0 | 48.0 |
| Total Split (%) | 36.0% | 36.0% | | 36.0% | 36.0% | | 64.0% | 64.0% | | 64.0% | 64.0% | 64.0% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 69.7 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 36 | 21 | 94 | 307 | 18 | 90 | 75 | 455 | 122 | 42 | 828 | 49 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1731 | 1779 | 1800 | 1765 | 1768 | 1800 | 1565 | 1782 | 1765 |
| Adj Flow Rate, veh/h | 38 | 22 | 99 | 323 | 19 | 88 | 79 | 479 | 120 | 44 | 872 | 52 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 15 | 1 | 2 |
| Cap, veh/h | 389 | 82 | 370 | 377 | 81 | 375 | 190 | 783 | 196 | 335 | 1022 | 860 |
| Arrive On Green | 0.29 | 0.29 | 0.28 | 0.29 | 0.29 | 0.29 | 0.57 | 0.57 | 0.56 | 0.57 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1214 | 280 | 1262 | 1176 | 276 | 1278 | 571 | 1366 | 342 | 686 | 1782 | 1500 |
| Grp Volume(v), veh/h | 38 | 0 | 121 | 323 | 0 | 107 | 79 | 0 | 599 | 44 | 872 | 52 |
| Grp Sat Flow(s),veh/h/ln | 1214 | 0 | 1542 | 1176 | 0 | 1554 | 571 | 0 | 1708 | 686 | 1782 | 1500 |
| Q Serve(g_s), s | 1.8 | 0.0 | 4.6 | 17.9 | 0.0 | 3.9 | 10.1 | 0.0 | 17.3 | 3.3 | 30.7 | 1.1 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 4.6 | 22.0 | 0.0 | 3.9 | 40.7 | 0.0 | 17.3 | 20.2 | 30.7 | 1.1 |
| Prop In Lane | 1.00 | | 0.82 | 1.00 | | 0.82 | 1.00 | | 0.20 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 389 | 0 | 452 | 377 | 0 | 456 | 190 | 0 | 979 | 335 | 1022 | 860 |
| V/C Ratio(X) | 0.10 | 0.00 | 0.27 | 0.86 | 0.00 | 0.23 | 0.42 | 0.00 | 0.61 | 0.13 | 0.85 | 0.06 |
| Avail Cap(c_a), veh/h | 389 | 0 | 452 | 377 | 0 | 456 | 190 | 0 | 979 | 335 | 1022 | 860 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.3 | 0.0 | 20.7 | 29.7 | 0.0 | 20.1 | 30.4 | 0.0 | 10.6 | 17.0 | 13.4 | 7.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.3 | 17.4 | 0.0 | 0.3 | 1.4 | 0.0 | 1.1 | 0.2 | 7.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.1 | 0.0 | 3.6 | 13.2 | 0.0 | 3.1 | 3.0 | 0.0 | 13.0 | 1.2 | 23.5 | 0.9 |
| LnGrp Delay(d),s/veh | 22.4 | 0.0 | 21.0 | 47.1 | 0.0 | 20.4 | 31.8 | 0.0 | 11.7 | 17.2 | 20.5 | 7.1 |
| LnGrp LOS | C | | C | D | | C | C | | B | B | C | A |
| Approach Vol, veh/h | | 159 | | | 430 | | | 678 | | | 968 | |
| Approach Delay, s/veh | | 21.3 | | | 40.4 | | | 14.1 | | | 19.6 | |
| Approach LOS | | C | | | D | | | B | | | B | |

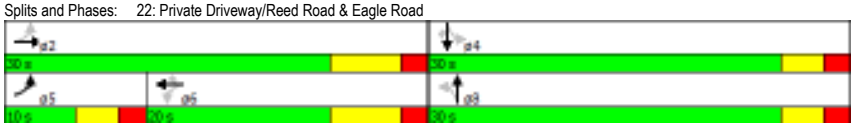
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 48.0 | | 27.0 | | 48.0 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | | 42.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 43.2 | | 8.3 | | 33.2 | | 24.5 |
| Green Ext Time (p_c), s | | 0.0 | | 2.2 | | 5.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 174 | 406 | 0 | 1 | 305 | 481 | 0 | 0 | 0 | 715 | 1 | 470 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | Perm | | | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 10.0 | 30.0 | | 20.0 | 20.0 | 20.0 | 30.0 | 30.0 | | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 16.7% | 50.0% | | 33.3% | 33.3% | 33.3% | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 174 | 406 | 0 | 1 | 305 | 481 | 0 | 0 | 0 | 715 | 1 | 470 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1844 |
| Adj Flow Rate, veh/h | 181 | 423 | 0 | 1 | 318 | 416 | 0 | 0 | 0 | 745 | 1 | 455 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cap, veh/h | 342 | 756 | 0 | 60 | 403 | 342 | 0 | 823 | 0 | 277 | 254 | 679 |
| Arrive On Green | 0.10 | 0.40 | 0.00 | 0.22 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.42 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1466 | 0 | 1900 | 0 | 1302 | 2 | 1567 |
| Grp Volume(v), veh/h | 181 | 423 | 0 | 319 | 0 | 416 | 0 | 0 | 0 | 746 | 0 | 455 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1466 | 0 | 1900 | 0 | 1304 | 0 | 1567 |
| Q Serve(g_s), s | 4.2 | 10.4 | 0.0 | 0.2 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 24.5 | 0.0 | 13.9 |
| Cycle Q Clear(g_c), s | 4.2 | 10.4 | 0.0 | 10.6 | 0.0 | 14.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 13.9 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 342 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 733 | 0 | 679 |
| V/C Ratio(X) | 0.53 | 0.56 | 0.00 | 0.73 | 0.00 | 1.22 | 0.00 | 0.00 | 0.00 | 1.02 | 0.00 | 0.67 |
| Avail Cap(c_a), veh/h | 345 | 756 | 0 | 435 | 0 | 342 | 0 | 823 | 0 | 663 | 0 | 679 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.0 | 13.9 | 0.0 | 21.8 | 0.0 | 23.0 | 0.0 | 0.0 | 0.0 | 18.4 | 0.0 | 13.6 |
| Incr Delay (d2), s/veh | 1.5 | 1.3 | 0.0 | 7.2 | 0.0 | 121.0 | 0.0 | 0.0 | 0.0 | 37.7 | 0.0 | 2.6 |
| Initial Q Delay(d3),s/veh | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 17.1 | 0.0 | 0.0 | 0.0 | 9.6 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.0 | 9.6 | 0.0 | 10.1 | 0.0 | 32.8 | 0.0 | 0.0 | 0.0 | 37.8 | 0.0 | 10.6 |
| LnGrp Delay(d),s/veh | 17.1 | 15.3 | 0.0 | 29.1 | 0.0 | 161.1 | 0.0 | 0.0 | 0.0 | 65.7 | 0.0 | 16.1 |
| LnGrp LOS | B | B | | C | | F | | | | F | | B |
| Approach Vol, veh/h | | 604 | | | 735 | | | 0 | | | 1201 | |
| Approach Delay, s/veh | | 15.8 | | | 103.8 | | | 0.0 | | | 46.9 | |
| Approach LOS | | B | | | F | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 30.0 | | 30.0 | 10.0 | 20.0 | | 30.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 23.0 | | 25.0 | 5.0 | 13.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 12.9 | | 27.0 | 6.7 | 16.5 | | 0.0 |
| Green Ext Time (p_c), s | | 5.6 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 56.0 |
| HCM 2010 LOS | E |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 670 | 1325 | 6 | 927 | 1915 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | 1 | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 691 | 1372 | 0 | 956 | 1974 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 43.0 | 32.0 | | 43.0 | 75.0 |
| Total Split (%) | | 57.3% | 42.7% | | 57.3% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 35.0 | 25.0 | | 35.0 | 75.0 |
| Actuated g/C Ratio | | 0.47 | 0.33 | | 0.47 | 1.00 |
| v/c Ratio | | 0.57 | 1.20 | | 1.25 | 1.17 |
| Control Delay | | 13.9 | 122.4 | | 147.3 | 90.7 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 13.9 | 122.4 | | 147.3 | 90.7 |
| LOS | | B | F | | F | F |
| Approach Delay | | | 122.4 | | | 109.1 |
| Approach LOS | | | F | | | F |
| Queue Length 50th (ft) | | 140 | ~692 | | ~567 | ~281 |
| Queue Length 95th (ft) | | m155 | m258 | | #785 | #536 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1202 | 1143 | | 763 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



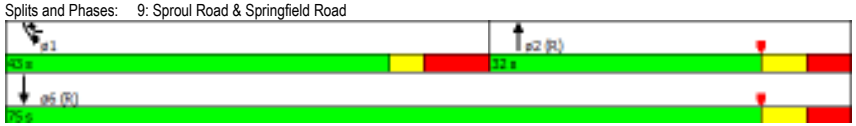


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.57 | 1.20 | | 1.25 | 1.17 |

**Intersection Summary**

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 70 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 99.6 Intersection LOS: F
Intersection Capacity Utilization 112.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 109 | 70 | 125 | 20 | 31 | 19 | 66 | 419 | 4 | 23 | 533 | 99 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 216 | | | 248 | | | 406 | | | 578 | |
| Travel Time (s) | | 5.9 | | | 6.8 | | | 11.1 | | | 15.8 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 46.6 |
| Intersection LOS | E |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 109 | 70 | 125 | 0 | 20 | 31 | 19 | 0 | 66 | 419 | 4 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 25 |
| Mvmt Flow | 0 | 116 | 74 | 133 | 0 | 21 | 33 | 20 | 0 | 70 | 446 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 15 | 13.1 | 49 |
| HCM LOS | B | B | E |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 13% | 61% | 0% | 29% | 4% |
| Vol Thru, % | 86% | 39% | 0% | 44% | 81% |
| Vol Right, % | 1% | 0% | 100% | 27% | 15% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 489 | 179 | 125 | 70 | 655 |
| LT Vol | 66 | 109 | 0 | 20 | 23 |
| Through Vol | 419 | 70 | 0 | 31 | 533 |
| RT Vol | 4 | 0 | 125 | 19 | 99 |
| Lane Flow Rate | 520 | 190 | 133 | 74 | 697 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.934 | 0.429 | 0.263 | 0.171 | 1 |
| Departure Headway (Hd) | 6.462 | 8.115 | 7.11 | 8.271 | 6.298 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 562 | 444 | 504 | 431 | 571 |
| Service Time | 4.511 | 5.873 | 4.869 | 6.365 | 4.387 |
| HCM Lane V/C Ratio | 0.925 | 0.428 | 0.264 | 0.172 | 1.221 |
| HCM Control Delay | 49 | 16.9 | 12.4 | 13.1 | 63 |
| HCM Lane LOS | E | C | B | B | F |
| HCM 95th-tile Q | 11.8 | 2.1 | 1 | 0.6 | 14.5 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 23 | 533 | 99 |
| Peak Hour Factor | 0.92 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 24 | 567 | 105 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 63 |
| HCM LOS | F |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 18 | 1861 | 3 | 56 | 2932 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 1861 | 3 | 56 | 2932 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 19 | 1919 | 3 | 58 | 3023 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3547 | 961 | 0 | 0 | 1922 | 0 |
| Stage 1 | 1920 | - | - | - | - | - |
| Stage 2 | 1627 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *3 | *389 | - | - | *470 | - |
| Stage 1 | *403 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *3 | *389 | - | - | *470 | - |
| Mov Cap-2 Maneuver | *3 | - | - | - | - | - |
| Stage 1 | *403 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.7 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 389 | * 470 | - |
| HCM Lane V/C Ratio | - | - | 0.048 | 0.123 | - |
| HCM Control Delay (s) | - | - | 14.7 | 13.7 | 0 |
| HCM Lane LOS | - | - | B | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.4 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 124 | 106 | 26 | 709 | 804 | 283 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 46.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 124 | 106 | 26 | 709 | 804 | 283 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 1 | 0 | 1 | 0 | 1 | 1 |
| Mvmt Flow | 127 | 108 | 27 | 723 | 820 | 289 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1742 | 965 | 1109 | 0 | - | 0 |
| Stage 1 | 965 | - | - | - | - | - |
| Stage 2 | 777 | - | - | - | - | - |
| Critical Hdwy | 6.41 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.41 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | *~ 102 | *407 | 311 | - | - | - |
| Stage 1 | *421 | - | - | - | - | - |
| Stage 2 | *504 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | *~ 87 | *407 | 311 | - | - | - |
| Mov Cap-2 Maneuver | *~ 87 | - | - | - | - | - |
| Stage 1 | *421 | - | - | - | - | - |
| Stage 2 | *431 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 412 | 0.6 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 311 | - | 136 | - | - |
| HCM Lane V/C Ratio | 0.085 | - | 1.726 | - | - |
| HCM Control Delay (s) | 17.7 | 0 | $ 412 | - | - |
| HCM Lane LOS | C | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 17.4 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 207 | 520 | 18 | 0 | 493 | 29 | 0 | 0 | 11 | 27 | 0 | 79 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1900 | 1900 | 1800 | 1800 | 1900 | 1900 | 1900 | 1800 | 1900 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 30 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 382 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 8.7 | | | 7.8 | |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 207 | 520 | 18 | 0 | 493 | 29 | 0 | 0 | 11 | 27 | 0 | 79 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 235 | 591 | 20 | 0 | 560 | 33 | 0 | 0 | 12 | 31 | 0 | 90 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 593 | 0 | 0 | 611 | 0 | 0 | 1694 | 1665 | 306 | 1343 | 1659 | 577 |
| Stage 1 | - | - | - | - | - | - | 1072 | 1072 | - | 577 | 577 | - |
| Stage 2 | - | - | - | - | - | - | 622 | 593 | - | 766 | 1082 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.7 | 6.53 | 7.2 | 7.5 | 6.53 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 2.9 | 2.8 | 4.019 | 2.9 |
| Pot Cap-1 Maneuver | *984 | - | - | 942 | - | - | *141 | *166 | 760 | *374 | *169 | *814 |
| Stage 1 | - | - | - | - | - | - | *258 | *296 | - | *843 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *843 | *588 | - | *410 | *293 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *984 | - | - | 942 | - | - | *102 | *126 | 760 | *300 | *128 | *814 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *102 | *126 | - | *300 | *128 | - |
| Stage 1 | - | - | - | - | - | - | *196 | *225 | - | *642 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *750 | *588 | - | *307 | *223 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 9.8 | 13.1 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 760 | * 984 | - | - | 942 | - | - | 567 |
| HCM Lane V/C Ratio | 0.016 | 0.239 | - | - | - | - | - | 0.212 |
| HCM Control Delay (s) | 9.8 | 9.8 | - | - | 0 | - | - | 13.1 |
| HCM Lane LOS | A | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0.9 | - | - | 0 | - | - | 0.8 |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 56 | 319 | 568 | 42 | 203 | 836 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 33.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 56 | 319 | 568 | 42 | 203 | 836 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 61 | 347 | 617 | 46 | 221 | 909 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1967 | 617 | 0 | 0 | 617 | 0 |
| Stage 1 | 617 | - | - | - | - | - |
| Stage 2 | 1350 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 91 | 535 | - | - | 735 | - |
| Stage 1 | 649 | - | - | - | - | - |
| Stage 2 | 304 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 36 | 535 | - | - | 735 | - |
| Mov Cap-2 Maneuver | 100 | - | - | - | - | - |
| Stage 1 | 649 | - | - | - | - | - |
| Stage 2 | 119 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 172.5 | 0 | 2.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 324 | 735 | - |
| HCM Lane V/C Ratio | - | - | 1.258 | 0.3 | - |
| HCM Control Delay (s) | - | - | 172.5 | 12 | 0 |
| HCM Lane LOS | - | - | F | B | A |
| HCM 95th %tile Q(veh) | - | - | 18.6 | 1.3 | - |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 15 | 527 | 412 | 25 | 74 | 43 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 15 | 527 | 412 | 25 | 74 | 43 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 1 | 1 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 1 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 16 | 561 | 438 | 27 | 79 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 466 | 0 | - | 0 | 1046 | 233 |
| Stage 1 | - | - | - | - | 453 | - |
| Stage 2 | - | - | - | - | 593 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.1 | 7 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.3 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.9 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 2.8 | 2.9 |
| Pot Cap-1 Maneuver | 1053 | - | - | - | 239 | 865 |
| Stage 1 | - | - | - | - | 690 | - |
| Stage 2 | - | - | - | - | 607 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1053 | - | - | - | 235 | 864 |
| Mov Cap-2 Maneuver | - | - | - | - | 235 | - |
| Stage 1 | - | - | - | - | 689 | - |
| Stage 2 | - | - | - | - | 597 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 23.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1053 | - | - | - | 321 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.388 |
| HCM Control Delay (s) | 8.5 | - | - | - | 23.1 |
| HCM Lane LOS | A | - | - | - | C |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 1.8 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 381 | 198 | 402 | 352 | 61 | 132 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1444 | | | 587 | 600 | |
| Travel Time (s) | 32.8 | | | 13.3 | 13.6 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 62.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 381 | 198 | 402 | 352 | 61 | 132 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Mvmt Flow | 389 | 202 | 410 | 359 | 62 | 135 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 389 | 0 | 1569 | 389 |
| Stage 1 | - | - | - | - | 389 | - |
| Stage 2 | - | - | - | - | 1180 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.41 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 883 | - | ~ 46 | 614 |
| Stage 1 | - | - | - | - | 605 | - |
| Stage 2 | - | - | - | - | 146 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 883 | - | ~ 19 | 614 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 19 | - |
| Stage 1 | - | - | - | - | 605 | - |
| Stage 2 | - | - | - | - | ~ 61 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 6.7 | $ 464.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 19 | 614 | - | - | 883 | - |
| HCM Lane V/C Ratio | 3.276 | 0.219 | - | - | 0.465 | - |
| HCM Control Delay (s) | $ 1442.5 | 12.5 | - | - | 12.6 | 0 |
| HCM Lane LOS | F | B | - | - | B | A |
| HCM 95th %tile Q(veh) | 8.2 | 0.8 | - | - | 2.5 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 124 | 1661 | 109 | 135 | 2536 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 124 | 1661 | 109 | 135 | 2536 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 128 | 1712 | 112 | 139 | 2614 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3355 | 912 | 0 | 0 | 1825 | 0 |
| Stage 1 | 1769 | - | - | - | - | - |
| Stage 2 | 1586 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *16 | *737 | - | - | 891 | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *38 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *14 | *737 | - | - | 891 | - |
| Mov Cap-2 Maneuver | *29 | - | - | - | - | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *32 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.9 | 0 | 0.5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 737 | 891 | - |
| HCM Lane V/C Ratio | - | - | 0.173 | 0.156 | - |
| HCM Control Delay (s) | - | - | 10.9 | 9.8 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.6 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 569 | 6 | 3 | 510 | 2 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 569 | 6 | 3 | 510 | 2 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 1 | 2 | 2 | 1 | 2 | 2 |
| Mvmt Flow | 618 | 7 | 3 | 554 | 2 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 625 | 0 | 1183 | 313 |
| Stage 1 | - | - | - | - | 622 | - |
| Stage 2 | - | - | - | - | 561 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | - | - | 1175 | - | 296 | *957 |
| Stage 1 | - | - | - | - | 994 | - |
| Stage 2 | - | - | - | - | 594 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | 1175 | - | 295 | *957 |
| Mov Cap-2 Maneuver | - | - | - | - | 295 | - |
| Stage 1 | - | - | - | - | 994 | - |
| Stage 2 | - | - | - | - | 592 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 383 | - | - | 1175 | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.003 | - |
| HCM Control Delay (s) | 14.5 | - | - | 8.1 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 722 | 618 | 10 | 0 | 69 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 3% | 1% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 722 | 618 | 10 | 0 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 3 | 1 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 785 | 672 | 11 | 0 | 75 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 683 | 0 | - | 0 | 1069 | 341 |
| Stage 1 | - | - | - | - | 677 | - |
| Stage 2 | - | - | - | - | 392 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 1112 | - | - | - | 348 | *926 |
| Stage 1 | - | - | - | - | 839 | - |
| Stage 2 | - | - | - | - | 678 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | 1112 | - | - | - | 348 | *926 |
| Mov Cap-2 Maneuver | - | - | - | - | 348 | - |
| Stage 1 | - | - | - | - | 839 | - |
| Stage 2 | - | - | - | - | 678 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1112 | - | - | - | 926 |
| HCM Lane V/C Ratio | - | - | - | - | 0.081 |
| HCM Control Delay (s) | 0 | - | - | - | 9.2 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.3 |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 44 | 99 | 138 | 62 | 5 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 44 | 99 | 138 | 62 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 0 | 2 |
| Mvmt Flow | 6 | 50 | 112 | 157 | 70 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 455 | 73 | 76 | 0 | - | 0 |
| Stage 1 | 73 | - | - | - | - | - |
| Stage 2 | 382 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 641 | 1056 | 1131 | - | - | - |
| Stage 1 | 1108 | - | - | - | - | - |
| Stage 2 | 788 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 571 | 1056 | 1131 | - | - | - |
| Mov Cap-2 Maneuver | 571 | - | - | - | - | - |
| Stage 1 | 1108 | - | - | - | - | - |
| Stage 2 | 702 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.9 | 3.6 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1131 | - | 972 | - | - |
| HCM Lane V/C Ratio | 0.099 | - | 0.057 | - | - |
| HCM Control Delay (s) | 8.5 | 0 | 8.9 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.2 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 34 | 1671 | 117 | 0 | 2493 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 30 | | 40 | | | 40 |
| Link Distance (ft) | 147 | | 437 | | | 633 |
| Travel Time (s) | 3.3 | | 7.4 | | | 10.8 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 2% | 7% | 2% | 2% | 4% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 34 | 1671 | 117 | 0 | 2493 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 7 | 2 | 2 | 4 |
| Mvmt Flow | 0 | 35 | 1741 | 122 | 0 | 2597 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3039 | 870 | 0 | 0 | 1741 | 0 |
| Stage 1 | 1741 | - | - | - | - | - |
| Stage 2 | 1298 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *1 | *445 | - | - | *538 | - |
| Stage 1 | *461 | - | - | - | - | - |
| Stage 2 | *38 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *1 | *445 | - | - | *538 | - |
| Mov Cap-2 Maneuver | *32 | - | - | - | - | - |
| Stage 1 | *461 | - | - | - | - | - |
| Stage 2 | *38 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.8 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 445 | * 538 | - |
| HCM Lane V/C Ratio | - | - | 0.08 | - | - |
| HCM Control Delay (s) | - | - | 13.8 | 0 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0 | - |

Notes

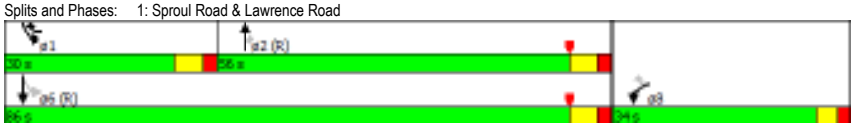
~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 556 | 555 | 1533 | 583 | 388 | 1437 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 0 | 0 | | 155 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 741 | | 389 | | | 1061 |
| Travel Time (s) | 11.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | Perm | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 16.0 | 12.0 | 16.0 |
| Total Split (s) | 34.0 | 30.0 | 56.0 | 56.0 | 30.0 | 86.0 |
| Total Split (%) | 28.3% | 25.0% | 46.7% | 46.7% | 25.0% | 71.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | C-Max | C-Max | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 556 | 555 | 1533 | 583 | 388 | 1437 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1747 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 567 | 449 | 1564 | 527 | 396 | 1466 |
| Adj No. of Lanes | 1 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 416 | 680 | 1418 | 666 | 435 | 2425 |
| Arrive On Green | 0.25 | 0.25 | 0.28 | 0.28 | 0.21 | 0.68 |
| Sat Flow, veh/h | 1663 | 1485 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 567 | 449 | 1564 | 527 | 396 | 1466 |
| Grp Sat Flow(s),veh/h/ln | 1663 | 1485 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 30.0 | 28.2 | 51.0 | 37.2 | 21.7 | 26.9 |
| Cycle Q Clear(g_c), s | 30.0 | 28.2 | 51.0 | 37.2 | 21.7 | 26.9 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 416 | 680 | 1418 | 666 | 435 | 2425 |
| V/C Ratio(X) | 1.36 | 0.66 | 1.10 | 0.79 | 0.91 | 0.60 |
| Avail Cap(c_a), veh/h | 416 | 680 | 1418 | 666 | 435 | 2425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 0.67 | 0.67 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.22 | 0.22 | 0.09 | 0.09 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.0 | 25.2 | 42.9 | 38.0 | 39.2 | 10.7 |
| Incr Delay (d2), s/veh | 167.1 | 0.5 | 47.6 | 0.9 | 23.0 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 4.6 | 0.0 | 10.6 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 59.2 | 14.2 | 58.8 | 18.2 | 24.3 | 19.7 |
| LnGrp Delay(d),s/veh | 212.1 | 25.8 | 95.1 | 38.9 | 72.7 | 11.8 |
| LnGrp LOS | F | C | F | D | E | B |
| Approach Vol, veh/h | 1016 | | 2091 | | | 1862 |
| Approach Delay, s/veh | 129.7 | | 80.9 | | | 24.8 |
| Approach LOS | F | | F | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 30.0 | 56.0 | | | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 24.0 | 50.0 | | | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 24.2 | 53.5 | | | | 29.4 | | 32.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 34.0 | | 0.0 |

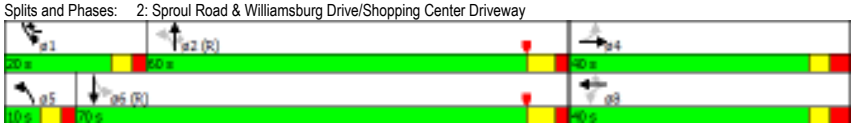
**Intersection Summary**

HCM 2010 Ctrl Delay 69.9
HCM 2010 LOS E

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 48 | 249 | 14 | 246 | 44 | 1823 | 181 | 185 | 1845 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 544 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 9.3 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | 10.0 | 3.0 | 10.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 12.0 | 10.0 | 16.0 | 16.0 | 12.0 | 16.0 | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | 20.0 | 10.0 | 60.0 | 60.0 | 20.0 | 70.0 | |
| Total Split (%) | 33.3% | 33.3% | | 33.3% | 33.3% | 16.7% | 8.3% | 50.0% | 50.0% | 16.7% | 58.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | C-Max | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 48 | 249 | 14 | 246 | 44 | 1823 | 181 | 185 | 1845 | 13 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1796 | 1800 | 1764 | 1764 | 1764 | 1764 | 1729 | 1816 | 1800 | 1800 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 44 | 265 | 15 | 218 | 47 | 1939 | 0 | 197 | 1963 | 13 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Cap, veh/h | 37 | 41 | 47 | 190 | 7 | 630 | 121 | 1506 | 715 | 247 | 1941 | 7 |
| Arrive On Green | 0.28 | 0.29 | 0.28 | 0.28 | 0.29 | 0.29 | 0.04 | 0.48 | 0.00 | 0.11 | 0.56 | 0.55 |
| Sat Flow, veh/h | 0 | 142 | 160 | 452 | 26 | 1499 | 1680 | 3286 | 1544 | 1714 | 3483 | 23 |
| Grp Volume(v), veh/h | 83 | 0 | 0 | 280 | 0 | 218 | 47 | 1939 | 0 | 197 | 963 | 1013 |
| Grp Sat Flow(s),veh/h/ln | 302 | 0 | 0 | 478 | 0 | 1499 | 1680 | 1643 | 1544 | 1714 | 1710 | 1796 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.3 | 1.7 | 58.2 | 0.0 | 9.2 | 66.7 | 66.7 |
| Cycle Q Clear(g_c), s | 34.0 | 0.0 | 0.0 | 34.0 | 0.0 | 12.3 | 1.7 | 58.2 | 0.0 | 9.2 | 66.7 | 66.7 |
| Prop In Lane | 0.24 | | 0.53 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 123 | 0 | 0 | 194 | 0 | 630 | 121 | 1506 | 715 | 247 | 950 | 998 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.00 | 1.44 | 0.00 | 0.35 | 0.39 | 1.29 | 0.00 | 0.80 | 1.01 | 1.02 |
| Avail Cap(c_a), veh/h | 123 | 0 | 0 | 194 | 0 | 598 | 144 | 1593 | 748 | 289 | 951 | 998 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.46 | 0.46 | 0.46 |
| Uniform Delay (d), s/veh | 35.2 | 0.0 | 0.0 | 47.7 | 0.0 | 23.6 | 28.4 | 32.5 | 0.0 | 36.8 | 26.7 | 26.7 |
| Incr Delay (d2), s/veh | 13.8 | 0.0 | 0.0 | 226.7 | 0.0 | 0.3 | 2.0 | 134.5 | 0.0 | 6.2 | 23.4 | 23.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 | 0.0 | 2.3 | 5.6 | 5.3 |
| %ile BackOfQ(95%),veh/ln | 4.6 | 0.0 | 0.0 | 22.0 | 0.0 | 8.6 | 1.5 | 97.5 | 0.0 | 10.2 | 68.6 | 72.0 |
| LnGrp Delay(d),s/veh | 49.1 | 0.0 | 0.0 | 274.5 | 0.0 | 23.9 | 30.4 | 174.4 | 0.0 | 45.3 | 55.6 | 55.2 |
| LnGrp LOS | D | | | F | | C | C | F | | D | F | F |
| Approach Vol, veh/h | | 83 | | | 498 | | | 1986 | | | 2173 | |
| Approach Delay, s/veh | | 49.1 | | | 164.8 | | | 171.0 | | | 54.5 | |
| Approach LOS | | D | | | F | | | F | | | D | |

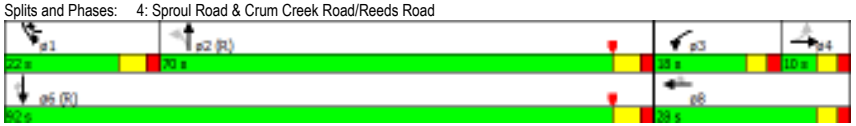
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 16.8 | 63.2 | | 40.0 | 8.3 | 71.7 | | 40.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 15.0 | 54.0 | | 34.0 | 5.0 | 64.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 60.7 | | 36.0 | 4.2 | 69.2 | | 36.0 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 114.8 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 15 | 34 | 24 | 288 | 35 | 265 | 57 | 1981 | 302 | 443 | 1716 | 52 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | -2% | | | -4% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 175 | | 550 | 300 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 1034 | | | 227 | | | 488 | | | 428 | |
| Travel Time (s) | | 28.2 | | | 4.4 | | | 8.3 | | | 7.3 | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 0% | 2% | 4% | 1% | 2% | 0% | 4% | 2% | 2% | 0% | 1% | 2% |
| Parking (#/hr) | | | | | | | 0 | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | 15.0 |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 22.0 | 22.0 | | 10.0 | 22.0 | 22.0 |
| Total Split (s) | 10.0 | 10.0 | | 18.0 | 28.0 | 22.0 | 70.0 | 70.0 | | 22.0 | 92.0 | 92.0 |
| Total Split (%) | 8.3% | 8.3% | | 15.0% | 23.3% | 18.3% | 58.3% | 58.3% | | 18.3% | 76.7% | 76.7% |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 6.0 |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 69 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 110 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 4: Sproul Road & Crum Creek Road/Reeds Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 15 | 34 | 24 | 288 | 35 | 265 | 57 | 1981 | 302 | 443 | 1716 | 52 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1768 | 1818 | 1818 | 1800 | 1836 | 1713 | 1817 | 1853 | 1818 | 1872 | 1854 |
| Adj Flow Rate, veh/h | 15 | 34 | 17 | 291 | 35 | 219 | 58 | 2001 | 239 | 447 | 1733 | 41 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 1 | 2 | 0 | 4 | 2 | 2 | 0 | 1 | 2 |
| Cap, veh/h | 115 | 56 | 28 | 382 | 355 | 529 | 175 | 2154 | 255 | 476 | 2589 | 1134 |
| Arrive On Green | 0.05 | 0.05 | 0.04 | 0.11 | 0.20 | 0.20 | 0.18 | 0.18 | 0.18 | 0.14 | 0.73 | 0.72 |
| Sat Flow, veh/h | 1094 | 1113 | 557 | 3359 | 1800 | 1561 | 246 | 3955 | 468 | 3359 | 3557 | 1576 |
| Grp Volume(v), veh/h | 15 | 0 | 51 | 291 | 35 | 219 | 58 | 1355 | 885 | 447 | 1733 | 41 |
| Grp Sat Flow(s),veh/h/ln | 1094 | 0 | 1670 | 1679 | 1800 | 1561 | 246 | 1345 | 1734 | 1679 | 1778 | 1576 |
| Q Serve(g_s), s | 1.6 | 0.0 | 3.6 | 10.1 | 1.9 | 13.0 | 25.9 | 59.5 | 60.4 | 15.8 | 31.0 | 0.9 |
| Cycle Q Clear(g_c), s | 1.6 | 0.0 | 3.6 | 10.1 | 1.9 | 13.0 | 35.0 | 59.5 | 60.4 | 15.8 | 31.0 | 0.9 |
| Prop In Lane | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 115 | 0 | 83 | 382 | 355 | 529 | 175 | 1465 | 945 | 476 | 2589 | 1134 |
| V/C Ratio(X) | 0.13 | 0.00 | 0.61 | 0.76 | 0.10 | 0.41 | 0.33 | 0.93 | 0.94 | 0.94 | 0.67 | 0.04 |
| Avail Cap(c_a), veh/h | 115 | 0 | 83 | 392 | 360 | 533 | 175 | 1465 | 945 | 476 | 2589 | 1134 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.9 | 0.0 | 56.0 | 51.6 | 39.5 | 30.5 | 40.9 | 46.8 | 47.2 | 51.0 | 8.7 | 4.8 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 12.3 | 8.4 | 0.1 | 0.5 | 5.0 | 11.3 | 17.5 | 26.8 | 1.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.9 | 0.0 | 3.5 | 8.8 | 1.7 | 9.5 | 3.6 | 32.7 | 43.2 | 14.0 | 21.9 | 0.7 |
| LnGrp Delay(d),s/veh | 55.4 | 0.0 | 68.3 | 60.0 | 39.6 | 31.0 | 45.9 | 58.1 | 64.7 | 77.8 | 10.1 | 4.9 |
| LnGrp LOS | E | | E | E | D | C | D | E | E | E | B | A |
| Approach Vol, veh/h | | 66 | | | 545 | | | 2298 | | | 2221 | |
| Approach Delay, s/veh | | 65.4 | | | 47.0 | | | 60.4 | | | 23.6 | |
| Approach LOS | | E | | | D | | | E | | | C | |

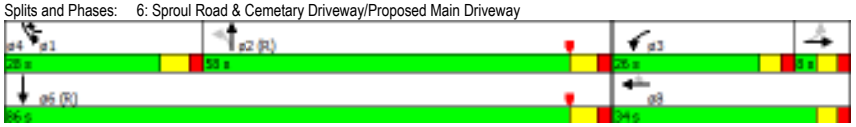
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.0 | 70.4 | 17.6 | 10.0 | | 92.4 | | 27.6 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 16.0 | 64.0 | 13.0 | 5.0 | | 86.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 18.3 | 62.9 | 12.6 | 5.6 | | 33.5 | | 15.5 |
| Green Ext Time (p_c), s | 0.0 | 1.1 | 0.1 | 0.0 | | 42.4 | | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 43.1 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 20 | 0 | 141 | 515 | 0 | 226 | 30 | 1546 | 344 | 260 | 1413 | 1 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 16 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | -3% | | | 2% | | | 2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 525 | 425 | | 0 |
| Storage Lanes | 1 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 219 | | | 191 | | | 546 | | | 504 | |
| Travel Time (s) | | 6.0 | | | 5.2 | | | 9.3 | | | 8.6 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Prot | | pm+ov | Perm | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 2 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 15.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | 21.0 | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 8.0 | 8.0 | | 26.0 | 34.0 | 28.0 | 58.0 | 58.0 | | 28.0 | 86.0 | |
| Total Split (%) | 6.7% | 6.7% | | 21.7% | 28.3% | 23.3% | 48.3% | 48.3% | | 23.3% | 71.7% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | C-Max | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 19 (16%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 6: Sproul Road & Cemetary Driveway/Proposed Main Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 20 | 0 | 141 | 515 | 0 | 226 | 30 | 1546 | 344 | 260 | 1413 | 1 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1714 | 1872 | 1800 | 1863 | 1791 | 1791 | 1782 | 1832 | 1853 | 1747 | 1835 | 1853 |
| Adj Flow Rate, veh/h | 22 | 0 | 0 | 554 | 0 | 178 | 32 | 1662 | 270 | 280 | 1519 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 5 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 |
| Cap, veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 199 | 1808 | 292 | 319 | 2353 | 0 |
| Arrive On Green | 0.03 | 0.00 | 0.00 | 0.18 | 0.00 | 0.24 | 0.44 | 0.44 | 0.44 | 0.19 | 0.68 | 0.00 |
| Sat Flow, veh/h | 1106 | 1872 | 0 | 3442 | 1791 | 1523 | 327 | 4094 | 662 | 1664 | 3578 | 0 |
| Grp Volume(v), veh/h | 22 | 0 | 0 | 554 | 0 | 178 | 32 | 1232 | 700 | 280 | 1519 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1106 | 1872 | 0 | 1721 | 1791 | 1523 | 327 | 1520 | 1715 | 1664 | 1743 | 0 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.0 | 18.8 | 0.0 | 9.1 | 7.5 | 45.7 | 46.2 | 19.6 | 30.1 | 0.0 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 0.0 | 18.8 | 0.0 | 9.1 | 9.6 | 45.7 | 46.2 | 19.6 | 30.1 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.39 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 199 | 1343 | 757 | 319 | 2353 | 0 |
| V/C Ratio(X) | 0.23 | 0.00 | 0.00 | 0.88 | 0.00 | 0.28 | 0.16 | 0.92 | 0.92 | 0.88 | 0.65 | 0.00 |
| Avail Cap(c_a), veh/h | 97 | 62 | 0 | 631 | 448 | 647 | 199 | 1343 | 757 | 319 | 2353 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.30 | 0.30 | 0.30 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 57.2 | 0.0 | 0.0 | 47.7 | 0.0 | 22.5 | 22.1 | 31.5 | 31.6 | 47.1 | 11.2 | 0.0 |
| Incr Delay (d2), s/veh | 1.2 | 0.0 | 0.0 | 13.4 | 0.0 | 0.2 | 0.5 | 4.0 | 7.1 | 23.1 | 1.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 0.0 | 0.0 | 15.3 | 0.0 | 7.0 | 1.3 | 23.7 | 27.6 | 16.5 | 21.1 | 0.0 |
| LnGrp Delay(d),s/veh | 58.4 | 0.0 | 0.0 | 61.0 | 0.0 | 22.7 | 22.6 | 35.5 | 38.7 | 70.3 | 12.6 | 0.0 |
| LnGrp LOS | E | | | E | | C | C | D | D | E | B | |
| Approach Vol, veh/h | | 22 | | | 732 | | | 1964 | | | 1799 | |
| Approach Delay, s/veh | | 58.4 | | | 51.7 | | | 36.4 | | | 21.6 | |
| Approach LOS | | E | | | D | | | D | | | C | |

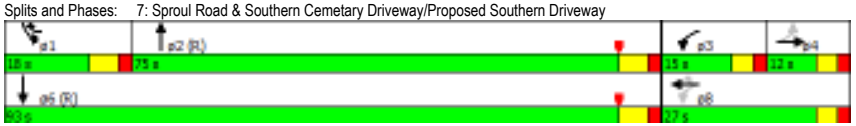
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 28.0 | 58.0 | 26.0 | 8.0 | | 86.0 | | 34.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 22.0 | 52.0 | 21.0 | 3.0 | | 80.0 | | 29.0 |
| Max Q Clear Time (g_c+I1), s | 22.1 | 48.7 | 21.3 | 4.9 | | 32.6 | | 11.1 |
| Green Ext Time (p_c), s | 0.0 | 3.1 | 0.0 | 0.0 | | 31.8 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 13 | 0 | 72 | 170 | 0 | 115 | 0 | 2091 | 122 | 128 | 1857 | 0 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 12 | 13 | 14 |
| Grade (%) | | 0% | | | 0% | | | 2% | | | -2% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 250 | 250 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 263 | | | 228 | | | 870 | | | 546 | |
| Travel Time (s) | | 7.2 | | | 6.2 | | | 14.8 | | | 9.3 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 2% | 2% | 2% | 0% | 1% | 2% | 2% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | | pm+ov | | NA | | Prot | NA | |
| Protected Phases | | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | | | | | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 8.0 | 8.0 | | 8.0 | 8.0 | 10.0 | | 21.0 | | 10.0 | 21.0 | |
| Total Split (s) | 12.0 | 12.0 | | 15.0 | 27.0 | 18.0 | | 75.0 | | 18.0 | 93.0 | |
| Total Split (%) | 10.0% | 10.0% | | 12.5% | 22.5% | 15.0% | | 62.5% | | 15.0% | 77.5% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | 0.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 6.0 | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | | Yes | | Yes | | |
| Recall Mode | None | None | | None | None | None | | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 23 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 7: Sproul Road & Southern Cemetary Driveway/Proposed Southern Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 13 | 0 | 72 | 170 | 0 | 115 | 0 | 2091 | 122 | 128 | 1857 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1765 | 1765 | 1765 | 0 | 1834 | 1853 | 1782 | 1872 | 0 |
| Adj Flow Rate, veh/h | 14 | 0 | 62 | 183 | 0 | 95 | 0 | 2248 | 96 | 138 | 1997 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 0 |
| Cap, veh/h | 141 | 0 | 99 | 251 | 335 | 417 | 0 | 2591 | 110 | 178 | 2615 | 0 |
| Arrive On Green | 0.06 | 0.00 | 0.06 | 0.09 | 0.00 | 0.18 | 0.00 | 0.59 | 0.59 | 0.21 | 1.00 | 0.00 |
| Sat Flow, veh/h | 1252 | 0 | 1522 | 1681 | 1765 | 1500 | 0 | 4841 | 187 | 1697 | 3650 | 0 |
| Grp Volume(v), veh/h | 14 | 0 | 62 | 183 | 0 | 95 | 0 | 1420 | 924 | 138 | 1997 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1252 | 0 | 1522 | 1681 | 1765 | 1500 | 0 | 1394 | 1801 | 1697 | 1778 | 0 |
| Q Serve(g_s), s | 1.3 | 0.0 | 4.8 | 11.0 | 0.0 | 5.9 | 0.0 | 51.3 | 52.0 | 9.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.3 | 0.0 | 4.8 | 11.0 | 0.0 | 5.9 | 0.0 | 51.3 | 52.0 | 9.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.00 | | 0.10 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 141 | 0 | 99 | 251 | 335 | 417 | 0 | 1641 | 1060 | 178 | 2615 | 0 |
| V/C Ratio(X) | 0.10 | 0.00 | 0.63 | 0.73 | 0.00 | 0.23 | 0.00 | 0.87 | 0.87 | 0.77 | 0.76 | 0.00 |
| Avail Cap(c_a), veh/h | 143 | 0 | 101 | 251 | 338 | 420 | 0 | 1641 | 1060 | 184 | 2615 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.63 | 0.63 | 0.00 |
| Uniform Delay (d), s/veh | 53.1 | 0.0 | 55.2 | 46.4 | 0.0 | 33.4 | 0.0 | 20.7 | 20.8 | 46.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 11.3 | 10.3 | 0.0 | 0.3 | 0.0 | 6.4 | 9.8 | 11.9 | 1.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.8 | 0.0 | 4.2 | 10.3 | 0.0 | 4.4 | 0.0 | 28.5 | 37.3 | 7.8 | 0.9 | 0.0 |
| LnGrp Delay(d),s/veh | 53.4 | 0.0 | 66.5 | 56.7 | 0.0 | 33.7 | 0.0 | 27.1 | 30.7 | 58.0 | 1.4 | 0.0 |
| LnGrp LOS | D | | E | E | | C | | C | C | E | A | |
| Approach Vol, veh/h | | 76 | | | 278 | | | 2344 | | | 2135 | |
| Approach Delay, s/veh | | 64.1 | | | 48.8 | | | 28.5 | | | 5.0 | |
| Approach LOS | | E | | | D | | | C | | | A | |

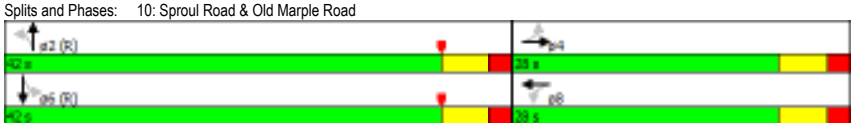
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 17.6 | 75.6 | 15.0 | 11.8 | | 93.2 | | 26.8 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 5.0 | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 69.0 | 10.0 | 7.0 | | 87.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 54.5 | 13.5 | 6.8 | | 2.5 | | 7.9 |
| Green Ext Time (p_c), s | 0.0 | 13.7 | 0.0 | 0.0 | | 63.6 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 245 | 106 | 56 | 184 | 143 | 11 | 69 | 1656 | 73 | 3 | 1269 | 179 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 325 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 28.0 | 28.0 | | 28.0 | 28.0 | | 42.0 | 42.0 | | 42.0 | 42.0 | |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 13 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 245 | 106 | 56 | 184 | 143 | 11 | 69 | 1656 | 73 | 3 | 1269 | 179 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1881 | 1818 | 1782 | 1746 | 1782 | 1773 | 1751 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 261 | 113 | 47 | 196 | 152 | 5 | 73 | 1762 | 73 | 3 | 1350 | 176 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 348 | 115 | 48 | 307 | 202 | 6 | 62 | 1187 | 24 | 52 | 1437 | 198 |
| Arrive On Green | 0.31 | 0.33 | 0.31 | 0.31 | 0.33 | 0.31 | 0.51 | 0.53 | 0.51 | 0.51 | 0.53 | 0.51 |
| Sat Flow, veh/h | 807 | 351 | 145 | 692 | 614 | 19 | 24 | 2152 | 93 | 0 | 2715 | 376 |
| Grp Volume(v), veh/h | 421 | 0 | 0 | 353 | 0 | 0 | 675 | 0 | 1233 | 790 | 0 | 739 |
| Grp Sat Flow(s),veh/h/ln | 1303 | 0 | 0 | 1325 | 0 | 0 | 693 | 0 | 1577 | 1512 | 0 | 1579 |
| Q Serve(g_s), s | 4.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.9 | 0.0 | 37.0 | 0.0 | 0.0 | 29.1 |
| Cycle Q Clear(g_c), s | 22.0 | 0.0 | 0.0 | 17.3 | 0.0 | 0.0 | 36.0 | 0.0 | 37.0 | 36.0 | 0.0 | 29.1 |
| Prop In Lane | 0.62 | | 0.11 | 0.56 | | 0.01 | 0.11 | | 0.06 | 0.00 | | 0.24 |
| Lane Grp Cap(c), veh/h | 493 | 0 | 0 | 496 | 0 | 0 | 425 | 0 | 838 | 829 | 0 | 835 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.00 | 0.71 | 0.00 | 0.00 | 1.59 | 0.00 | 1.47 | 0.95 | 0.00 | 0.89 |
| Avail Cap(c_a), veh/h | 493 | 0 | 0 | 496 | 0 | 0 | 413 | 0 | 834 | 829 | 0 | 835 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.0 | 0.0 | 0.0 | 21.7 | 0.0 | 0.0 | 15.7 | 0.0 | 16.5 | 15.4 | 0.0 | 14.8 |
| Incr Delay (d2), s/veh | 13.7 | 0.0 | 0.0 | 4.7 | 0.0 | 0.0 | 275.4 | 0.0 | 218.5 | 21.6 | 0.0 | 13.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 2.9 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.3 | 0.0 | 0.0 | 11.5 | 0.0 | 0.0 | 74.4 | 0.0 | 121.0 | 25.9 | 0.0 | 22.2 |
| LnGrp Delay(d),s/veh | 37.7 | 0.0 | 0.0 | 26.4 | 0.0 | 0.0 | 296.4 | 0.0 | 237.9 | 37.0 | 0.0 | 28.1 |
| LnGrp LOS | D | | | C | | | F | | F | D | | C |
| Approach Vol, veh/h | | 421 | | | 353 | | | 1908 | | | 1529 | |
| Approach Delay, s/veh | | 37.7 | | | 26.4 | | | 258.6 | | | 32.7 | |
| Approach LOS | | D | | | C | | | F | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.0 | | 28.0 | | 42.0 | | 28.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 22.0 | | 36.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | | 39.0 | | 24.0 | | 38.0 | | 19.3 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 1.0 |

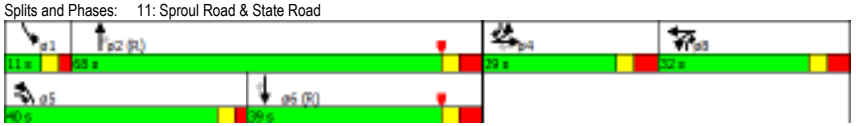
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 135.0 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 681 | 60 | 479 | 283 | 253 | 116 | 403 | 1036 | 331 | 94 | 838 | 616 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 46% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 29.0 | 29.0 | 40.0 | 32.0 | 32.0 | | 40.0 | 68.0 | 32.0 | 11.0 | 39.0 | 29.0 |
| Total Split (%) | 20.7% | 20.7% | 28.6% | 22.9% | 22.9% | | 28.6% | 48.6% | 22.9% | 7.9% | 27.9% | 20.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 681 | 60 | 479 | 283 | 253 | 116 | 403 | 1036 | 331 | 94 | 838 | 616 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1833 | 1826 | 1872 | 1860 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 762 | 0 | 0 | 282 | 288 | 0 | 424 | 1091 | 0 | 99 | 882 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 577 | 0 | 654 | 324 | 339 | 0 | 436 | 1505 | 952 | 86 | 798 | 608 |
| Arrive On Green | 0.16 | 0.00 | 0.00 | 0.18 | 0.18 | 0.00 | 0.26 | 0.45 | 0.00 | 0.05 | 0.24 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 762 | 0 | 0 | 282 | 288 | 0 | 424 | 1091 | 0 | 99 | 882 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 23.0 | 0.0 | 0.0 | 21.6 | 21.0 | 0.0 | 34.6 | 36.7 | 0.0 | 7.0 | 33.7 | 0.0 |
| Cycle Q Clear(g_c), s | 23.0 | 0.0 | 0.0 | 21.6 | 21.0 | 0.0 | 34.6 | 36.7 | 0.0 | 7.0 | 33.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 577 | 0 | 654 | 324 | 339 | 0 | 436 | 1505 | 952 | 86 | 798 | 608 |
| V/C Ratio(X) | 1.32 | 0.00 | 0.00 | 0.87 | 0.85 | 0.00 | 0.97 | 0.73 | 0.00 | 1.15 | 1.11 | 0.00 |
| Avail Cap(c_a), veh/h | 577 | 0 | 654 | 331 | 345 | 0 | 436 | 1517 | 952 | 86 | 815 | 614 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 58.5 | 0.0 | 0.0 | 56.1 | 56.0 | 0.0 | 51.8 | 31.9 | 0.0 | 66.5 | 53.5 | 0.0 |
| Incr Delay (d2), s/veh | 156.1 | 0.0 | 0.0 | 20.9 | 17.7 | 0.0 | 35.6 | 3.1 | 0.0 | 145.0 | 64.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 32.3 | 0.0 | 0.0 | 4.7 | 6.7 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 46.1 | 0.0 | 0.0 | 19.4 | 19.8 | 0.0 | 29.1 | 24.8 | 0.0 | 12.2 | 40.6 | 0.0 |
| LnGrp Delay(d),s/veh | 246.8 | 0.0 | 0.0 | 81.8 | 80.4 | 0.0 | 92.7 | 35.0 | 0.0 | 211.5 | 118.1 | 0.0 |
| LnGrp LOS | F | | | F | F | | F | C | | F | F | |
| Approach Vol, veh/h | | 762 | | | 570 | | | 1515 | | | 981 | |
| Approach Delay, s/veh | | 246.8 | | | 81.1 | | | 51.1 | | | 127.5 | |
| Approach LOS | | F | | | F | | | D | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.0 | 68.7 | | 29.0 | 40.0 | 39.7 | | 31.3 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 5.0 | 7.0 | | 7.0 |
| Max Green Setting (Gmax), s | 6.0 | 61.0 | | 22.0 | 35.0 | 32.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 39.2 | | 25.5 | 37.1 | 36.2 | | 24.1 |
| Green Ext Time (p_c), s | 0.0 | 9.8 | | 0.0 | 0.0 | 0.0 | | 0.2 |

**Intersection Summary**

HCM 2010 Ctrl Delay 114.1
HCM 2010 LOS F

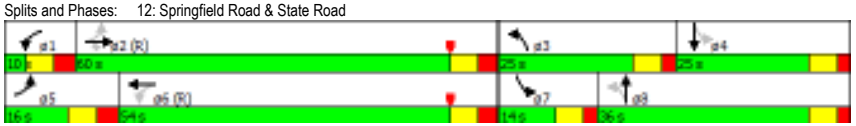
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 239 | 1497 | 472 | 42 | 1375 | 199 | 402 | 493 | 45 | 215 | 436 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 16.0 | 60.0 | 60.0 | 10.0 | 54.0 | | 25.0 | 36.0 | | 14.0 | 25.0 | |
| Total Split (%) | 13.3% | 50.0% | 50.0% | 8.3% | 45.0% | | 20.8% | 30.0% | | 11.7% | 20.8% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 239 | 1497 | 472 | 42 | 1375 | 199 | 402 | 493 | 45 | 215 | 436 | 39 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1731 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 252 | 1576 | 0 | 44 | 1447 | 0 | 423 | 519 | 0 | 226 | 459 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 206 | 1569 | 702 | 115 | 1315 | 0 | 342 | 463 | 0 | 189 | 301 | 0 |
| Arrive On Green | 0.08 | 0.45 | 0.00 | 0.03 | 0.40 | 0.00 | 0.17 | 0.26 | 0.00 | 0.08 | 0.17 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3375 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 252 | 1576 | 0 | 44 | 1447 | 0 | 423 | 519 | 0 | 226 | 459 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 10.0 | 54.0 | 0.0 | 1.8 | 48.0 | 0.0 | 20.0 | 31.0 | 0.0 | 9.0 | 20.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 54.0 | 0.0 | 1.8 | 48.0 | 0.0 | 20.0 | 31.0 | 0.0 | 9.0 | 20.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 206 | 1569 | 702 | 115 | 1315 | 0 | 342 | 463 | 0 | 189 | 301 | 0 |
| V/C Ratio(X) | 1.23 | 1.00 | 0.00 | 0.38 | 1.10 | 0.00 | 1.24 | 1.12 | 0.00 | 1.19 | 1.52 | 0.00 |
| Avail Cap(c_a), veh/h | 206 | 1569 | 702 | 115 | 1315 | 0 | 342 | 463 | 0 | 189 | 301 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 36.2 | 33.0 | 0.0 | 29.4 | 36.0 | 0.0 | 34.6 | 44.5 | 0.0 | 43.3 | 50.0 | 0.0 |
| Incr Delay (d2), s/veh | 136.6 | 23.7 | 0.0 | 2.1 | 56.9 | 0.0 | 130.0 | 79.5 | 0.0 | 127.6 | 251.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 41.6 | 22.6 | 0.0 | 0.0 | 24.5 | 0.0 | 49.3 | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 29.3 | 61.0 | 0.0 | 1.6 | 62.8 | 0.0 | 48.5 | 46.9 | 0.0 | 12.1 | 55.8 | 0.0 |
| LnGrp Delay(d),s/veh | 214.4 | 79.3 | 0.0 | 31.5 | 117.4 | 0.0 | 213.9 | 130.9 | 0.0 | 170.9 | 301.4 | 0.0 |
| LnGrp LOS | F | F | | C | F | | F | F | | F | F | |
| Approach Vol, veh/h | | 1828 | | | 1491 | | | 942 | | | 685 | |
| Approach Delay, s/veh | | 97.9 | | | 114.9 | | | 168.1 | | | 258.3 | |
| Approach LOS | | F | | | F | | | F | | | F | |

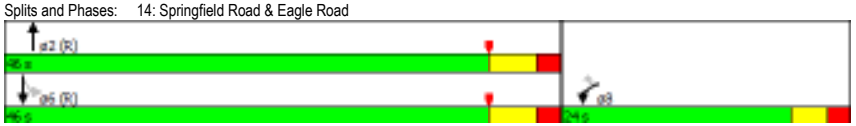
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 60.0 | 25.0 | 25.0 | 16.0 | 54.0 | 14.0 | 36.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 53.0 | 19.0 | 19.0 | 9.0 | 47.0 | 8.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 56.5 | 22.5 | 22.5 | 12.5 | 50.5 | 11.5 | 33.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 138.6 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 373 | 130 | 687 | 201 | 104 | 532 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -5% | | 1% | | | -1% |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 485 | | 640 | | | 416 |
| Travel Time (s) | 9.4 | | 17.5 | | | 11.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | Perm | NA | | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | | 6 | |
| Detector Phase | 8 | 8 | 2 | | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 27.0 | | 27.0 | 27.0 |
| Minimum Split (s) | 12.0 | 12.0 | 33.0 | | 33.0 | 33.0 |
| Total Split (s) | 24.0 | 24.0 | 46.0 | | 46.0 | 46.0 |
| Total Split (%) | 34.3% | 34.3% | 65.7% | | 65.7% | 65.7% |
| Yellow Time (s) | 3.0 | 3.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | | | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | | C-Max | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 70 | |
| Offset: 10 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 120 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 373 | 130 | 687 | 201 | 104 | 532 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1693 | 1773 | 1791 | 1809 | 1794 |
| Adj Flow Rate, veh/h | 405 | 123 | 747 | 169 | 113 | 578 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 0 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 478 | 403 | 828 | 187 | 82 | 332 |
| Arrive On Green | 0.27 | 0.27 | 0.60 | 0.58 | 0.58 | 0.60 |
| Sat Flow, veh/h | 1740 | 1439 | 1401 | 317 | 46 | 584 |
| Grp Volume(v), veh/h | 405 | 123 | 0 | 916 | 691 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1439 | 0 | 1717 | 630 | 0 |
| Q Serve(g_s), s | 15.4 | 4.7 | 0.0 | 32.3 | 8.5 | 0.0 |
| Cycle Q Clear(g_c), s | 15.4 | 4.7 | 0.0 | 32.3 | 40.8 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | | 0.18 | 0.16 | |
| Lane Grp Cap(c), veh/h | 478 | 403 | 0 | 1015 | 389 | 0 |
| V/C Ratio(X) | 0.85 | 0.31 | 0.00 | 0.90 | 1.78 | 0.00 |
| Avail Cap(c_a), veh/h | 497 | 411 | 0 | 1026 | 427 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.09 | 0.00 |
| Uniform Delay (d), s/veh | 24.1 | 19.8 | 0.0 | 12.6 | 14.8 | 0.0 |
| Incr Delay (d2), s/veh | 12.6 | 0.4 | 0.0 | 12.7 | 350.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.2 | 3.4 | 0.0 | 26.0 | 78.9 | 0.0 |
| LnGrp Delay(d),s/veh | 36.9 | 20.3 | 0.0 | 25.3 | 365.0 | 0.0 |
| LnGrp LOS | D | C | | C | F | |
| Approach Vol, veh/h | 528 | | 916 | | 691 | |
| Approach Delay, s/veh | 33.0 | | 25.3 | | 365.0 | |
| Approach LOS | C | | C | | F | |

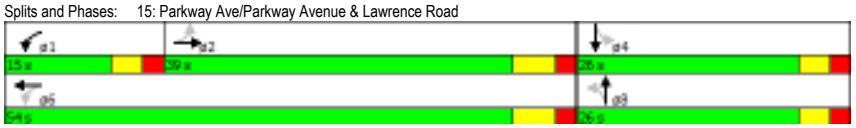
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.8 | | | | 46.8 | | 23.2 |
| Change Period (Y+Rc), s | | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 40.0 | | | | 40.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | | 34.3 | | | | 42.8 | | 17.9 |
| Green Ext Time (p_c), s | | 3.9 | | | | 0.0 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 137.1 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 760 | 137 | 238 | 842 | 10 | 215 | 26 | 350 | 6 | 15 | 45 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 741 | | | 911 | | | 623 | | | 466 | |
| Travel Time (s) | | 11.2 | | | 13.8 | | | 17.0 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 30.0 | 30.0 | | 10.0 | 30.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 36.0 | 36.0 | | 15.0 | 36.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 39.0 | 39.0 | | 15.0 | 54.0 | | 26.0 | 26.0 | | 26.0 | 26.0 | |
| Total Split (%) | 48.8% | 48.8% | | 18.8% | 67.5% | | 32.5% | 32.5% | | 32.5% | 32.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | Min | Min | | None | Min | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 76.1 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 760 | 137 | 238 | 842 | 10 | 215 | 26 | 350 | 6 | 15 | 45 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1774 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1799 | 1827 |
| Adj Flow Rate, veh/h | 32 | 826 | 145 | 259 | 915 | 10 | 234 | 28 | 292 | 7 | 16 | 47 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 68 | 1481 | 282 | 77 | 971 | 12 | 291 | 37 | 383 | 60 | 108 | 244 |
| Arrive On Green | 0.60 | 0.61 | 0.60 | 0.60 | 0.61 | 0.60 | 0.28 | 0.28 | 0.26 | 0.26 | 0.28 | 0.26 |
| Sat Flow, veh/h | 35 | 2417 | 463 | 2 | 1586 | 20 | 1257 | 134 | 1393 | 40 | 394 | 887 |
| Grp Volume(v), veh/h | 523 | 0 | 480 | 389 | 0 | 795 | 234 | 0 | 320 | 70 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1382 | 0 | 1532 | 10 | 0 | 1598 | 1257 | 0 | 1527 | 1321 | 0 | 0 |
| Q Serve(g_s), s | 4.4 | 0.0 | 14.2 | 63.4 | 0.0 | 30.7 | 6.9 | 0.0 | 15.4 | 0.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 35.1 | 0.0 | 14.2 | 63.4 | 0.0 | 30.7 | 22.0 | 0.0 | 15.4 | 15.6 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.30 | 0.67 | | 0.01 | 1.00 | | 0.91 | 0.10 | | 0.67 |
| Lane Grp Cap(c), veh/h | 870 | 0 | 939 | 0 | 0 | 979 | 291 | 0 | 420 | 396 | 0 | 0 |
| V/C Ratio(X) | 0.60 | 0.00 | 0.51 | 0.00 | 0.00 | 0.81 | 0.80 | 0.00 | 0.76 | 0.18 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 877 | 0 | 939 | 0 | 0 | 979 | 291 | 0 | 420 | 396 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 9.5 | 0.0 | 8.9 | 0.0 | 0.0 | 12.0 | 32.7 | 0.0 | 27.0 | 22.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.1 | 0.0 | 0.5 | 0.0 | 0.0 | 5.3 | 15.1 | 0.0 | 8.0 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.9 | 0.0 | 10.2 | 0.0 | 0.0 | 21.1 | 10.5 | 0.0 | 11.9 | 2.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 10.7 | 0.0 | 9.4 | 0.0 | 0.0 | 17.3 | 47.7 | 0.0 | 35.0 | 22.6 | 0.0 | 0.0 |
| LnGrp LOS | B | | A | | | B | D | | D | C | | |
| Approach Vol, veh/h | | 1003 | | | 1184 | | | 554 | | | 70 | |
| Approach Delay, s/veh | | 10.1 | | | 11.6 | | | 40.4 | | | 22.6 | |
| Approach LOS | | B | | | B | | | D | | | C | |

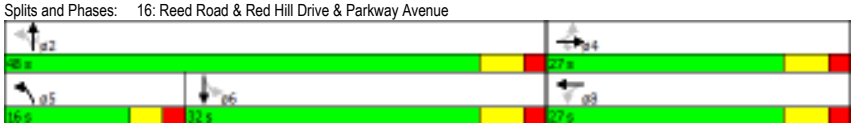
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 54.0 | | 26.0 | | 54.0 | | 26.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 33.0 | | 21.0 | | 48.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 37.1 | | 17.6 | | 65.4 | | 24.5 |
| Green Ext Time (p_c), s | | 0.0 | | 1.0 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.0 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 137 | 107 | 305 | 23 | 116 | 3 | 317 | 365 | 29 | 4 | 317 | 91 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 16.0 | 48.0 | 48.0 | 32.0 | 32.0 | |
| Total Split (%) | 36.0% | 36.0% | 36.0% | 36.0% | 36.0% | | 21.3% | 64.0% | 64.0% | 42.7% | 42.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | None | None | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 66 | |
| Natural Cycle: 60 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 137 | 107 | 305 | 23 | 116 | 3 | 317 | 365 | 29 | 4 | 317 | 91 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1737 | 1747 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1860 | 1836 |
| Adj Flow Rate, veh/h | 144 | 113 | 279 | 24 | 122 | 2 | 334 | 384 | 29 | 4 | 334 | 81 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 196 | 127 | 479 | 61 | 242 | 3 | 566 | 927 | 796 | 55 | 428 | 103 |
| Arrive On Green | 0.31 | 0.32 | 0.32 | 0.31 | 0.32 | 0.31 | 0.18 | 0.53 | 0.53 | 0.28 | 0.30 | 0.28 |
| Sat Flow, veh/h | 352 | 395 | 1485 | 0 | 750 | 10 | 1647 | 1747 | 1499 | 4 | 1443 | 347 |
| Grp Volume(v), veh/h | 257 | 0 | 279 | 148 | 0 | 0 | 334 | 384 | 29 | 419 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 747 | 0 | 1485 | 761 | 0 | 0 | 1647 | 1747 | 1499 | 1795 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 10.7 | 0.0 | 0.0 | 0.0 | 8.5 | 9.0 | 0.6 | 0.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 21.0 | 0.0 | 10.7 | 21.0 | 0.0 | 0.0 | 8.5 | 9.0 | 0.6 | 14.8 | 0.0 | 0.0 |
| Prop In Lane | 0.56 | | 1.00 | 0.16 | | 0.01 | 1.00 | | 1.00 | 0.01 | | 0.19 |
| Lane Grp Cap(c), veh/h | 312 | 0 | 479 | 295 | 0 | 0 | 566 | 927 | 796 | 559 | 0 | 0 |
| V/C Ratio(X) | 0.82 | 0.00 | 0.58 | 0.50 | 0.00 | 0.00 | 0.59 | 0.41 | 0.04 | 0.75 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 312 | 0 | 479 | 295 | 0 | 0 | 566 | 1101 | 945 | 736 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 23.3 | 0.0 | 19.3 | 18.3 | 0.0 | 0.0 | 10.4 | 9.6 | 7.7 | 22.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.1 | 0.0 | 1.8 | 1.3 | 0.0 | 0.0 | 1.6 | 0.3 | 0.0 | 3.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.3 | 0.0 | 8.1 | 3.9 | 0.0 | 0.0 | 7.4 | 7.8 | 0.5 | 12.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 39.4 | 0.0 | 21.1 | 19.6 | 0.0 | 0.0 | 12.1 | 9.9 | 7.7 | 25.2 | 0.0 | 0.0 |
| LnGrp LOS | D | | C | B | | | B | A | A | C | | |
| Approach Vol, veh/h | | 536 | | | 148 | | | 747 | | | 419 | |
| Approach Delay, s/veh | | 29.9 | | | 19.6 | | | 10.8 | | | 25.2 | |
| Approach LOS | | C | | | B | | | B | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 41.2 | | 27.0 | 16.0 | 25.2 | | 27.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 21.0 | 11.0 | 26.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 11.5 | | 23.0 | 11.0 | 16.8 | | 23.0 |
| Green Ext Time (p_c), s | | 3.4 | | 0.0 | 0.0 | 2.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.3 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 36 | 342 | 176 | 158 | 337 | 65 | 174 | 0 | 124 | 84 | 0 | 41 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 0% | | | 4% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 200 | 150 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 1 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 326 | | | 284 | | | 380 | | | 215 | |
| Travel Time (s) | | 6.4 | | | 5.5 | | | 10.4 | | | 5.9 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 1% | 2% | 0% |
| Parking (#/hr) | | | 0 | | | | | | | | | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Prot | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 15.0 | 15.0 | 15.0 | 3.0 | 15.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 8.0 | 21.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 17.0 | 37.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 28.3% | 61.7% | | 38.3% | 38.3% | | 38.3% | 38.3% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 9 (15%), Referenced to phase 2:EBTL and 6:WBT, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 18: Proposed Driveway/Lawrence Business Park & Reed Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 36 | 342 | 176 | 158 | 337 | 65 | 174 | 0 | 124 | 84 | 0 | 41 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1779 | 1765 | 1729 | 1749 | 1764 | 1765 | 1765 | 1800 | 1800 | 1788 | 1800 |
| Adj Flow Rate, veh/h | 38 | 364 | 187 | 168 | 359 | 69 | 185 | 0 | 132 | 89 | 0 | 44 |
| Adj No. of Lanes | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 138 | 1143 | 519 | 246 | 856 | 165 | 463 | 0 | 400 | 264 | 20 | 91 |
| Arrive On Green | 0.37 | 0.38 | 0.38 | 0.15 | 0.60 | 0.58 | 0.27 | 0.00 | 0.25 | 0.25 | 0.00 | 0.25 |
| Sat Flow, veh/h | 175 | 2975 | 1350 | 1647 | 1427 | 274 | 1285 | 0 | 1500 | 615 | 75 | 341 |
| Grp Volume(v), veh/h | 209 | 193 | 187 | 168 | 0 | 428 | 185 | 0 | 132 | 133 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1613 | 1538 | 1350 | 1647 | 0 | 1701 | 1285 | 0 | 1500 | 1031 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 5.3 | 5.9 | 5.8 | 0.0 | 8.1 | 0.0 | 0.0 | 4.3 | 4.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 5.0 | 5.3 | 5.9 | 5.8 | 0.0 | 8.1 | 7.4 | 0.0 | 4.3 | 8.5 | 0.0 | 0.0 |
| Prop In Lane | 0.18 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 1.00 | 0.67 | | 0.33 |
| Lane Grp Cap(c), veh/h | 664 | 591 | 519 | 246 | 0 | 1021 | 463 | 0 | 400 | 358 | 0 | 0 |
| V/C Ratio(X) | 0.32 | 0.33 | 0.36 | 0.68 | 0.00 | 0.42 | 0.40 | 0.00 | 0.33 | 0.37 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 664 | 591 | 519 | 357 | 0 | 1021 | 528 | 0 | 475 | 423 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 13.0 | 13.0 | 13.2 | 24.2 | 0.0 | 6.5 | 18.8 | 0.0 | 18.1 | 20.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.2 | 1.5 | 1.9 | 3.3 | 0.0 | 1.3 | 0.6 | 0.0 | 0.5 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.8 | 4.5 | 4.4 | 5.1 | 0.0 | 7.3 | 4.8 | 0.0 | 3.3 | 3.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 14.2 | 14.5 | 15.1 | 27.5 | 0.0 | 7.7 | 19.4 | 0.0 | 18.6 | 21.0 | 0.0 | 0.0 |
| LnGrp LOS | B | B | B | C | | A | B | | B | C | | |
| Approach Vol, veh/h | | 589 | | | 596 | | | 317 | | | 133 | |
| Approach Delay, s/veh | | 14.6 | | | 13.3 | | | 19.1 | | | 21.0 | |
| Approach LOS | | B | | | B | | | B | | | C | |

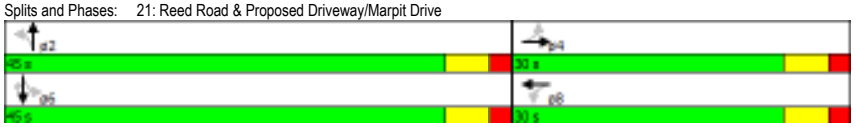
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 27.1 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 15.0 | | 18.0 | | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 8.3 | 8.4 | | 10.5 | | 10.1 | | 9.9 |
| Green Ext Time (p_c), s | 0.2 | 2.3 | | 1.1 | | 3.8 | | 1.2 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 15.5 |
| HCM 2010 LOS | | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 42 | 24 | 99 | 206 | 30 | 75 | 109 | 394 | 143 | 85 | 470 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 100 | | 0 | 250 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 30 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 492 | | | 437 | | | 386 | | | 311 | |
| Travel Time (s) | | 11.2 | | | 8.5 | | | 7.5 | | | 6.1 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 2% | 4% | 2% | 1% | 3% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | 15.0 |
| Minimum Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 45.0 | 45.0 | | 45.0 | 45.0 | 45.0 |
| Total Split (%) | 40.0% | 40.0% | | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | | None | None | | Min | Min | | Min | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 75 | |
| Actuated Cycle Length: 51.5 | |
| Natural Cycle: 55 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 21: Reed Road & Proposed Driveway/Marpit Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 42 | 24 | 99 | 206 | 30 | 75 | 109 | 394 | 143 | 85 | 470 | 55 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1748 | 1740 | 1800 | 1765 | 1773 | 1800 | 1782 | 1782 | 1765 |
| Adj Flow Rate, veh/h | 45 | 26 | 106 | 222 | 32 | 32 | 117 | 424 | 131 | 91 | 505 | 59 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| Cap, veh/h | 498 | 97 | 395 | 440 | 255 | 255 | 372 | 649 | 200 | 347 | 889 | 748 |
| Arrive On Green | 0.32 | 0.32 | 0.30 | 0.32 | 0.32 | 0.32 | 0.50 | 0.50 | 0.48 | 0.50 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1262 | 304 | 1241 | 1175 | 800 | 800 | 799 | 1300 | 402 | 813 | 1782 | 1500 |
| Grp Volume(v), veh/h | 45 | 0 | 132 | 222 | 0 | 64 | 117 | 0 | 555 | 91 | 505 | 59 |
| Grp Sat Flow(s),veh/h/ln | 1262 | 0 | 1546 | 1175 | 0 | 1599 | 799 | 0 | 1702 | 813 | 1782 | 1500 |
| Q Serve(g_s), s | 1.4 | 0.0 | 3.5 | 9.4 | 0.0 | 1.6 | 6.6 | 0.0 | 13.3 | 5.1 | 10.8 | 1.1 |
| Cycle Q Clear(g_c), s | 3.0 | 0.0 | 3.5 | 12.4 | 0.0 | 1.6 | 17.4 | 0.0 | 13.3 | 17.9 | 10.8 | 1.1 |
| Prop In Lane | 1.00 | | 0.80 | 1.00 | | 0.50 | 1.00 | | 0.24 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 498 | 0 | 492 | 440 | 0 | 509 | 372 | 0 | 849 | 347 | 889 | 748 |
| V/C Ratio(X) | 0.09 | 0.00 | 0.27 | 0.50 | 0.00 | 0.13 | 0.31 | 0.00 | 0.65 | 0.26 | 0.57 | 0.08 |
| Avail Cap(c_a), veh/h | 673 | 0 | 707 | 604 | 0 | 731 | 557 | 0 | 1245 | 536 | 1303 | 1097 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.3 | 0.0 | 14.2 | 18.3 | 0.0 | 13.2 | 15.7 | 0.0 | 10.3 | 16.7 | 9.6 | 7.2 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.3 | 0.9 | 0.0 | 0.1 | 0.5 | 0.0 | 0.9 | 0.4 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.9 | 0.0 | 2.8 | 5.6 | 0.0 | 1.2 | 2.7 | 0.0 | 10.5 | 2.1 | 9.1 | 0.8 |
| LnGrp Delay(d),s/veh | 14.4 | 0.0 | 14.5 | 19.2 | 0.0 | 13.3 | 16.2 | 0.0 | 11.2 | 17.1 | 10.2 | 7.2 |
| LnGrp LOS | B | | B | B | | B | B | | B | B | B | A |
| Approach Vol, veh/h | | 177 | | | 286 | | | 672 | | | 655 | |
| Approach Delay, s/veh | | 14.5 | | | 17.9 | | | 12.0 | | | 10.9 | |
| Approach LOS | | B | | | B | | | B | | | B | |

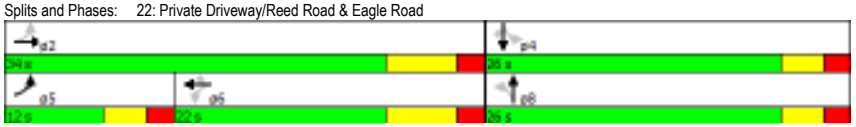
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.3 | | 22.4 | | 32.3 | | 22.4 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 39.0 | | 24.0 | | 39.0 | | 24.0 |
| Max Q Clear Time (g_c+I1), s | | 19.9 | | 5.5 | | 20.4 | | 14.9 |
| Green Ext Time (p_c), s | | 5.9 | | 2.0 | | 5.9 | | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.8 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 199 | 235 | 0 | 0 | 329 | 451 | 1 | 0 | 1 | 553 | 0 | 220 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 6 | 6 | 6 | 8 | 8 | | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 13.0 | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 20.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 |
| Total Split (s) | 12.0 | 34.0 | | 22.0 | 22.0 | 22.0 | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 |
| Total Split (%) | 20.0% | 56.7% | | 36.7% | 36.7% | 36.7% | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 6.0 | | 4.0 | | | 4.0 | 4.0 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | | | | | | |
| Recall Mode | None | Min | | Min | Min | Min | None | None | | None | None | None |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 59.6 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 199 | 235 | 0 | 0 | 329 | 451 | 1 | 0 | 1 | 553 | 0 | 220 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1773 | 1755 | 1808 |
| Adj Flow Rate, veh/h | 214 | 253 | 0 | 0 | 354 | 313 | 1 | 0 | 1 | 595 | 0 | 226 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cap, veh/h | 410 | 852 | 0 | 0 | 457 | 389 | 90 | 31 | 31 | 448 | 0 | 566 |
| Arrive On Green | 0.13 | 0.46 | 0.00 | 0.00 | 0.26 | 0.26 | 0.35 | 0.00 | 0.35 | 0.35 | 0.00 | 0.37 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 0 | 83 | 83 | 893 | 0 | 1537 |
| Grp Volume(v), veh/h | 214 | 253 | 0 | 0 | 354 | 313 | 2 | 0 | 0 | 595 | 0 | 226 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 166 | 0 | 0 | 893 | 0 | 1537 |
| Q Serve(g_s), s | 4.6 | 5.1 | 0.0 | 0.0 | 11.3 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 |
| Cycle Q Clear(g_c), s | 4.6 | 5.1 | 0.0 | 0.0 | 11.3 | 11.9 | 21.0 | 0.0 | 0.0 | 21.0 | 0.0 | 6.5 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 410 | 852 | 0 | 0 | 457 | 389 | 149 | 0 | 0 | 433 | 0 | 566 |
| V/C Ratio(X) | 0.52 | 0.30 | 0.00 | 0.00 | 0.77 | 0.81 | 0.01 | 0.00 | 0.00 | 1.38 | 0.00 | 0.40 |
| Avail Cap(c_a), veh/h | 418 | 862 | 0 | 0 | 464 | 394 | 149 | 0 | 0 | 435 | 0 | 567 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.0 | 9.9 | 0.0 | 0.0 | 20.4 | 20.7 | 15.3 | 0.0 | 0.0 | 22.1 | 0.0 | 14.0 |
| Incr Delay (d2), s/veh | 1.1 | 0.3 | 0.0 | 0.0 | 8.7 | 12.4 | 0.0 | 0.0 | 0.0 | 182.9 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.4 | 0.0 | 0.0 | 0.0 | 0.2 | 1.0 | 0.0 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.2 | 4.7 | 0.0 | 0.0 | 10.7 | 10.5 | 0.0 | 0.0 | 0.0 | 54.6 | 0.0 | 5.1 |
| LnGrp Delay(d),s/veh | 14.5 | 10.3 | 0.0 | 0.0 | 29.2 | 34.0 | 15.3 | 0.0 | 0.0 | 217.0 | 0.0 | 14.4 |
| LnGrp LOS | B | B | | | C | C | B | | | F | | B |
| Approach Vol, veh/h | | 467 | | | 667 | | | 2 | | | 821 | |
| Approach Delay, s/veh | | 12.2 | | | 31.5 | | | 15.3 | | | 161.2 | |
| Approach LOS | | B | | | C | | | B | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 33.6 | | 26.0 | 11.9 | 21.8 | | 26.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 21.0 | 7.0 | 15.0 | | 21.0 |
| Max Q Clear Time (g_c+I1), s | | 7.6 | | 23.0 | 7.1 | 14.4 | | 23.0 |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | 0.0 | 0.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 81.3 |
| HCM 2010 LOS | F |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 727 | 1443 | 3 | 694 | 1403 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 11 | 11 |
| Grade (%) | 0% | | 2% | | | 2% |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1636 | 1689 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1636 | 1689 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 416 | | 565 | | | 405 |
| Travel Time (s) | 11.3 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 749 | 1491 | 0 | 715 | 1446 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 36.0 | 34.0 | | 36.0 | 70.0 |
| Total Split (%) | | 51.4% | 48.6% | | 51.4% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 28.0 | 27.0 | | 28.0 | 70.0 |
| Actuated g/C Ratio | | 0.40 | 0.39 | | 0.40 | 1.00 |
| v/c Ratio | | 0.73 | 1.13 | | 1.09 | 0.86 |
| Control Delay | | 25.4 | 88.3 | | 87.3 | 6.7 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 25.4 | 88.3 | | 87.3 | 6.7 |
| LOS | | C | F | | F | A |
| Approach Delay | | | 88.3 | | | 33.4 |
| Approach LOS | | | F | | | C |
| Queue Length 50th (ft) | | 200 | ~604 | | ~356 | 0 |
| Queue Length 95th (ft) | | m214 | m208 | | #550 | #16 |
| Internal Link Dist (ft) | 336 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1030 | 1323 | | 654 | 1689 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |



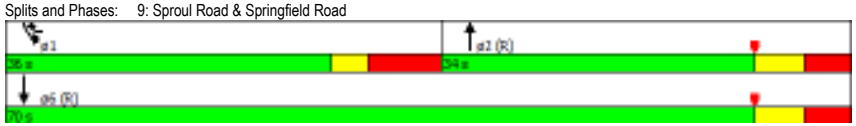


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.73 | 1.13 | | 1.09 | 0.86 |

**Intersection Summary**

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 6 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 50.6 Intersection LOS: D
Intersection Capacity Utilization 95.3% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 129 | 55 | 169 | 9 | 43 | 22 | 114 | 347 | 4 | 24 | 234 | 124 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 184 | | | 229 | | | 361 | | | 623 | |
| Travel Time (s) | | 5.0 | | | 6.2 | | | 9.8 | | | 17.0 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Intersection Delay, s/veh | 26 |
| Intersection LOS | D |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 129 | 55 | 169 | 0 | 9 | 43 | 22 | 0 | 114 | 347 | 4 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 0 | 1 | 2 | 11 | 0 | 5 | 2 | 0 | 1 | 0 |
| Mvmt Flow | 0 | 139 | 59 | 182 | 0 | 10 | 46 | 24 | 0 | 123 | 373 | 4 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 14.8 | 12.8 | 38.6 |
| HCM LOS | B | B | E |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 25% | 70% | 0% | 12% | 6% |
| Vol Thru, % | 75% | 30% | 0% | 58% | 61% |
| Vol Right, % | 1% | 0% | 100% | 30% | 32% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 465 | 184 | 169 | 74 | 382 |
| LT Vol | 114 | 129 | 0 | 9 | 24 |
| Through Vol | 347 | 55 | 0 | 43 | 234 |
| RT Vol | 4 | 0 | 169 | 22 | 124 |
| Lane Flow Rate | 500 | 198 | 182 | 80 | 411 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.875 | 0.429 | 0.34 | 0.176 | 0.715 |
| Departure Headway (Hd) | 6.297 | 7.815 | 6.734 | 7.973 | 6.268 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 575 | 459 | 532 | 447 | 575 |
| Service Time | 4.351 | 5.579 | 4.498 | 6.07 | 4.328 |
| HCM Lane V/C Ratio | 0.87 | 0.431 | 0.342 | 0.179 | 0.715 |
| HCM Control Delay | 38.6 | 16.4 | 13 | 12.8 | 23.6 |
| HCM Lane LOS | E | C | B | B | C |
| HCM 95th-tile Q | 9.9 | 2.1 | 1.5 | 0.6 | 5.8 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 24 | 234 | 124 |
| Peak Hour Factor | 0.92 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, % | 2 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 26 | 252 | 133 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 23.6 |
| HCM LOS | C |

| Lane |
|---|

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 17 | 2224 | 5 | 19 | 2164 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 17 | 2224 | 5 | 19 | 2164 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 17 | 2269 | 5 | 19 | 2208 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3415 | 1139 | 0 | 0 | 2274 | 0 |
| Stage 1 | 2272 | - | - | - | - | - |
| Stage 2 | 1143 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *4 | *178 | - | - | *215 | - |
| Stage 1 | *184 | - | - | - | - | - |
| Stage 2 | *219 | - | - | - | - | - |
| Platoon blocked, % | | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *4 | *178 | - | - | *215 | - |
| Mov Cap-2 Maneuver | *4 | - | - | - | - | - |
| Stage 1 | *184 | - | - | - | - | - |
| Stage 2 | *219 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 27.4 | 0 | 0.2 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 178 | * 215 | - |
| HCM Lane V/C Ratio | - | - | 0.097 | 0.09 | - |
| HCM Control Delay (s) | - | - | 27.4 | 23.4 | 0 |
| HCM Lane LOS | - | - | D | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.3 | - |

| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 80 | 110 | 76 | 824 | 627 | 267 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 640 | |
| Travel Time (s) | 10.6 | | | 23.1 | 17.5 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 73.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 80 | 110 | 76 | 824 | 627 | 267 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | -1 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 0 | 0 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 92 | 126 | 87 | 947 | 721 | 307 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1996 | 874 | 1028 | 0 | - | 0 |
| Stage 1 | 874 | - | - | - | - | - |
| Stage 2 | 1122 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 2.4 | - | - | - |
| Pot Cap-1 Maneuver | ~ 71 | 412 | 465 | - | - | - |
| Stage 1 | 452 | - | - | - | - | - |
| Stage 2 | 266 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | ~ 43 | 412 | 465 | - | - | - |
| Mov Cap-2 Maneuver | ~ 43 | - | - | - | - | - |
| Stage 1 | 452 | - | - | - | - | - |
| Stage 2 | 161 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 762 | 1.2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 465 | - | 89 | - | - |
| HCM Lane V/C Ratio | 0.188 | - | 2.454 | - | - |
| HCM Control Delay (s) | 14.5 | 0 | $ 762 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 20.2 | - | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 301 | 467 | 30 | 0 | 484 | 98 | 0 | 0 | 12 | 62 | 0 | 163 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | | | -4% | | | 0% | | | 0% | |
| Storage Length (ft) | 200 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | 225 | | | 326 | | | 375 | | | 286 | |
| Travel Time (s) | | 4.4 | | | 6.4 | | | 10.2 | | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | | 1 | | | | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 1% | 0% | 2% | 2% | 2% | 0% | 2% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 301 | 467 | 30 | 0 | 484 | 98 | 0 | 0 | 12 | 62 | 0 | 163 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 200 | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 4 | - | - | -4 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 0 | 2 | 0 |
| Mvmt Flow | 317 | 492 | 32 | 0 | 509 | 103 | 0 | 0 | 13 | 65 | 0 | 172 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 613 | 0 | 0 | 523 | 0 | 0 | 1788 | 1754 | 263 | 1440 | 1718 | 561 |
| Stage 1 | - | - | - | - | - | - | 1141 | 1141 | - | 561 | 561 | - |
| Stage 2 | - | - | - | - | - | - | 647 | 613 | - | 879 | 1157 | - |
| Critical Hdwy | 3.9 | - | - | 3.9 | - | - | 7.5 | 6.53 | 6.5 | 7.5 | 6.53 | 6.5 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.3 | 5.53 | - | 6.3 | 5.53 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.7 | 5.53 | - | 6.7 | 5.53 | - |
| Follow-up Hdwy | 2.4 | - | - | 2.4 | - | - | 2.8 | 4.019 | 2.9 | 2.8 | 4.019 | 2.9 |
| Pot Cap-1 Maneuver | *984 | - | - | 1008 | - | - | *116 | *139 | 857 | *290 | *149 | *814 |
| Stage 1 | - | - | - | - | - | - | *263 | *275 | - | *843 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *843 | *588 | - | *346 | *270 | - |
| Platoon blocked, % | 1 | - | - | | - | - | 1 | 1 | | 1 | 1 | 1 |
| Mov Cap-1 Maneuver | *984 | - | - | 1007 | - | - | *68 | *94 | 856 | *214 | *101 | *814 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | *68 | *94 | - | *214 | *101 | - |
| Stage 1 | - | - | - | - | - | - | *178 | *186 | - | *572 | *588 | - |
| Stage 2 | - | - | - | - | - | - | *665 | *588 | - | *231 | *183 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 3.9 | 0 | 9.3 | 20.9 |
| HCM LOS | | | A | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 856 | * 984 | - | - | 1007 | - | - | 459 |
| HCM Lane V/C Ratio | 0.015 | 0.322 | - | - | - | - | - | 0.516 |
| HCM Control Delay (s) | 9.3 | 10.4 | - | - | 0 | - | - | 20.9 |
| HCM Lane LOS | A | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0 | 1.4 | - | - | 0 | - | - | 2.9 |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 53 | 243 | 492 | 29 | 163 | 568 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 6.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 53 | 243 | 492 | 29 | 163 | 568 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 56 | 259 | 523 | 31 | 173 | 604 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1474 | 523 | 0 | 0 | 523 | 0 |
| Stage 1 | 523 | - | - | - | - | - |
| Stage 2 | 951 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 176 | 602 | - | - | 793 | - |
| Stage 1 | 713 | - | - | - | - | - |
| Stage 2 | 460 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 118 | 602 | - | - | 793 | - |
| Mov Cap-2 Maneuver | 240 | - | - | - | - | - |
| Stage 1 | 713 | - | - | - | - | - |
| Stage 2 | 309 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 26.4 | 0 | 2.4 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 474 | 793 | - |
| HCM Lane V/C Ratio | - | - | 0.664 | 0.219 | - |
| HCM Control Delay (s) | - | - | 26.4 | 10.8 | 0 |
| HCM Lane LOS | - | - | D | B | A |
| HCM 95th %tile Q(veh) | - | - | 4.8 | 0.8 | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 5 | 270 | 445 | 10 | 22 | 43 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 16 | 12 |
| Grade (%) | | 0% | 1% | | -2% | |
| Storage Length (ft) | 140 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 485 | 610 | | 285 | |
| Travel Time (s) | | 9.4 | 11.9 | | 7.8 | |
| Confl. Peds. (#/hr) | | | | | 5 | 5 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 11% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 5 | 270 | 445 | 10 | 22 | 43 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 5 | 5 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 140 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 1 | - | -2 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 0 | 1 | 1 | 11 | 0 | 0 |
| Mvmt Flow | 6 | 346 | 571 | 13 | 28 | 55 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 588 | 0 | - | 0 | 941 | 297 |
| Stage 1 | - | - | - | - | 582 | - |
| Stage 2 | - | - | - | - | 359 | - |
| Critical Hdwy | 4.3 | - | - | - | 6.2 | 6.7 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5 | - |
| Follow-up Hdwy | 3 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | 752 | - | - | - | 342 | 757 |
| Stage 1 | - | - | - | - | 633 | - |
| Stage 2 | - | - | - | - | 843 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 752 | - | - | - | 336 | 753 |
| Mov Cap-2 Maneuver | - | - | - | - | 336 | - |
| Stage 1 | - | - | - | - | 629 | - |
| Stage 2 | - | - | - | - | 832 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0 | 13.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 752 | - | - | - | 530 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.157 |
| HCM Control Delay (s) | 9.8 | - | - | - | 13.1 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.6 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 231 | 70 | 166 | 341 | 104 | 177 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1359 | | | 673 | 727 | |
| Travel Time (s) | 30.9 | | | 15.3 | 16.5 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 13.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 231 | 70 | 166 | 341 | 104 | 177 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 200 | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 12 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 246 | 74 | 177 | 363 | 111 | 188 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 246 | 0 | 962 | 246 |
| Stage 1 | - | - | - | - | 246 | - |
| Stage 2 | - | - | - | - | 716 | - |
| Critical Hdwy | - | - | 4.3 | - | 8.8 | 7.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 7.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 7.8 | - |
| Follow-up Hdwy | - | - | 3 | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | - | - | 989 | - | 166 | 777 |
| Stage 1 | - | - | - | - | 779 | - |
| Stage 2 | - | - | - | - | 338 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 989 | - | 129 | 777 |
| Mov Cap-2 Maneuver | - | - | - | - | 129 | - |
| Stage 1 | - | - | - | - | 779 | - |
| Stage 2 | - | - | - | - | 262 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 3.1 | 47.5 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 129 | 777 | - | - | 989 | - |
| HCM Lane V/C Ratio | 0.858 | 0.242 | - | - | 0.179 | - |
| HCM Control Delay (s) | 109.5 | 11.1 | - | - | 9.4 | 0 |
| HCM Lane LOS | F | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 5.4 | 0.9 | - | - | 0.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 151 | 1614 | 179 | 172 | 1674 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 14 | 12 | 13 |
| Grade (%) | 0% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 225 | 75 | |
| Storage Lanes | 0 | 1 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 188 | | 504 | | | 488 |
| Travel Time (s) | 5.1 | | 8.6 | | | 8.3 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 2% | 1% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 151 | 1614 | 179 | 172 | 1674 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | -2 | - | - | 2 |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 1 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 157 | 1681 | 186 | 179 | 1744 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3004 | 934 | 0 | 0 | 1868 | 0 |
| Stage 1 | 1774 | - | - | - | - | - |
| Stage 2 | 1230 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *10 | *737 | - | - | 844 | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *461 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *8 | *737 | - | - | 844 | - |
| Mov Cap-2 Maneuver | *228 | - | - | - | - | - |
| Stage 1 | *763 | - | - | - | - | - |
| Stage 2 | *363 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.2 | 0 | 1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 737 | 844 | - |
| HCM Lane V/C Ratio | - | - | 0.213 | 0.212 | - |
| HCM Control Delay (s) | - | - | 11.2 | 10.4 | - |
| HCM Lane LOS | - | - | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.8 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 548 | 4 | 2 | 519 | 3 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -4% | | | 4% | 0% | |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 284 | | | 300 | 240 | |
| Travel Time (s) | 5.5 | | | 5.8 | 6.5 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 1% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 548 | 4 | 2 | 519 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | -4 | - | - | 4 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 2 | 2 | 1 | 2 | 2 |
| Mvmt Flow | 577 | 4 | 2 | 546 | 3 | 2 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 581 | 0 | 1130 | 291 |
| Stage 1 | - | - | - | - | 579 | - |
| Stage 2 | - | - | - | - | 551 | - |
| Critical Hdwy | - | - | 3.9 | - | 7.5 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.3 | - |
| Follow-up Hdwy | - | - | 2.4 | - | 2.8 | 3 |
| Pot Cap-1 Maneuver | - | - | *1197 | - | *333 | *957 |
| Stage 1 | - | - | - | - | *1026 | - |
| Stage 2 | - | - | - | - | *603 | - |
| Platoon blocked, % | - | - | 1 | - | 1 | 1 |
| Mov Cap-1 Maneuver | - | - | *1197 | - | *332 | *957 |
| Mov Cap-2 Maneuver | - | - | - | - | *332 | - |
| Stage 1 | - | - | - | - | *1026 | - |
| Stage 2 | - | - | - | - | *602 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 449 | - | - | * 1197 | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.002 | - |
| HCM Control Delay (s) | 13.1 | - | - | 8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

**Notes**

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 779 | 557 | 7 | 0 | 31 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | | 4% | -4% | | 0% | |
| Link Speed (mph) | | 35 | 35 | | 25 | |
| Link Distance (ft) | | 227 | 225 | | 164 | |
| Travel Time (s) | | 4.4 | 4.4 | | 4.5 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 2% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 779 | 557 | 7 | 0 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 4 | -4 | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 803 | 574 | 7 | 0 | 32 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 581 | 0 | - | 0 | 980 | 291 |
| Stage 1 | - | - | - | - | 578 | - |
| Stage 2 | - | - | - | - | 402 | - |
| Critical Hdwy | 3.9 | - | - | - | 7.7 | 7.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 6.7 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 6.7 | - |
| Follow-up Hdwy | 2.4 | - | - | - | 3 | 3.1 |
| Pot Cap-1 Maneuver | *1197 | - | - | - | *423 | *926 |
| Stage 1 | - | - | - | - | *957 | - |
| Stage 2 | - | - | - | - | *668 | - |
| Platoon blocked, % | 1 | - | - | - | 1 | 1 |
| Mov Cap-1 Maneuver | *1197 | - | - | - | *423 | *926 |
| Mov Cap-2 Maneuver | - | - | - | - | *423 | - |
| Stage 1 | - | - | - | - | *957 | - |
| Stage 2 | - | - | - | - | *668 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | * 1197 | - | - | - | 926 |
| HCM Lane V/C Ratio | - | - | - | - | 0.035 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 2 | 26 | 49 | 351 | 199 | 2 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (ft) | 0 | 0 | 75 | | | 0 |
| Storage Lanes | 1 | 0 | 0 | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 139 | | | 286 | 248 | |
| Travel Time (s) | 3.8 | | | 7.8 | 6.8 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 26 | 49 | 351 | 199 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 0 | 2 |
| Mvmt Flow | 2 | 27 | 52 | 369 | 209 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 684 | 211 | 212 | 0 | - | 0 |
| Stage 1 | 211 | - | - | - | - | - |
| Stage 2 | 473 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.3 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | 3 | - | - | - |
| Pot Cap-1 Maneuver | 465 | 882 | 1016 | - | - | - |
| Stage 1 | 952 | - | - | - | - | - |
| Stage 2 | 712 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 435 | 882 | 1016 | - | - | - |
| Mov Cap-2 Maneuver | 435 | - | - | - | - | - |
| Stage 1 | 952 | - | - | - | - | - |
| Stage 2 | 666 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.5 | 1.1 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1016 | - | 822 | - | - |
| HCM Lane V/C Ratio | 0.051 | - | 0.036 | - | - |
| HCM Control Delay (s) | 8.7 | 0 | 9.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.1 | - | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 19 | 2029 | 72 | 0 | 2140 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | 4% | | | -2% |
| Storage Length (ft) | 0 | 0 | | 225 | 0 | |
| Storage Lanes | 0 | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 153 | | 428 | | | 98 |
| Travel Time (s) | 4.2 | | 7.3 | | | 1.7 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 19 | 2029 | 72 | 0 | 2140 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 225 | - | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 4 | - | - | -2 |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 1 |
| Mvmt Flow | 0 | 19 | 2049 | 73 | 0 | 2162 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3130 | 1025 | 0 | 0 | 2049 | 0 |
| Stage 1 | 2049 | - | - | - | - | - |
| Stage 2 | 1081 | - | - | - | - | - |
| Critical Hdwy | 7.7 | 7.2 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.7 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.7 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | *0 | *270 | - | - | *327 | - |
| Stage 1 | *280 | - | - | - | - | - |
| Stage 2 | *254 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *0 | *270 | - | - | *327 | - |
| Mov Cap-2 Maneuver | *122 | - | - | - | - | - |
| Stage 1 | *280 | - | - | - | - | - |
| Stage 2 | *254 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19.4 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 270 | * 327 | - |
| HCM Lane V/C Ratio | - | - | 0.071 | - | - |
| HCM Control Delay (s) | - | - | 19.4 | 0 | - |
| HCM Lane LOS | - | - | C | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0 | - |

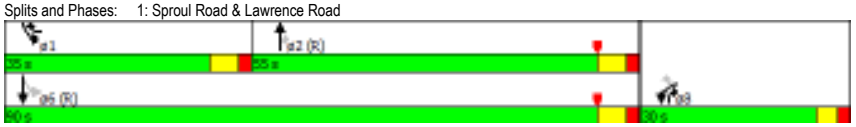
| Notes |
|---|
| ~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon |

# *2025 PROJECTED CONDITIONS WITH IMPROVEMENTS*

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 357 | 665 | 1319 | 404 | 417 | 906 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 331 | | 389 | | | 1061 |
| Travel Time (s) | 5.0 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 6% | 3% | 5% | 4% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 30.0 | 35.0 | 55.0 | 30.0 | 35.0 | 90.0 |
| Total Split (%) | 25.0% | 29.2% | 45.8% | 25.0% | 29.2% | 75.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 6 (5%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 357 | 665 | 1319 | 404 | 417 | 906 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 5 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1664 | 1781 | 1706 | 1791 | 1872 | 1819 |
| Adj Flow Rate, veh/h | 364 | 611 | 1346 | 320 | 426 | 924 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 6 | 3 | 5 | 4 | 2 | 5 |
| Cap, veh/h | 666 | 612 | 1350 | 1059 | 483 | 2447 |
| Arrive On Green | 0.22 | 0.22 | 1.00 | 1.00 | 0.15 | 0.71 |
| Sat Flow, veh/h | 3075 | 1514 | 3326 | 1522 | 1783 | 3546 |
| Grp Volume(v), veh/h | 364 | 611 | 1346 | 320 | 426 | 924 |
| Grp Sat Flow(s),veh/h/ln | 1537 | 1514 | 1620 | 1522 | 1783 | 1728 |
| Q Serve(g_s), s | 12.6 | 26.0 | 0.0 | 0.0 | 13.1 | 12.8 |
| Cycle Q Clear(g_c), s | 12.6 | 26.0 | 0.0 | 0.0 | 13.1 | 12.8 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 666 | 612 | 1350 | 1059 | 483 | 2447 |
| V/C Ratio(X) | 0.55 | 1.00 | 1.00 | 0.30 | 0.88 | 0.38 |
| Avail Cap(c_a), veh/h | 666 | 554 | 1676 | 1117 | 660 | 2447 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.72 | 0.72 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 42.0 | 34.5 | 10.0 | 1.0 | 17.9 | 7.0 |
| Incr Delay (d2), s/veh | 0.9 | 35.9 | 20.0 | 0.5 | 10.3 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.3 | 0.0 | 11.9 | 0.0 | 1.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.6 | 32.4 | 33.5 | 2.2 | 21.7 | 10.3 |
| LnGrp Delay(d),s/veh | 43.2 | 70.4 | 41.9 | 1.5 | 29.3 | 7.4 |
| LnGrp LOS | D | E | D | A | C | A |
| Approach Vol, veh/h | 975 | | 1666 | | | 1350 |
| Approach Delay, s/veh | 60.3 | | 34.1 | | | 14.3 |
| Approach LOS | E | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 22.9 | 67.1 | | | | 90.0 | | 30.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 29.0 | 49.0 | | | | 84.0 | | 25.0 |
| Max Q Clear Time (g_c+I1), s | 15.6 | 2.5 | | | | 15.3 | | 28.5 |
| Green Ext Time (p_c), s | 1.3 | 19.6 | | | | 21.8 | | 0.0 |

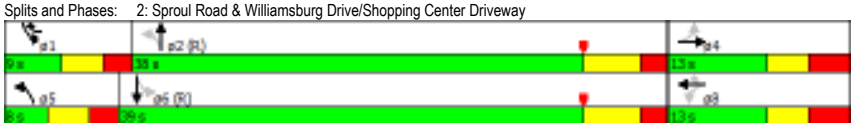
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.8 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 41 | 16 | 37 | 74 | 6 | 81 | 26 | 1656 | 84 | 86 | 1326 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 611 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.4 | | | 6.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 7% | 12% | 1% | 7% | 4% | 0% | 4% | 3% | 3% | 5% | 12% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 13.0 | 13.0 | | 13.0 | 13.0 | 9.0 | 8.0 | 38.0 | | 9.0 | 39.0 | |
| Total Split (%) | 21.7% | 21.7% | | 21.7% | 21.7% | 15.0% | 13.3% | 63.3% | | 15.0% | 65.0% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 41 | 16 | 37 | 74 | 6 | 81 | 26 | 1656 | 84 | 86 | 1326 | 18 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1699 | 1800 | 1764 | 1739 | 1696 | 1764 | 1697 | 1835 | 1748 | 1781 | 1800 |
| Adj Flow Rate, veh/h | 43 | 17 | 38 | 77 | 6 | 77 | 27 | 1725 | 0 | 90 | 1381 | 17 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 7 | 7 | 7 | 7 | 7 | 4 | 0 | 4 | 4 | 3 | 5 | 5 |
| Cap, veh/h | 124 | 42 | 51 | 267 | 17 | 286 | 385 | 2431 | 0 | 374 | 2049 | 25 |
| Arrive On Green | 0.12 | 0.13 | 0.12 | 0.12 | 0.13 | 0.13 | 0.07 | 1.00 | 0.00 | 0.13 | 1.00 | 1.00 |
| Sat Flow, veh/h | 281 | 318 | 379 | 1138 | 127 | 1442 | 1680 | 4548 | 0 | 1664 | 3424 | 42 |
| Grp Volume(v), veh/h | 98 | 0 | 0 | 83 | 0 | 77 | 27 | 1725 | 0 | 90 | 682 | 716 |
| Grp Sat Flow(s),veh/h/ln | 977 | 0 | 0 | 1266 | 0 | 1442 | 1680 | 1425 | 0 | 1664 | 1692 | 1774 |
| Q Serve(g_s), s | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.4 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.2 | 0.0 | 0.0 | 3.7 | 0.0 | 2.7 | 0.4 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| Prop In Lane | 0.44 | | 0.39 | 0.93 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 200 | 0 | 0 | 263 | 0 | 286 | 385 | 2431 | 0 | 374 | 1013 | 1062 |
| V/C Ratio(X) | 0.49 | 0.00 | 0.00 | 0.32 | 0.00 | 0.27 | 0.07 | 0.71 | 0.00 | 0.24 | 0.67 | 0.67 |
| Avail Cap(c_a), veh/h | 200 | 0 | 0 | 263 | 0 | 286 | 439 | 2431 | 0 | 408 | 1013 | 1062 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.89 | 0.89 | 0.89 |
| Uniform Delay (d), s/veh | 25.8 | 0.0 | 0.0 | 24.5 | 0.0 | 20.4 | 4.6 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.8 | 0.0 | 0.0 | 0.7 | 0.0 | 0.5 | 0.1 | 1.8 | 0.0 | 0.3 | 3.2 | 3.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.1 | 0.0 | 0.0 | 2.5 | 0.0 | 2.0 | 0.3 | 0.7 | 0.0 | 1.0 | 1.6 | 1.6 |
| LnGrp Delay(d),s/veh | 27.6 | 0.0 | 0.0 | 25.2 | 0.0 | 20.9 | 4.7 | 1.9 | 0.0 | 4.4 | 3.2 | 3.1 |
| LnGrp LOS | C | | | C | | C | A | A | | A | A | A |
| Approach Vol, veh/h | | 98 | | | 160 | | | 1752 | | | 1488 | |
| Approach Delay, s/veh | | 27.6 | | | 23.1 | | | 1.9 | | | 3.2 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.9 | 39.1 | | 13.0 | 6.1 | 40.9 | | 13.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 4.0 | 32.0 | | 7.0 | 3.0 | 33.0 | | 7.0 |
| Max Q Clear Time (g_c+I1), s | 3.7 | 2.5 | | 8.2 | 2.9 | 2.5 | | 5.7 |
| Green Ext Time (p_c), s | 0.0 | 19.5 | | 0.0 | 0.0 | 20.0 | | 0.1 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 4.1 |
| HCM 2010 LOS | A |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 138 | 76 | 39 | 222 | 244 | 1 | 173 | 1221 | 41 | 1 | 837 | 150 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 5% | 6% | 3% | 4% | 4% | 0% | 4% | 3% | 5% | 0% | 4% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 43.3% | 43.3% | 43.3% | 43.3% | 43.3% | | 56.7% | 56.7% | | 56.7% | 56.7% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 5.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 138 | 76 | 39 | 222 | 244 | 1 | 173 | 1221 | 41 | 1 | 837 | 150 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1795 | 1765 | 1782 | 1714 | 1782 | 1705 | 1720 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 147 | 81 | 36 | 236 | 260 | 1 | 184 | 1299 | 35 | 1 | 890 | 131 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 6 | 6 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 0 | 4 | 4 |
| Cap, veh/h | 328 | 161 | 525 | 318 | 271 | 1 | 237 | 1572 | 42 | 165 | 1413 | 208 |
| Arrive On Green | 0.33 | 0.35 | 0.35 | 0.33 | 0.35 | 0.33 | 0.47 | 0.48 | 0.47 | 0.47 | 0.48 | 0.47 |
| Sat Flow, veh/h | 656 | 460 | 1500 | 655 | 774 | 3 | 503 | 3252 | 88 | 401 | 2924 | 430 |
| Grp Volume(v), veh/h | 228 | 0 | 36 | 497 | 0 | 0 | 184 | 652 | 682 | 1 | 509 | 512 |
| Grp Sat Flow(s),veh/h/ln | 1116 | 0 | 1500 | 1432 | 0 | 0 | 503 | 1634 | 1705 | 401 | 1671 | 1683 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.0 | 10.2 | 0.0 | 0.0 | 13.9 | 20.6 | 20.7 | 0.1 | 13.6 | 13.6 |
| Cycle Q Clear(g_c), s | 9.8 | 0.0 | 1.0 | 20.0 | 0.0 | 0.0 | 28.0 | 20.6 | 20.7 | 21.2 | 13.6 | 13.6 |
| Prop In Lane | 0.64 | | 1.00 | 0.47 | | 0.00 | 1.00 | | 0.05 | 1.00 | | 0.26 |
| Lane Grp Cap(c), veh/h | 471 | 0 | 525 | 566 | 0 | 0 | 237 | 790 | 824 | 165 | 808 | 814 |
| V/C Ratio(X) | 0.48 | 0.00 | 0.07 | 0.88 | 0.00 | 0.00 | 0.78 | 0.83 | 0.83 | 0.01 | 0.63 | 0.63 |
| Avail Cap(c_a), veh/h | 471 | 0 | 525 | 566 | 0 | 0 | 237 | 790 | 824 | 166 | 808 | 814 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.9 | 0.0 | 13.0 | 19.8 | 0.0 | 0.0 | 25.6 | 13.4 | 13.4 | 23.7 | 11.5 | 11.6 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.1 | 14.6 | 0.0 | 0.0 | 21.7 | 9.6 | 9.3 | 0.1 | 3.7 | 3.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.9 | 0.0 | 0.7 | 15.9 | 0.0 | 0.0 | 7.9 | 16.8 | 17.3 | 0.0 | 11.4 | 11.5 |
| LnGrp Delay(d),s/veh | 16.6 | 0.0 | 13.0 | 34.4 | 0.0 | 0.0 | 47.3 | 23.1 | 22.8 | 23.8 | 15.2 | 15.3 |
| LnGrp LOS | B | | B | C | | | D | C | C | C | B | B |
| Approach Vol, veh/h | | 264 | | | 497 | | | 1518 | | | 1022 | |
| Approach Delay, s/veh | | 16.1 | | | 34.4 | | | 25.9 | | | 15.3 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 34.0 | | 26.0 | | 34.0 | | 26.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 28.0 | | 20.0 | | 28.0 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | | 30.0 | | 11.8 | | 23.2 | | 22.0 |
| Green Ext Time (p_c), s | | 0.0 | | 2.1 | | 4.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 339 | 16 | 320 | 169 | 74 | 62 | 490 | 1179 | 332 | 21 | 597 | 437 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 2 | | 2 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 27% | 1% | 1% | 6% | 3% | 1% | 1% | 2% | 0% | 3% | 2% |
| Shared Lane Traffic (%) | 48% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 20.0 | 20.0 | 48.0 | 20.0 | 20.0 | | 48.0 | 70.0 | 20.0 | 10.0 | 32.0 | 20.0 |
| Total Split (%) | 16.7% | 16.7% | 40.0% | 16.7% | 16.7% | | 40.0% | 58.3% | 16.7% | 8.3% | 26.7% | 16.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 339 | 16 | 320 | 169 | 74 | 62 | 490 | 1179 | 332 | 21 | 597 | 437 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1826 | 1786 | 1844 | 1872 | 1814 | 1818 | 1782 | 1782 | 1765 | 1800 | 1748 | 1765 |
| Adj Flow Rate, veh/h | 365 | 0 | 0 | 126 | 146 | 0 | 510 | 1228 | 0 | 22 | 622 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 27 | 1 | 1 | 6 | 6 | 1 | 1 | 2 | 0 | 3 | 2 |
| Cap, veh/h | 406 | 0 | 763 | 193 | 196 | 0 | 628 | 1957 | 1029 | 44 | 719 | 500 |
| Arrive On Green | 0.12 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.36 | 0.57 | 0.00 | 0.03 | 0.22 | 0.00 |
| Sat Flow, veh/h | 3478 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 3386 | 1500 | 1714 | 3320 | 1500 |
| Grp Volume(v), veh/h | 365 | 0 | 0 | 126 | 146 | 0 | 510 | 1228 | 0 | 22 | 622 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 0 | 1568 | 1783 | 1814 | 0 | 1697 | 1693 | 1500 | 1714 | 1660 | 1500 |
| Q Serve(g_s), s | 12.4 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 33.1 | 29.6 | 0.0 | 1.5 | 21.7 | 0.0 |
| Cycle Q Clear(g_c), s | 12.4 | 0.0 | 0.0 | 8.1 | 9.4 | 0.0 | 33.1 | 29.6 | 0.0 | 1.5 | 21.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 406 | 0 | 763 | 193 | 196 | 0 | 628 | 1957 | 1029 | 44 | 719 | 500 |
| V/C Ratio(X) | 0.90 | 0.00 | 0.00 | 0.65 | 0.74 | 0.00 | 0.81 | 0.63 | 0.00 | 0.50 | 0.86 | 0.00 |
| Avail Cap(c_a), veh/h | 406 | 0 | 745 | 208 | 212 | 0 | 622 | 1917 | 1011 | 86 | 719 | 500 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.3 | 0.0 | 0.0 | 51.4 | 51.9 | 0.0 | 34.7 | 17.1 | 0.0 | 57.7 | 45.3 | 0.0 |
| Incr Delay (d2), s/veh | 22.4 | 0.0 | 0.0 | 6.5 | 12.4 | 0.0 | 8.1 | 1.5 | 0.0 | 8.4 | 13.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 11.7 | 0.0 | 0.0 | 7.8 | 9.2 | 0.0 | 25.2 | 20.0 | 0.0 | 1.5 | 16.7 | 0.0 |
| LnGrp Delay(d),s/veh | 74.7 | 0.0 | 0.0 | 57.8 | 64.3 | 0.0 | 46.3 | 18.6 | 0.0 | 66.1 | 58.4 | 0.0 |
| LnGrp LOS | E | | | E | E | | D | B | | E | E | |
| Approach Vol, veh/h | | 365 | | | 272 | | | 1738 | | | 644 | |
| Approach Delay, s/veh | | 74.7 | | | 61.3 | | | 26.7 | | | 58.7 | |
| Approach LOS | | E | | | E | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 7.1 | 73.9 | | 20.0 | 49.0 | 32.0 | | 19.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 5.0 | 63.0 | | 13.0 | 43.0 | * 25 | | 13.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 32.1 | | 14.9 | 35.6 | 24.2 | | 11.9 |
| Green Ext Time (p_c), s | 0.0 | 9.4 | | 0.0 | 3.1 | 0.3 | | 0.1 |

**Intersection Summary**

HCM 2010 Ctrl Delay 42.5
HCM 2010 LOS D

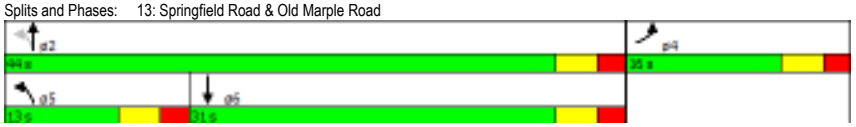
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 44 | 50 | 60 | 851 | 501 | 420 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 538 | |
| Travel Time (s) | 10.6 | | | 23.1 | 14.7 | |
| Confl. Peds. (#/hr) | | | 1 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 11% | 2% | 4% | 5% | 5% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | | 8.0 | 13.0 | 13.0 | |
| Total Split (s) | 16.0 | | 13.0 | 44.0 | 31.0 | |
| Total Split (%) | 26.7% | | 21.7% | 73.3% | 51.7% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | Max | Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 57.5 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 13: Springfield Road & Old Marple Road








| Movement | EBL | EBR | NBL | NBT | SBT | SBR | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Volume (veh/h) | 44 | 50 | 60 | 851 | 501 | 420 | | |
| Number | 7 | 14 | 5 | 2 | 6 | 16 | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Adj Sat Flow, veh/h/ln | 1700 | 1800 | 1800 | 1733 | 1723 | 1809 | | |
| Adj Flow Rate, veh/h | 45 | 52 | 62 | 877 | 516 | 433 | | |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | | |
| Percent Heavy Veh, % | 0 | 0 | 4 | 4 | 5 | 5 | | |
| Cap, veh/h | 72 | 84 | 72 | 496 | 648 | 543 | | |
| Arrive On Green | 0.10 | 0.08 | 0.73 | 0.75 | 0.75 | 0.73 | | |
| Sat Flow, veh/h | 699 | 808 | 0 | 664 | 867 | 728 | | |
| Grp Volume(v), veh/h | 98 | 0 | 939 | 0 | 0 | 949 | | |
| Grp Sat Flow(s),veh/h/ln | 1522 | 0 | 664 | 0 | 0 | 1594 | | |
| Q Serve(g_s), s | 3.3 | 0.0 | 34.2 | 0.0 | 0.0 | 20.3 | | |
| Cycle Q Clear(g_c), s | 3.3 | 0.0 | 34.2 | 0.0 | 0.0 | 20.3 | | |
| Prop In Lane | 0.46 | 0.53 | 0.07 | | | 0.46 | | |
| Lane Grp Cap(c), veh/h | 158 | 0 | 0 | 0 | 0 | 1191 | | |
| V/C Ratio(X) | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | | |
| Avail Cap(c_a), veh/h | 341 | 0 | 0 | 0 | 0 | 1191 | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | | |
| Uniform Delay (d), s/veh | 23.3 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | | |
| Incr Delay (d2), s/veh | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| %ile BackOfQ(95%),veh/ln | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 15.6 | | |
| LnGrp Delay(d),s/veh | 27.2 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | | |
| LnGrp LOS | C | | | | | B | | |
| Approach Vol, veh/h | 98 | | | 939 | 949 | | | |
| Approach Delay, s/veh | 27.2 | | | 0.0 | 10.0 | | | |
| Approach LOS | C | | | A | B | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 44.0 | | 9.5 | | 44.0 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 39.0 | | 11.0 | | 26.0 | | |
| Max Q Clear Time (g_c+I1), s | | 36.2 | | 5.8 | | 22.3 | | |
| Green Ext Time (p_c), s | | 2.3 | | 0.1 | | 3.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.1 |
| HCM 2010 LOS | A |

**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 591 | 257 | 648 | 282 | 39 | 356 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 513 | | 538 | | | 517 |
| Travel Time (s) | 10.0 | | 14.7 | | | 14.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 5% | 3% | 2% | 5% | 5% | 4% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Total Split (s) | 24.0 | 10.0 | 26.0 | 24.0 | 10.0 | 36.0 |
| Total Split (%) | 40.0% | 16.7% | 43.3% | 40.0% | 16.7% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: Springfield Road & Eagle Road

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 591 | 257 | 648 | 282 | 39 | 356 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 4 | 0 | 1 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1863 | 1756 | 1774 | 1723 | 1739 |
| Adj Flow Rate, veh/h | 642 | 206 | 704 | 264 | 42 | 387 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 3 | 2 | 5 | 5 | 4 |
| Cap, veh/h | 580 | 598 | 742 | 1140 | 201 | 928 |
| Arrive On Green | 0.33 | 0.33 | 0.42 | 0.42 | 0.04 | 0.53 |
| Sat Flow, veh/h | 1740 | 1583 | 1756 | 1508 | 1641 | 1739 |
| Grp Volume(v), veh/h | 642 | 206 | 704 | 264 | 42 | 387 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1583 | 1756 | 1508 | 1641 | 1739 |
| Q Serve(g_s), s | 20.0 | 5.6 | 23.2 | 3.1 | 0.8 | 8.0 |
| Cycle Q Clear(g_c), s | 20.0 | 5.6 | 23.2 | 3.1 | 0.8 | 8.0 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 580 | 598 | 742 | 1140 | 201 | 928 |
| V/C Ratio(X) | 1.11 | 0.34 | 0.95 | 0.23 | 0.21 | 0.42 |
| Avail Cap(c_a), veh/h | 580 | 598 | 742 | 1140 | 303 | 928 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.54 | 0.54 | 0.78 | 0.78 |
| Uniform Delay (d), s/veh | 20.0 | 13.4 | 16.8 | 2.2 | 13.7 | 8.4 |
| Incr Delay (d2), s/veh | 70.0 | 0.3 | 14.8 | 0.3 | 0.4 | 1.1 |
| Initial Q Delay(d3),s/veh | 22.1 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 41.4 | 4.5 | 18.9 | 5.2 | 0.7 | 7.0 |
| LnGrp Delay(d),s/veh | 112.2 | 13.7 | 31.8 | 2.4 | 14.1 | 9.5 |
| LnGrp LOS | F | B | C | A | B | A |
| Approach Vol, veh/h | 848 | | 968 | | | 429 |
| Approach Delay, s/veh | 88.2 | | 23.8 | | | 9.9 |
| Approach LOS | F | | C | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 6.7 | 29.3 | | | | 36.0 | | 24.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 21.0 | | | | 31.0 | | 19.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 25.7 | | | | 10.5 | | 22.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 6.2 | | 0.0 |

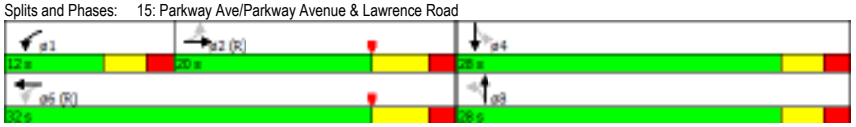
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 45.5 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 6 | 832 | 109 | 161 | 607 | 5 | 408 | 16 | 396 | 8 | 11 | 18 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 410 | | | 911 | | | 596 | | | 466 | |
| Travel Time (s) | | 6.2 | | | 13.8 | | | 16.3 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 4% | 7% | 33% | 4% | 4% | 3% | 7% | 2% | 0% | 10% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 20.0 | 20.0 | | 12.0 | 32.0 | | 28.0 | 28.0 | | 28.0 | 28.0 | |
| Total Split (%) | 33.3% | 33.3% | | 20.0% | 53.3% | | 46.7% | 46.7% | | 46.7% | 46.7% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 26 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 6 | 832 | 109 | 161 | 607 | 5 | 408 | 16 | 396 | 8 | 11 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1717 | 1791 | 1791 | 1628 | 1791 | 1721 | 1735 | 1773 | 1827 | 1759 | 1827 |
| Adj Flow Rate, veh/h | 6 | 858 | 112 | 166 | 626 | 2 | 421 | 16 | 348 | 8 | 11 | 0 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 7 | 7 | 10 | 10 | 10 |
| Cap, veh/h | 63 | 1276 | 166 | 95 | 708 | 3 | 517 | 117 | 562 | 173 | 205 | 0 |
| Arrive On Green | 0.43 | 0.45 | 0.43 | 0.43 | 0.45 | 0.43 | 0.40 | 0.40 | 0.38 | 0.38 | 0.40 | 0.00 |
| Sat Flow, veh/h | 5 | 2835 | 368 | 3 | 1573 | 6 | 1292 | 65 | 1419 | 265 | 575 | 0 |
| Grp Volume(v), veh/h | 521 | 0 | 455 | 298 | 0 | 496 | 421 | 0 | 364 | 19 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1711 | 0 | 1497 | 101 | 0 | 1481 | 1292 | 0 | 1485 | 840 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 14.5 | 30.3 | 0.0 | 16.6 | 11.4 | 0.0 | 11.9 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 14.6 | 0.0 | 14.5 | 30.3 | 0.0 | 16.6 | 22.9 | 0.0 | 11.9 | 12.0 | 0.0 | 0.0 |
| Prop In Lane | 0.01 | | 0.25 | 0.56 | | 0.00 | 1.00 | | 0.96 | 0.42 | | 0.00 |
| Lane Grp Cap(c), veh/h | 802 | 0 | 674 | 0 | 0 | 666 | 517 | 0 | 595 | 366 | 0 | 0 |
| V/C Ratio(X) | 0.65 | 0.00 | 0.68 | 0.00 | 0.00 | 0.75 | 0.81 | 0.00 | 0.61 | 0.05 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 802 | 0 | 674 | 0 | 0 | 666 | 558 | 0 | 594 | 407 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.85 | 0.00 | 0.85 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 13.1 | 0.0 | 13.2 | 0.0 | 0.0 | 13.7 | 19.7 | 0.0 | 14.8 | 12.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 4.1 | 0.0 | 5.4 | 0.0 | 0.0 | 7.4 | 7.3 | 0.0 | 1.6 | 0.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.5 | 0.0 | 11.3 | 0.0 | 0.0 | 12.8 | 12.2 | 0.0 | 8.6 | 0.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 17.1 | 0.0 | 18.5 | 0.0 | 0.0 | 21.1 | 27.1 | 0.0 | 16.4 | 12.3 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | C | C | | B | B | | |
| Approach Vol, veh/h | | 976 | | | 794 | | | 785 | | | 19 | |
| Approach Delay, s/veh | | 17.8 | | | 13.2 | | | 22.2 | | | 12.3 | |
| Approach LOS | | B | | | B | | | C | | | B | |

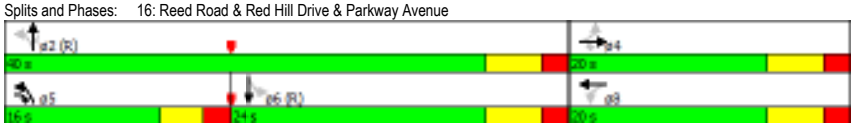
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 32.0 | | 28.0 | | 32.0 | | 28.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 14.0 | | 23.0 | | 26.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | | 16.6 | | 14.0 | | 32.3 | | 25.4 |
| Green Ext Time (p_c), s | | 0.0 | | 2.6 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.7 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 70 | 61 | 283 | 32 | 100 | 4 | 283 | 729 | 125 | 4 | 200 | 45 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | | | | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 9% | 9% | 5% | 0% | 1% | 3% | 12% | 3% | 0% | 50% | 3% | 14% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 20.0 | 20.0 | 16.0 | 20.0 | 20.0 | | 16.0 | 40.0 | 40.0 | 24.0 | 24.0 | |
| Total Split (%) | 33.3% | 33.3% | 26.7% | 33.3% | 33.3% | | 26.7% | 66.7% | 66.7% | 40.0% | 40.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 35 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 70 | 61 | 283 | 32 | 100 | 4 | 283 | 729 | 125 | 4 | 200 | 45 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1618 | 1618 | 1747 | 1836 | 1821 | 1836 | 1575 | 1713 | 1764 | 1836 | 1806 | 1836 |
| Adj Flow Rate, veh/h | 72 | 63 | 251 | 33 | 103 | 4 | 292 | 752 | 117 | 4 | 206 | 43 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 9 | 9 | 5 | 1 | 1 | 1 | 12 | 3 | 0 | 3 | 3 | 3 |
| Cap, veh/h | 349 | 328 | 535 | 120 | 276 | 9 | 750 | 1080 | 946 | 63 | 585 | 120 |
| Arrive On Green | 0.19 | 0.20 | 0.20 | 0.19 | 0.20 | 0.19 | 0.16 | 0.63 | 0.63 | 0.39 | 0.41 | 0.39 |
| Sat Flow, veh/h | 1107 | 1618 | 1485 | 227 | 1367 | 47 | 1500 | 1713 | 1499 | 6 | 1439 | 296 |
| Grp Volume(v), veh/h | 72 | 63 | 251 | 140 | 0 | 0 | 292 | 752 | 117 | 253 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1107 | 1618 | 1485 | 1641 | 0 | 0 | 1500 | 1713 | 1499 | 1741 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 1.9 | 7.8 | 0.0 | 0.0 | 0.0 | 5.7 | 17.3 | 1.9 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 2.6 | 1.9 | 7.8 | 4.1 | 0.0 | 0.0 | 5.7 | 17.3 | 1.9 | 6.1 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.24 | | 0.03 | 1.00 | | 1.00 | 0.02 | | 0.17 |
| Lane Grp Cap(c), veh/h | 349 | 328 | 535 | 378 | 0 | 0 | 750 | 1080 | 946 | 739 | 0 | 0 |
| V/C Ratio(X) | 0.21 | 0.19 | 0.47 | 0.37 | 0.00 | 0.00 | 0.39 | 0.70 | 0.12 | 0.34 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 402 | 405 | 605 | 452 | 0 | 0 | 814 | 1081 | 947 | 741 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 20.9 | 19.9 | 14.8 | 20.8 | 0.0 | 0.0 | 5.9 | 7.3 | 4.4 | 12.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.3 | 0.6 | 0.6 | 0.0 | 0.0 | 0.3 | 3.7 | 0.3 | 1.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.9 | 1.6 | 6.0 | 3.8 | 0.0 | 0.0 | 4.3 | 14.0 | 1.5 | 5.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 21.2 | 20.1 | 15.5 | 21.4 | 0.0 | 0.0 | 6.2 | 11.0 | 4.7 | 13.7 | 0.0 | 0.0 |
| LnGrp LOS | C | C | B | C | | | A | B | A | B | | |
| Approach Vol, veh/h | | 386 | | | 140 | | | 1161 | | | 253 | |
| Approach Delay, s/veh | | 17.3 | | | 21.4 | | | 9.2 | | | 13.7 | |
| Approach LOS | | B | | | C | | | A | | | B | |

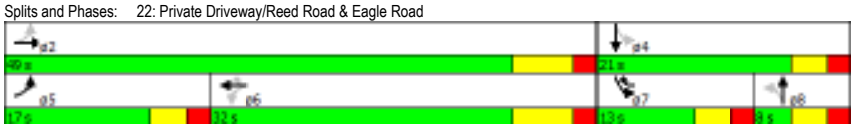
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.9 | | 17.1 | 13.4 | 29.4 | | 17.1 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 34.0 | | 14.0 | 11.0 | 18.0 | | 14.0 |
| Max Q Clear Time (g_c+I1), s | | 19.8 | | 10.3 | 8.2 | 8.1 | | 6.1 |
| Green Ext Time (p_c), s | | 4.2 | | 0.8 | 0.3 | 3.6 | | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 454 | 152 | 2 | 2 | 433 | 890 | 5 | 3 | 3 | 254 | 3 | 79 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 15 | 12 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 6% | 0% | 0% | 3% | 2% | 20% | 66% | 33% | 7% | 66% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 15.0 | 15.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | |
| Minimum Split (s) | 12.0 | 22.0 | | 22.0 | 22.0 | 9.0 | 8.0 | 8.0 | | 9.0 | 12.0 | |
| Total Split (s) | 17.0 | 49.0 | | 32.0 | 32.0 | 13.0 | 8.0 | 8.0 | | 13.0 | 21.0 | |
| Total Split (%) | 24.3% | 70.0% | | 45.7% | 45.7% | 18.6% | 11.4% | 11.4% | | 18.6% | 30.0% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 60.5 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 454 | 152 | 2 | 2 | 433 | 890 | 5 | 3 | 3 | 254 | 3 | 79 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1784 | 1890 | 1746 | 1695 | 1712 | 1827 | 1396 | 1827 | 1657 | 1753 | 1773 |
| Adj Flow Rate, veh/h | 483 | 162 | 2 | 2 | 461 | 853 | 5 | 3 | 3 | 270 | 3 | 75 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 6 | 6 | 3 | 3 | 2 | 66 | 66 | 66 | 7 | 66 | 66 |
| Cap, veh/h | 461 | 1089 | 13 | 52 | 634 | 733 | 101 | 16 | 15 | 428 | 14 | 342 |
| Arrive On Green | 0.19 | 0.62 | 0.60 | 0.36 | 0.37 | 0.37 | 0.04 | 0.05 | 0.04 | 0.13 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1782 | 1759 | 22 | 1 | 1694 | 1455 | 509 | 313 | 308 | 1578 | 58 | 1441 |
| Grp Volume(v), veh/h | 483 | 0 | 164 | 463 | 0 | 853 | 11 | 0 | 0 | 270 | 0 | 78 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 0 | 1780 | 1695 | 0 | 1455 | 1130 | 0 | 0 | 1578 | 0 | 1499 |
| Q Serve(g_s), s | 12.3 | 0.0 | 2.7 | 0.0 | 0.0 | 26.0 | 0.6 | 0.0 | 0.0 | 9.0 | 0.0 | 2.9 |
| Cycle Q Clear(g_c), s | 12.3 | 0.0 | 2.7 | 16.6 | 0.0 | 26.0 | 0.7 | 0.0 | 0.0 | 9.0 | 0.0 | 2.9 |
| Prop In Lane | 1.00 | | 0.01 | 0.00 | | 1.00 | 0.45 | | 0.27 | 1.00 | | 0.96 |
| Lane Grp Cap(c), veh/h | 461 | 0 | 1102 | 662 | 0 | 733 | 115 | 0 | 0 | 428 | 0 | 355 |
| V/C Ratio(X) | 1.05 | 0.00 | 0.15 | 0.70 | 0.00 | 1.16 | 0.10 | 0.00 | 0.00 | 0.63 | 0.00 | 0.22 |
| Avail Cap(c_a), veh/h | 497 | 0 | 1102 | 662 | 0 | 733 | 124 | 0 | 0 | 428 | 0 | 367 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.4 | 0.0 | 5.6 | 18.8 | 0.0 | 17.2 | 32.0 | 0.0 | 0.0 | 25.8 | 0.0 | 21.3 |
| Incr Delay (d2), s/veh | 54.0 | 0.0 | 0.1 | 3.8 | 0.0 | 88.2 | 0.4 | 0.0 | 0.0 | 3.0 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 36.5 | 0.0 | 0.0 | 0.0 | 0.0 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 33.1 | 0.0 | 2.4 | 13.5 | 0.0 | 60.0 | 0.4 | 0.0 | 0.0 | 2.4 | 0.0 | 2.2 |
| LnGrp Delay(d),s/veh | 109.0 | 0.0 | 5.7 | 22.6 | 0.0 | 117.9 | 32.4 | 0.0 | 0.0 | 28.8 | 0.0 | 21.6 |
| LnGrp LOS | F | | A | C | | F | C | | | C | | C |
| Approach Vol, veh/h | | 647 | | | 1316 | | | 11 | | | 348 | |
| Approach Delay, s/veh | | 82.8 | | | 84.4 | | | 32.4 | | | 27.2 | |
| Approach LOS | | F | | | F | | | C | | | C | |

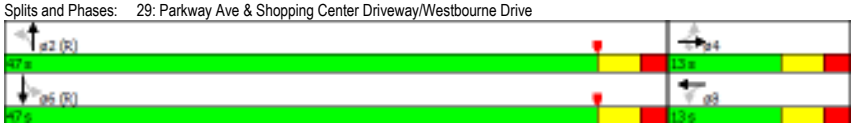
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 49.0 | | 20.5 | 17.0 | 32.0 | 13.0 | 7.5 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 16.0 | 12.0 | 25.0 | 8.0 | 3.0 |
| Max Q Clear Time (g_c+I1), s | | 4.7 | | 5.4 | 14.8 | 28.5 | 11.5 | 2.7 |
| Green Ext Time (p_c), s | | 17.4 | | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 75.1 |
| HCM 2010 LOS | E |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 59 | 17 | 34 | 19 | 22 | 29 | 51 | 665 | 2 | 19 | 199 | 55 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 192 | | | 246 | | | 388 | | | 596 | |
| Travel Time (s) | | 5.2 | | | 6.7 | | | 10.6 | | | 16.3 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 16% | 13% | 13% | 6% | 0% | 0% | 0% | 2% | 0% | 6% | 2% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 47.0 | 47.0 | | 47.0 | 47.0 | |
| Total Split (%) | 21.7% | 21.7% | 21.7% | 21.7% | 21.7% | | 78.3% | 78.3% | | 78.3% | 78.3% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 57 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 59 | 17 | 34 | 19 | 22 | 29 | 51 | 665 | 2 | 19 | 199 | 55 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1592 | 1690 | 1809 | 1851 | 1809 | 1836 | 1875 | 1836 | 1863 | 1894 | 1863 |
| Adj Flow Rate, veh/h | 63 | 18 | 36 | 20 | 23 | 31 | 54 | 707 | 2 | 20 | 212 | 59 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 13 | 13 | 13 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 225 | 43 | 160 | 99 | 60 | 59 | 121 | 1314 | 4 | 108 | 1004 | 267 |
| Arrive On Green | 0.10 | 0.11 | 0.11 | 0.10 | 0.11 | 0.10 | 0.74 | 0.75 | 0.74 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 1051 | 384 | 1424 | 201 | 533 | 530 | 76 | 1741 | 5 | 59 | 1330 | 353 |
| Grp Volume(v), veh/h | 81 | 0 | 36 | 74 | 0 | 0 | 763 | 0 | 0 | 291 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1434 | 0 | 1424 | 1264 | 0 | 0 | 1822 | 0 | 0 | 1742 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.4 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.0 | 0.0 | 1.4 | 3.8 | 0.0 | 0.0 | 10.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.78 | | 1.00 | 0.27 | | 0.42 | 0.07 | | 0.00 | 0.07 | | 0.20 |
| Lane Grp Cap(c), veh/h | 244 | 0 | 160 | 197 | 0 | 0 | 1408 | 0 | 0 | 1350 | 0 | 0 |
| V/C Ratio(X) | 0.33 | 0.00 | 0.23 | 0.38 | 0.00 | 0.00 | 0.54 | 0.00 | 0.00 | 0.22 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 290 | 0 | 214 | 256 | 0 | 0 | 1408 | 0 | 0 | 1350 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.3 | 0.0 | 24.3 | 25.4 | 0.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.7 | 1.2 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.0 | 1.0 | 2.3 | 0.0 | 0.0 | 10.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 26.1 | 0.0 | 25.0 | 26.6 | 0.0 | 0.0 | 4.6 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | A | | | A | | |
| Approach Vol, veh/h | | 117 | | | 74 | | | 763 | | | 291 | |
| Approach Delay, s/veh | | 25.8 | | | 26.6 | | | 4.6 | | | 0.4 | |
| Approach LOS | | C | | | C | | | A | | | A | |

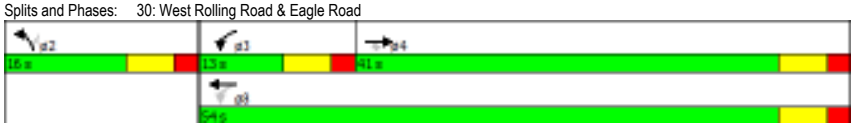
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.3 | | 10.7 | | 49.3 | | 10.7 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 42.0 | | 8.0 | | 42.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | | 12.3 | | 5.0 | | 2.5 | | 5.8 |
| Green Ext Time (p_c), s | | 5.4 | | 0.2 | | 5.5 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.9 |
| HCM 2010 LOS | A |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 254 | 33 | 57 | 473 | 264 | 347 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1295 | | | 737 | 539 | |
| Travel Time (s) | 29.4 | | | 16.8 | 12.3 | |
| Confl. Peds. (#/hr) | | | | | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 6% | 0% | 2% | 4% | 4% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 41.0 | 41.0 | 13.0 | 54.0 | 16.0 | 16.0 |
| Total Split (%) | 58.6% | 58.6% | 18.6% | 77.1% | 22.9% | 22.9% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 70 | |
| Actuated Cycle Length: 44 | |
| Natural Cycle: 55 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 30: West Rolling Road & Eagle Road








| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 254 | 33 | 57 | 473 | 264 | 347 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1732 | 1836 | 1764 | 1700 | 1627 | 1675 |
| Adj Flow Rate, veh/h | 292 | 38 | 66 | 544 | 303 | 399 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 6 | 0 | 4 | 4 | 4 | 1 |
| Cap, veh/h | 662 | 597 | 118 | 649 | 501 | 461 |
| Arrive On Green | 0.38 | 0.38 | 0.35 | 0.38 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1732 | 1561 | 1 | 1698 | 1549 | 1424 |
| Grp Volume(v), veh/h | 292 | 38 | 610 | 0 | 303 | 399 |
| Grp Sat Flow(s),veh/h/ln | 1732 | 1561 | 1700 | 0 | 1549 | 1424 |
| Q Serve(g_s), s | 4.3 | 0.5 | 5.7 | 0.0 | 5.6 | 9.0 |
| Cycle Q Clear(g_c), s | 4.3 | 0.5 | 5.7 | 0.0 | 5.6 | 9.0 |
| Prop In Lane | | 1.00 | 0.11 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 662 | 597 | 0 | 0 | 501 | 461 |
| V/C Ratio(X) | 0.44 | 0.06 | 0.00 | 0.00 | 0.60 | 0.87 |
| Avail Cap(c_a), veh/h | 1834 | 1652 | 0 | 0 | 501 | 461 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 7.8 | 6.6 | 0.0 | 0.0 | 9.7 | 10.8 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.0 | 2.1 | 15.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.8 | 0.4 | 0.0 | 0.0 | 4.8 | 9.3 |
| LnGrp Delay(d),s/veh | 8.3 | 6.7 | 0.0 | 0.0 | 11.7 | 26.6 |
| LnGrp LOS | A | A | | | B | C |
| Approach Vol, veh/h | 330 | | | 610 | 702 | |
| Approach Delay, s/veh | 8.1 | | | 0.0 | 20.2 | |
| Approach LOS | A | | | A | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 16.0 | | 18.0 | | | | 18.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 10.0 | | 35.0 | | | | 48.0 |
| Max Q Clear Time (g_c+I1), s | | 11.5 | | 6.8 | | | | 7.7 |
| Green Ext Time (p_c), s | | 0.0 | | 4.2 | | | | 4.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.3 |
| HCM 2010 LOS | B |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 893 | 1427 | 0 | 380 | 917 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1676 | 3287 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1676 | 3287 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 517 | | 565 | | | 405 |
| Travel Time (s) | 14.1 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 940 | 1502 | 0 | 400 | 965 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 59.0 | 61.0 | | 59.0 | 120.0 |
| Total Split (%) | | 49.2% | 50.8% | | 49.2% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 49.0 | 56.0 | | 49.0 | 120.0 |
| Actuated g/C Ratio | | 0.41 | 0.47 | | 0.41 | 1.00 |
| v/c Ratio | | 0.89 | 0.94 | | 0.58 | 0.29 |
| Control Delay | | 33.1 | 36.0 | | 24.5 | 0.2 |
| Queue Delay | | 0.6 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 33.6 | 36.0 | | 24.5 | 0.2 |
| LOS | | C | D | | C | A |
| Approach Delay | | | 36.0 | | | 7.3 |
| Approach LOS | | | D | | | A |
| Queue Length 50th (ft) | | 296 | 459 | | 245 | 0 |
| Queue Length 95th (ft) | | m293 | #741 | | 253 | 0 |
| Internal Link Dist (ft) | 437 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Base Capacity (vph) | | 1095 | 1600 | | 712 | 3287 |
| Starvation Cap Reductn | | 25 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.88 | 0.94 | | 0.56 | 0.29 |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 73 (61%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 25.1 Intersection LOS: C
Intersection Capacity Utilization 87.1% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 35 | 2494 | 57 | 52 | 1342 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 15% | 1% | 0% | 6% | 2% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 35 | 2494 | 57 | 52 | 1342 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 15 | 1 | 0 | 6 | 2 |
| Mvmt Flow | 0 | 39 | 2771 | 63 | 58 | 1491 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3664 | 1417 | 0 | 0 | 2834 | 0 |
| Stage 1 | 2803 | - | - | - | - | - |
| Stage 2 | 861 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7.3 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 3.1 | - | - | 2.5 | - |
| Pot Cap-1 Maneuver | 2 | 114 | - | - | 141 | - |
| Stage 1 | 23 | - | - | - | - | - |
| Stage 2 | 391 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 1 | 114 | - | - | 141 | - |
| Mov Cap-2 Maneuver | 1 | - | - | - | - | - |
| Stage 1 | 23 | - | - | - | - | - |
| Stage 2 | 230 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 52.1 | 0 | 1.8 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 114 | 141 | - |
| HCM Lane V/C Ratio | - | - | 0.341 | 0.41 | - |
| HCM Control Delay (s) | - | - | 52.1 | 47.2 | - |
| HCM Lane LOS | - | - | F | E | - |
| HCM 95th %tile Q(veh) | - | - | 1.4 | 1.8 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 9 | 108 | 1043 | 31 | 195 | 311 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 18% | 25% | 0% | 2% | 7% | 5% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 9 | 108 | 1043 | 31 | 195 | 311 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 18 | 25 | 0 | 2 | 7 | 5 |
| Mvmt Flow | 9 | 110 | 1064 | 32 | 199 | 317 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1779 | 1064 | 0 | 0 | 1064 | 0 |
| Stage 1 | 1064 | - | - | - | - | - |
| Stage 2 | 715 | - | - | - | - | - |
| Critical Hdwy | 6.18 | 6.25 | - | - | 4 | - |
| Critical Hdwy Stg 1 | 5.18 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.18 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.3 | - | - | 3.1 | - |
| Pot Cap-1 Maneuver | 109 | 269 | - | - | 544 | - |
| Stage 1 | 391 | - | - | - | - | - |
| Stage 2 | 569 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 61 | 269 | - | - | 544 | - |
| Mov Cap-2 Maneuver | 187 | - | - | - | - | - |
| Stage 1 | 391 | - | - | - | - | - |
| Stage 2 | 316 | - | - | - | - | - |

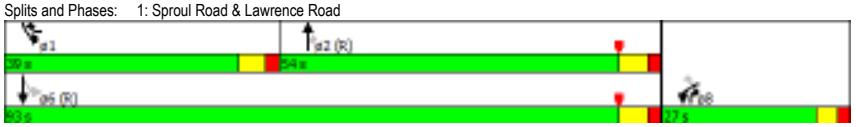
| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 27.2 | 0 | 5.9 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 187 | 269 | 544 | - |
| HCM Lane V/C Ratio | - | - | 0.049 | 0.41 | 0.366 | - |
| HCM Control Delay (s) | - | - | 25.2 | 27.4 | 15.4 | 0 |
| HCM Lane LOS | - | - | D | D | C | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 1.9 | 1.7 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 563 | 600 | 1318 | 482 | 552 | 1690 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 328 | | 389 | | | 1061 |
| Travel Time (s) | 5.0 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 27.0 | 39.0 | 54.0 | 27.0 | 39.0 | 93.0 |
| Total Split (%) | 22.5% | 32.5% | 45.0% | 22.5% | 32.5% | 77.5% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 98 (82%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 563 | 600 | 1318 | 482 | 552 | 1690 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 3 | 0 | 3 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1816 | 1773 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 586 | 563 | 1373 | 418 | 575 | 1760 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 618 | 733 | 1376 | 941 | 570 | 2634 |
| Arrive On Green | 0.19 | 0.19 | 0.82 | 0.82 | 0.28 | 0.73 |
| Sat Flow, veh/h | 3227 | 1544 | 3458 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 586 | 563 | 1373 | 418 | 575 | 1760 |
| Grp Sat Flow(s),veh/h/ln | 1613 | 1544 | 1685 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 21.5 | 23.0 | 48.5 | 8.5 | 34.0 | 30.7 |
| Cycle Q Clear(g_c), s | 21.5 | 23.0 | 48.5 | 8.5 | 34.0 | 30.7 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 618 | 733 | 1376 | 941 | 570 | 2634 |
| V/C Ratio(X) | 0.95 | 0.77 | 1.00 | 0.44 | 1.01 | 0.67 |
| Avail Cap(c_a), veh/h | 618 | 733 | 1376 | 941 | 571 | 2634 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.74 | 0.74 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.1 | 26.0 | 11.0 | 3.5 | 37.6 | 8.4 |
| Incr Delay (d2), s/veh | 23.9 | 4.9 | 20.4 | 1.1 | 39.8 | 1.4 |
| Initial Q Delay(d3),s/veh | 3.2 | 0.0 | 6.9 | 0.0 | 30.8 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 17.8 | 23.0 | 33.3 | 8.7 | 50.3 | 21.8 |
| LnGrp Delay(d),s/veh | 75.3 | 31.0 | 38.4 | 4.6 | 108.2 | 9.7 |
| LnGrp LOS | E | C | D | A | F | A |
| Approach Vol, veh/h | 1149 | | 1791 | | | 2335 |
| Approach Delay, s/veh | 53.6 | | 30.5 | | | 34.0 |
| Approach LOS | D | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 39.0 | 54.0 | | | | 93.0 | | 27.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 33.0 | 48.0 | | | | 87.0 | | 22.0 |
| Max Q Clear Time (g_c+I1), s | 36.5 | 51.0 | | | | 33.2 | | 25.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | | | 35.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.1 |
| HCM 2010 LOS | D |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 23 | 21 | 45 | 259 | 14 | 221 | 41 | 1531 | 132 | 196 | 2189 | 20 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 633 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 10.8 | | | 6.6 | |
| Confl. Peds. (#/hr) | | | | 14 | | 14 | 2 | | 2 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 8.0 | 8.0 | 41.0 | | 8.0 | 41.0 | |
| Total Split (%) | 18.3% | 18.3% | | 18.3% | 18.3% | 13.3% | 13.3% | 68.3% | | 13.3% | 68.3% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 21 | 45 | 259 | 14 | 221 | 41 | 1531 | 132 | 196 | 2189 | 20 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 |
| Ped-Bike Adj(A_pbT) | 0.98 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1764 | 1800 | 1764 | 1764 | 1747 | 1764 | 1748 | 1835 | 1800 | 1854 | 1800 |
| Adj Flow Rate, veh/h | 23 | 21 | 45 | 264 | 14 | 208 | 42 | 1562 | 0 | 200 | 2234 | 19 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 76 | 18 | 18 | 246 | 7 | 241 | 193 | 2800 | 0 | 425 | 2243 | 12 |
| Arrive On Green | 0.08 | 0.10 | 0.08 | 0.08 | 0.10 | 0.10 | 0.08 | 1.00 | 0.00 | 0.13 | 1.00 | 1.00 |
| Sat Flow, veh/h | 0 | 180 | 184 | 1289 | 68 | 1422 | 1680 | 4859 | 0 | 1714 | 3579 | 30 |
| Grp Volume(v), veh/h | 89 | 0 | 0 | 278 | 0 | 208 | 42 | 1562 | 0 | 200 | 1098 | 1155 |
| Grp Sat Flow(s),veh/h/ln | 364 | 0 | 0 | 1358 | 0 | 1422 | 1680 | 1556 | 0 | 1714 | 1761 | 1848 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.5 | 0.0 | 0.0 | 2.8 | 0.0 | 34.0 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 | 6.0 | 0.5 | 0.0 | 0.0 | 2.8 | 0.0 | 34.0 |
| Prop In Lane | 0.26 | | 0.51 | 0.95 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 106 | 0 | 0 | 230 | 0 | 241 | 193 | 2800 | 0 | 425 | 1100 | 1155 |
| V/C Ratio(X) | 0.84 | 0.00 | 0.00 | 1.21 | 0.00 | 0.86 | 0.22 | 0.56 | 0.00 | 0.47 | 1.00 | 1.00 |
| Avail Cap(c_a), veh/h | 106 | 0 | 0 | 230 | 0 | 241 | 242 | 2800 | 0 | 425 | 1100 | 1154 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.59 | 0.59 | 0.59 |
| Uniform Delay (d), s/veh | 27.9 | 0.0 | 0.0 | 28.3 | 0.0 | 24.4 | 14.0 | 0.0 | 0.0 | 3.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 42.4 | 0.0 | 0.0 | 127.1 | 0.0 | 25.9 | 0.6 | 0.8 | 0.0 | 0.5 | 20.4 | 20.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 5.7 | 6.2 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 0.0 | 0.0 | 21.5 | 0.0 | 8.8 | 0.8 | 0.4 | 0.0 | 2.6 | 11.1 | 11.7 |
| LnGrp Delay(d),s/veh | 70.3 | 0.0 | 0.0 | 155.4 | 0.0 | 50.3 | 14.5 | 0.8 | 0.0 | 4.6 | 26.1 | 26.5 |
| LnGrp LOS | E | | | F | | D | B | A | | A | C | C |
| Approach Vol, veh/h | | 89 | | | 486 | | | 1604 | | | 2453 | |
| Approach Delay, s/veh | | 70.3 | | | 110.4 | | | 1.2 | | | 24.6 | |
| Approach LOS | | E | | | F | | | A | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.0 | 41.0 | | 11.0 | 6.5 | 42.5 | | 11.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 35.0 | | 5.0 | 3.0 | 35.0 | | 5.0 |
| Max Q Clear Time (g_c+I1), s | 5.3 | 2.5 | | 7.0 | 3.0 | 36.0 | | 8.5 |
| Green Ext Time (p_c), s | 0.0 | 26.9 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.3 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 210 | 170 | 56 | 157 | 146 | 13 | 75 | 1141 | 62 | 4 | 1471 | 208 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 3% | 0% | 0% | 4% | 1% | 3% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | | 36.0 | 36.0 | | 36.0 | 36.0 | |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | | 60.0% | 60.0% | | 60.0% | 60.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | 0.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 6.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 10: Sproul Road & Old Marple Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 210 | 170 | 56 | 157 | 146 | 13 | 75 | 1141 | 62 | 4 | 1471 | 208 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1882 | 1818 | 1782 | 1756 | 1782 | 1705 | 1754 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 219 | 177 | 46 | 164 | 152 | 11 | 78 | 1189 | 53 | 4 | 1532 | 188 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 324 | 187 | 464 | 274 | 217 | 14 | 123 | 1679 | 75 | 213 | 1601 | 189 |
| Arrive On Green | 0.30 | 0.32 | 0.30 | 0.30 | 0.32 | 0.30 | 0.50 | 0.52 | 0.50 | 0.50 | 0.52 | 0.50 |
| Sat Flow, veh/h | 730 | 590 | 1545 | 582 | 686 | 44 | 258 | 3249 | 145 | 438 | 3087 | 374 |
| Grp Volume(v), veh/h | 396 | 0 | 46 | 327 | 0 | 0 | 78 | 609 | 633 | 4 | 845 | 875 |
| Grp Sat Flow(s),veh/h/ln | 1321 | 0 | 1545 | 1312 | 0 | 0 | 258 | 1666 | 1728 | 438 | 1718 | 1743 |
| Q Serve(g_s), s | 4.3 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.7 | 16.7 | 16.8 | 0.4 | 28.0 | 29.3 |
| Cycle Q Clear(g_c), s | 18.0 | 0.0 | 1.3 | 13.7 | 0.0 | 0.0 | 30.0 | 16.7 | 16.8 | 17.7 | 28.0 | 29.3 |
| Prop In Lane | 0.55 | | 1.00 | 0.50 | | 0.03 | 1.00 | | 0.08 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 489 | 0 | 464 | 484 | 0 | 0 | 123 | 861 | 893 | 213 | 888 | 901 |
| V/C Ratio(X) | 0.81 | 0.00 | 0.10 | 0.68 | 0.00 | 0.00 | 0.63 | 0.71 | 0.71 | 0.02 | 0.95 | 0.97 |
| Avail Cap(c_a), veh/h | 489 | 0 | 464 | 484 | 0 | 0 | 123 | 861 | 893 | 213 | 888 | 900 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.6 | 0.0 | 15.2 | 18.7 | 0.0 | 0.0 | 30.0 | 11.0 | 11.1 | 18.8 | 13.8 | 14.2 |
| Incr Delay (d2), s/veh | 9.8 | 0.0 | 0.1 | 3.7 | 0.0 | 0.0 | 22.4 | 4.9 | 4.7 | 0.2 | 20.5 | 23.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 12.6 | 0.0 | 1.0 | 9.5 | 0.0 | 0.0 | 3.7 | 13.6 | 14.0 | 0.1 | 25.3 | 27.2 |
| LnGrp Delay(d),s/veh | 30.5 | 0.0 | 15.2 | 22.4 | 0.0 | 0.0 | 52.3 | 15.9 | 15.8 | 18.9 | 34.3 | 38.1 |
| LnGrp LOS | C | | B | C | | | D | B | B | B | C | D |
| Approach Vol, veh/h | | 442 | | | 327 | | | 1320 | | | 1724 | |
| Approach Delay, s/veh | | 28.9 | | | 22.4 | | | 18.0 | | | 36.2 | |
| Approach LOS | | C | | | C | | | B | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 36.0 | | 24.0 | | 36.0 | | 24.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 30.0 | | 18.0 | | 30.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 32.0 | | 20.0 | | 31.3 | | 15.7 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 0.8 |

**Intersection Summary**

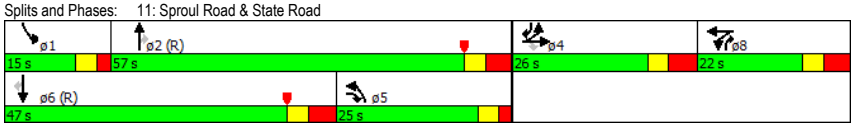
HCM 2010 Ctrl Delay 27.9
HCM 2010 LOS C

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 433 | 88 | 752 | 322 | 160 | 73 | 325 | 780 | 326 | 95 | 1139 | 544 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 17 | | 17 | 2 | | 2 | 1 | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 5% | 1% | 1% | 3% | 0% | 1% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 40% | | | 14% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 26.0 | 26.0 | 25.0 | 22.0 | 22.0 | | 25.0 | 57.0 | 22.0 | 15.0 | 47.0 | 26.0 |
| Total Split (%) | 21.7% | 21.7% | 20.8% | 18.3% | 18.3% | | 20.8% | 47.5% | 18.3% | 12.5% | 39.2% | 21.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 433 | 88 | 752 | 322 | 160 | 73 | 325 | 780 | 326 | 95 | 1139 | 544 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1820 | 1844 | 1872 | 1856 | 1818 | 1782 | 1782 | 1800 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 511 | 0 | 0 | 248 | 282 | 0 | 335 | 804 | 0 | 98 | 1174 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 1 | 5 | 1 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 585 | 0 | 1016 | 238 | 247 | 0 | 817 | 2581 | 1363 | 141 | 1157 | 770 |
| Arrive On Green | 0.17 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.49 | 0.76 | 0.00 | 0.08 | 0.34 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 3386 | 1530 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 511 | 0 | 0 | 248 | 282 | 0 | 335 | 804 | 0 | 98 | 1174 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1568 | 1783 | 1856 | 0 | 1697 | 1693 | 1530 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 16.0 | 16.0 | 0.0 | 15.2 | 8.9 | 0.0 | 6.7 | 41.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 16.0 | 16.0 | 0.0 | 15.2 | 8.9 | 0.0 | 6.7 | 41.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 585 | 0 | 1016 | 238 | 247 | 0 | 817 | 2581 | 1363 | 141 | 1157 | 770 |
| V/C Ratio(X) | 0.87 | 0.00 | 0.00 | 1.04 | 1.14 | 0.00 | 0.41 | 0.31 | 0.00 | 0.70 | 1.01 | 0.00 |
| Avail Cap(c_a), veh/h | 585 | 0 | 1023 | 238 | 247 | 0 | 825 | 2582 | 1370 | 157 | 1157 | 770 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 48.8 | 0.0 | 0.0 | 52.0 | 52.0 | 0.0 | 20.1 | 4.5 | 0.0 | 53.6 | 39.5 | 0.0 |
| Incr Delay (d2), s/veh | 13.6 | 0.0 | 0.0 | 70.1 | 100.2 | 0.0 | 0.3 | 0.3 | 0.0 | 11.1 | 30.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.5 | 0.0 | 0.0 | 22.5 | 27.1 | 0.0 | 11.6 | 7.9 | 0.0 | 6.5 | 46.1 | 0.0 |
| LnGrp Delay(d),s/veh | 62.6 | 0.0 | 0.0 | 122.1 | 152.2 | 0.0 | 20.4 | 4.8 | 0.0 | 64.8 | 87.9 | 0.0 |
| LnGrp LOS | E | | | F | F | | C | A | | E | F | |
| Approach Vol, veh/h | | 511 | | | 530 | | | 1139 | | | 1272 | |
| Approach Delay, s/veh | | 62.6 | | | 138.1 | | | 9.4 | | | 86.1 | |
| Approach LOS | | E | | | F | | | A | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.8 | 97.5 | | 26.0 | 64.4 | 47.0 | | 22.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | | 19.0 | 20.0 | * 40 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 11.4 | | 19.5 | 17.7 | 43.5 | | 18.5 |
| Green Ext Time (p_c), s | 0.0 | 5.3 | | 0.0 | 0.4 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 65.3
HCM 2010 LOS E

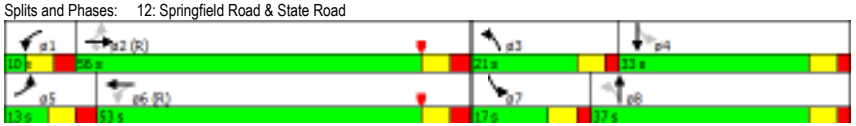
**Notes**

User approved volume balancing among the lanes for turning movement.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 186 | 1459 | 543 | 38 | 1252 | 121 | 368 | 453 | 43 | 280 | 494 | 62 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | | | | 24 | | 24 | | | | | | |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 3% | 1% | 1% | 1% | 1% | 0% | 1% | 1% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | | 21.0 | 37.0 | | 17.0 | 33.0 | |
| Total Split (%) | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | | 17.5% | 30.8% | | 14.2% | 27.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 140 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 186 | 1459 | 543 | 38 | 1252 | 121 | 368 | 453 | 43 | 280 | 494 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 4 | 3 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1695 | 1729 | 1746 | 1791 | 1793 | 1809 | 1809 | 1807 | 1827 |
| Adj Flow Rate, veh/h | 188 | 1474 | 0 | 38 | 1265 | 0 | 372 | 458 | 0 | 283 | 499 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 162 | 1453 | 650 | 114 | 1286 | 0 | 287 | 478 | 0 | 232 | 422 | 0 |
| Arrive On Green | 0.06 | 0.42 | 0.00 | 0.03 | 0.39 | 0.00 | 0.13 | 0.27 | 0.00 | 0.10 | 0.23 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1614 | 3371 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Grp Volume(v), veh/h | 188 | 1474 | 0 | 38 | 1265 | 0 | 372 | 458 | 0 | 283 | 499 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1614 | 1642 | 0 | 1706 | 1793 | 0 | 1723 | 1807 | 0 |
| Q Serve(g_s), s | 7.0 | 50.0 | 0.0 | 1.7 | 45.7 | 0.0 | 16.0 | 30.2 | 0.0 | 12.0 | 28.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.0 | 50.0 | 0.0 | 1.7 | 45.7 | 0.0 | 16.0 | 30.2 | 0.0 | 12.0 | 28.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 162 | 1453 | 650 | 114 | 1286 | 0 | 287 | 478 | 0 | 232 | 422 | 0 |
| V/C Ratio(X) | 1.16 | 1.01 | 0.00 | 0.33 | 0.98 | 0.00 | 1.29 | 0.96 | 0.00 | 1.22 | 1.18 | 0.00 |
| Avail Cap(c_a), veh/h | 167 | 1453 | 650 | 114 | 1286 | 0 | 287 | 478 | 0 | 246 | 422 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.19 | 0.19 | 0.00 |
| Uniform Delay (d), s/veh | 30.8 | 35.0 | 0.0 | 29.5 | 36.2 | 0.0 | 34.8 | 43.6 | 0.0 | 34.8 | 46.0 | 0.0 |
| Incr Delay (d2), s/veh | 120.5 | 27.2 | 0.0 | 1.7 | 21.4 | 0.0 | 155.8 | 30.6 | 0.0 | 105.7 | 87.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 72.8 | 7.3 | 0.0 | 0.0 | 0.3 | 0.0 | 19.1 | 3.0 | 0.0 | 0.0 | 14.3 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 23.4 | 54.6 | 0.0 | 1.4 | 32.8 | 0.0 | 41.5 | 26.9 | 0.0 | 12.3 | 45.5 | 0.0 |
| LnGrp Delay(d),s/veh | 224.0 | 69.4 | 0.0 | 31.2 | 57.9 | 0.0 | 209.7 | 77.3 | 0.0 | 140.5 | 147.7 | 0.0 |
| LnGrp LOS | F | F | | C | E | | F | E | | F | F | |
| Approach Vol, veh/h | | 1662 | | | 1303 | | | 830 | | | 782 | |
| Approach Delay, s/veh | | 86.9 | | | 57.1 | | | 136.6 | | | 145.1 | |
| Approach LOS | | F | | | E | | | F | | | F | |

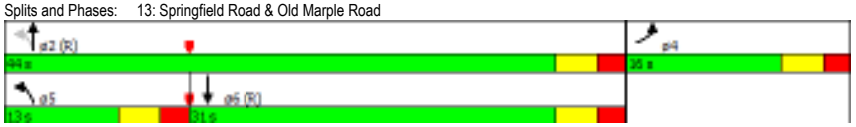
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 56.0 | 21.0 | 33.0 | 13.0 | 53.0 | 17.0 | 37.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 49.0 | 15.0 | 27.0 | 6.0 | 46.0 | 11.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 52.5 | 18.5 | 30.5 | 9.5 | 48.2 | 14.5 | 32.7 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 97.4 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 124 | 106 | 26 | 709 | 804 | 283 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 10 | 12 | 12 | 11 | 11 | 12 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 552 | |
| Travel Time (s) | 10.6 | | | 23.1 | 15.1 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | | 4.0 | 4.0 | 4.0 | |
| Minimum Split (s) | 21.0 | | 9.0 | 21.0 | 21.0 | |
| Total Split (s) | 16.0 | | 13.0 | 44.0 | 31.0 | |
| Total Split (%) | 26.7% | | 21.7% | 73.3% | 51.7% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 13: Springfield Road & Old Marple Road








| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 124 | 106 | 26 | 709 | 804 | 283 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1790 | 1800 | 1800 | 1799 | 1791 | 1809 |
| Adj Flow Rate, veh/h | 127 | 108 | 27 | 723 | 820 | 289 |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Cap, veh/h | 168 | 143 | 62 | 638 | 852 | 300 |
| Arrive On Green | 0.19 | 0.18 | 1.00 | 1.00 | 0.67 | 0.66 |
| Sat Flow, veh/h | 870 | 740 | 0 | 948 | 1266 | 446 |
| Grp Volume(v), veh/h | 236 | 0 | 750 | 0 | 0 | 1109 |
| Grp Sat Flow(s),veh/h/ln | 1616 | 0 | 948 | 0 | 0 | 1712 |
| Q Serve(g_s), s | 8.3 | 0.0 | 17.7 | 0.0 | 0.0 | 36.1 |
| Cycle Q Clear(g_c), s | 8.3 | 0.0 | 17.7 | 0.0 | 0.0 | 36.1 |
| Prop In Lane | 0.54 | 0.46 | 0.04 | | | 0.26 |
| Lane Grp Cap(c), veh/h | 313 | 0 | 0 | 0 | 0 | 1153 |
| V/C Ratio(X) | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.96 |
| Avail Cap(c_a), veh/h | 323 | 0 | 0 | 0 | 0 | 1153 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.61 |
| Uniform Delay (d), s/veh | 23.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.2 |
| Incr Delay (d2), s/veh | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 13.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 26.8 |
| LnGrp Delay(d),s/veh | 32.5 | 0.0 | 0.0 | 0.0 | 0.0 | 22.7 |
| LnGrp LOS | C | | | | | C |
| Approach Vol, veh/h | 236 | | | 750 | 1109 | |
| Approach Delay, s/veh | 32.5 | | | 0.0 | 22.7 | |
| Approach LOS | C | | | A | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 44.4 | | 15.6 | | 44.4 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 39.0 | | 11.0 | | 26.0 | | |
| Max Q Clear Time (g_c+I1), s | | 19.7 | | 10.8 | | 38.1 | | |
| Green Ext Time (p_c), s | | 10.6 | | 0.0 | | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.7 |
| HCM 2010 LOS | B |

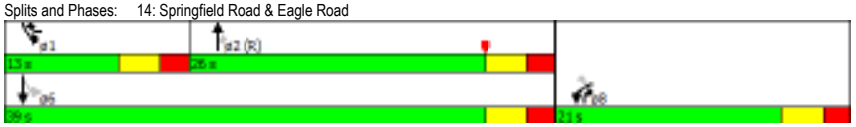
Notes

User approved volume balancing among the lanes for turning movement.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 390 | 88 | 474 | 379 | 217 | 620 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 503 | | 552 | | | 504 |
| Travel Time (s) | 9.8 | | 15.1 | | | 13.7 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 10.0 | 9.0 | 8.0 | 10.0 | 9.0 |
| Total Split (s) | 21.0 | 13.0 | 26.0 | 21.0 | 13.0 | 39.0 |
| Total Split (%) | 35.0% | 21.7% | 43.3% | 35.0% | 21.7% | 65.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 41 (68%), Referenced to phase 2:NBT, Start of Yellow | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 390 | 88 | 474 | 379 | 217 | 620 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1881 | 1881 | 1756 | 1863 | 1791 | 1791 |
| Adj Flow Rate, veh/h | 411 | 75 | 499 | 352 | 228 | 653 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 0 | 1 | 1 |
| Cap, veh/h | 495 | 641 | 701 | 1069 | 498 | 1057 |
| Arrive On Green | 0.28 | 0.28 | 0.80 | 0.80 | 0.12 | 0.59 |
| Sat Flow, veh/h | 1792 | 1599 | 1756 | 1583 | 1706 | 1791 |
| Grp Volume(v), veh/h | 411 | 75 | 499 | 352 | 228 | 653 |
| Grp Sat Flow(s),veh/h/ln | 1792 | 1599 | 1756 | 1583 | 1706 | 1791 |
| Q Serve(g_s), s | 12.9 | 1.8 | 7.9 | 2.6 | 4.0 | 14.1 |
| Cycle Q Clear(g_c), s | 12.9 | 1.8 | 7.9 | 2.6 | 4.0 | 14.1 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 495 | 641 | 701 | 1069 | 498 | 1057 |
| V/C Ratio(X) | 0.83 | 0.12 | 0.71 | 0.33 | 0.46 | 0.62 |
| Avail Cap(c_a), veh/h | 508 | 652 | 701 | 1069 | 542 | 1058 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.55 | 0.55 | 0.09 | 0.09 |
| Uniform Delay (d), s/veh | 20.5 | 11.3 | 4.4 | 1.2 | 8.0 | 7.9 |
| Incr Delay (d2), s/veh | 10.9 | 0.1 | 3.4 | 0.5 | 0.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.6 | 1.4 | 6.4 | 3.8 | 2.5 | 8.3 |
| LnGrp Delay(d),s/veh | 31.5 | 11.4 | 7.9 | 1.7 | 8.0 | 8.2 |
| LnGrp LOS | C | B | A | A | A | A |
| Approach Vol, veh/h | 486 | | 851 | | | 881 |
| Approach Delay, s/veh | 28.4 | | 5.3 | | | 8.1 |
| Approach LOS | C | | A | | | A |

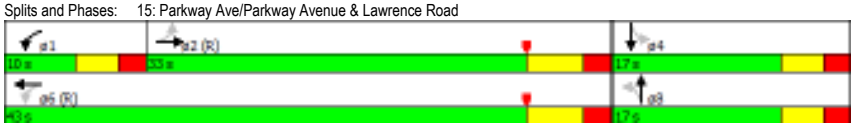
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.5 | 28.0 | | | | 39.4 | | 20.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 21.0 | | | | 34.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 6.5 | 10.4 | | | | 16.6 | | 15.4 |
| Green Ext Time (p_c), s | 0.1 | 4.8 | | | | 6.2 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 688 | 236 | 418 | 869 | 5 | 270 | 23 | 273 | 6 | 40 | 33 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 413 | | | 911 | | | 578 | | | 466 | |
| Travel Time (s) | | 6.3 | | | 13.8 | | | 15.8 | | | 12.7 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 2% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 33.0 | 33.0 | | 10.0 | 43.0 | | 17.0 | 17.0 | | 17.0 | 17.0 | |
| Total Split (%) | 55.0% | 55.0% | | 16.7% | 71.7% | | 28.3% | 28.3% | | 28.3% | 28.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 2 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 688 | 236 | 418 | 869 | 5 | 270 | 23 | 273 | 6 | 40 | 33 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1791 | 1791 | 1791 | 1762 | 1791 | 1755 | 1741 | 1773 | 1827 | 1810 | 1827 |
| Adj Flow Rate, veh/h | 30 | 709 | 234 | 431 | 896 | 5 | 278 | 24 | 186 | 6 | 41 | 25 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 77 | 1286 | 488 | 123 | 1009 | 6 | 403 | 37 | 289 | 75 | 227 | 126 |
| Arrive On Green | 0.62 | 0.63 | 0.62 | 0.62 | 0.63 | 0.62 | 0.22 | 0.22 | 0.20 | 0.20 | 0.22 | 0.20 |
| Sat Flow, veh/h | 22 | 2030 | 770 | 4 | 1593 | 9 | 1253 | 172 | 1334 | 47 | 1049 | 583 |
| Grp Volume(v), veh/h | 519 | 0 | 454 | 431 | 0 | 901 | 278 | 0 | 210 | 72 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1328 | 0 | 1494 | 4 | 0 | 1602 | 1253 | 0 | 1506 | 1679 | 0 | 0 |
| Q Serve(g_s), s | 4.3 | 0.0 | 9.8 | 60.0 | 0.0 | 28.3 | 11.1 | 0.0 | 7.7 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 32.6 | 0.0 | 9.8 | 60.0 | 0.0 | 28.3 | 12.7 | 0.0 | 7.7 | 2.1 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.52 | 1.00 | | 0.01 | 1.00 | | 0.89 | 0.08 | | 0.35 |
| Lane Grp Cap(c), veh/h | 883 | 0 | 946 | 0 | 0 | 1015 | 403 | 0 | 326 | 401 | 0 | 0 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.48 | 0.00 | 0.00 | 0.89 | 0.69 | 0.00 | 0.64 | 0.18 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 883 | 0 | 946 | 0 | 0 | 1015 | 403 | 0 | 326 | 401 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.88 | 0.00 | 0.88 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 6.7 | 0.0 | 6.0 | 0.0 | 0.0 | 9.2 | 23.2 | 0.0 | 21.8 | 19.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 2.9 | 0.0 | 1.7 | 0.0 | 0.0 | 11.5 | 4.4 | 0.0 | 3.8 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.2 | 0.0 | 7.9 | 0.0 | 0.0 | 21.6 | 8.5 | 0.0 | 6.3 | 1.9 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 9.5 | 0.0 | 7.7 | 0.0 | 0.0 | 20.7 | 27.5 | 0.0 | 25.6 | 19.6 | 0.0 | 0.0 |
| LnGrp LOS | A | | A | | | C | C | | C | B | | |
| Approach Vol, veh/h | | 973 | | | 1332 | | | 488 | | | 72 | |
| Approach Delay, s/veh | | 8.7 | | | 14.0 | | | 26.7 | | | 19.6 | |
| Approach LOS | | A | | | B | | | C | | | B | |

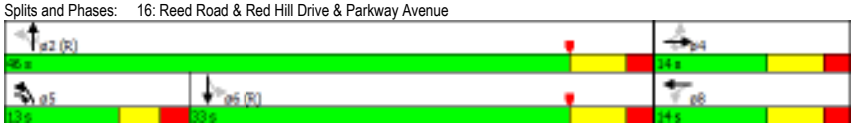
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.0 | | 17.0 | | 43.0 | | 17.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 12.0 | | 37.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | | 34.6 | | 4.1 | | 62.0 | | 15.2 |
| Green Ext Time (p_c), s | | 0.0 | | 1.6 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 62 | 145 | 363 | 38 | 63 | 11 | 379 | 438 | 66 | 5 | 634 | 69 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Confl. Peds. (#/hr) | 2 | | 2 | 3 | | 3 | | | | 2 | | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 5% | 0% | 3% | 0% | 5% | 3% | 0% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 14.0 | 14.0 | 13.0 | 14.0 | 14.0 | | 13.0 | 46.0 | 46.0 | 33.0 | 33.0 | |
| Total Split (%) | 23.3% | 23.3% | 21.7% | 23.3% | 23.3% | | 21.7% | 76.7% | 76.7% | 55.0% | 55.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 19 (32%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 62 | 145 | 363 | 38 | 63 | 11 | 379 | 438 | 66 | 5 | 634 | 69 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1764 | 1747 | 1799 | 1836 | 1786 | 1836 | 1713 | 1764 | 1680 | 1836 | 1903 | 1836 |
| Adj Flow Rate, veh/h | 65 | 153 | 320 | 40 | 66 | 11 | 399 | 461 | 63 | 5 | 667 | 69 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 0 | 1 | 2 | 5 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 0 |
| Cap, veh/h | 252 | 262 | 457 | 100 | 94 | 12 | 542 | 1205 | 976 | 62 | 793 | 79 |
| Arrive On Green | 0.04 | 0.05 | 0.05 | 0.13 | 0.15 | 0.13 | 0.15 | 0.68 | 0.68 | 0.45 | 0.47 | 0.45 |
| Sat Flow, veh/h | 1241 | 1747 | 1519 | 131 | 635 | 80 | 1631 | 1764 | 1428 | 3 | 1692 | 174 |
| Grp Volume(v), veh/h | 65 | 153 | 320 | 117 | 0 | 0 | 399 | 461 | 63 | 741 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1241 | 1747 | 1519 | 846 | 0 | 0 | 1631 | 1764 | 1428 | 1869 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 5.1 | 9.0 | 2.4 | 0.0 | 0.0 | 6.6 | 6.7 | 0.9 | 1.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 3.8 | 5.1 | 9.0 | 8.0 | 0.0 | 0.0 | 6.6 | 6.7 | 0.9 | 21.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.34 | | 0.09 | 1.00 | | 1.00 | 0.01 | | 0.09 |
| Lane Grp Cap(c), veh/h | 252 | 262 | 457 | 192 | 0 | 0 | 542 | 1205 | 976 | 902 | 0 | 0 |
| V/C Ratio(X) | 0.26 | 0.58 | 0.70 | 0.61 | 0.00 | 0.00 | 0.74 | 0.38 | 0.06 | 0.82 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 252 | 262 | 457 | 193 | 0 | 0 | 546 | 1205 | 976 | 901 | 0 | 0 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 26.7 | 26.7 | 20.8 | 25.1 | 0.0 | 0.0 | 6.9 | 4.1 | 3.1 | 14.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 3.3 | 4.7 | 5.4 | 0.0 | 0.0 | 5.1 | 0.9 | 0.1 | 8.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.0 | 4.9 | 9.1 | 4.0 | 0.0 | 0.0 | 6.8 | 6.3 | 0.7 | 19.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 27.2 | 30.0 | 25.9 | 30.6 | 0.0 | 0.0 | 12.0 | 5.0 | 3.3 | 22.9 | 0.0 | 0.0 |
| LnGrp LOS | C | C | C | C | | | B | A | A | C | | |
| Approach Vol, veh/h | | 538 | | | 117 | | | 923 | | | 741 | |
| Approach Delay, s/veh | | 27.2 | | | 30.6 | | | 7.9 | | | 22.9 | |
| Approach LOS | | C | | | C | | | A | | | C | |

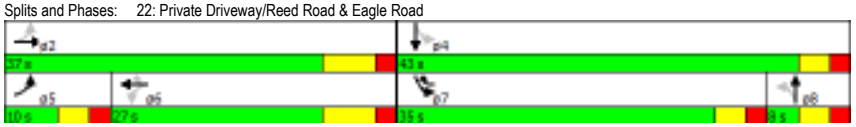
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.0 | | 14.0 | 13.0 | 33.0 | | 14.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 40.0 | | 8.0 | 8.0 | 27.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | | 9.2 | | 11.5 | 9.1 | 23.5 | | 10.0 |
| Green Ext Time (p_c), s | | 6.2 | | 0.0 | 0.0 | 1.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 174 | 406 | 0 | 1 | 305 | 481 | 0 | 0 | 0 | 715 | 1 | 470 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 15 | 12 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Confl. Peds. (#/hr) | | | | 1 | | 1 | | | | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 1% | 0% | 1% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 1% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | Perm | NA | pm+ov | | | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 8.0 | 8.0 | 8.0 | | 8.0 | 12.0 | |
| Total Split (s) | 10.0 | 37.0 | | 27.0 | 27.0 | 35.0 | 8.0 | 8.0 | | 35.0 | 43.0 | |
| Total Split (%) | 12.5% | 46.3% | | 33.8% | 33.8% | 43.8% | 10.0% | 10.0% | | 43.8% | 53.8% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 71.4 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 174 | 406 | 0 | 1 | 305 | 481 | 0 | 0 | 0 | 715 | 1 | 470 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1890 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1755 | 1844 | 1773 |
| Adj Flow Rate, veh/h | 181 | 423 | 0 | 1 | 318 | 416 | 0 | 0 | 0 | 745 | 1 | 455 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| Cap, veh/h | 314 | 774 | 0 | 52 | 461 | 1045 | 0 | 8 | 0 | 845 | 44 | 687 |
| Arrive On Green | 0.09 | 0.41 | 0.00 | 0.25 | 0.27 | 0.27 | 0.00 | 0.00 | 0.00 | 0.45 | 0.45 | 0.45 |
| Sat Flow, veh/h | 1782 | 1890 | 0 | 1 | 1727 | 1467 | 0 | -76003 | 0 | 1672 | 3 | 1564 |
| Grp Volume(v), veh/h | 181 | 423 | 0 | 319 | 0 | 416 | 0 | 0 | 0 | 745 | 0 | 456 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1890 | 0 | 1728 | 0 | 1467 | 0 | 1900 | 0 | 1672 | 0 | 1568 |
| Q Serve(g_s), s | 4.8 | 11.8 | 0.0 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 | 30.9 | 0.0 | 15.8 |
| Cycle Q Clear(g_c), s | 4.8 | 11.8 | 0.0 | 11.7 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 | 30.9 | 0.0 | 15.8 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 314 | 774 | 0 | 488 | 0 | 1045 | 0 | 8 | 0 | 845 | 0 | 702 |
| V/C Ratio(X) | 0.58 | 0.55 | 0.00 | 0.65 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.88 | 0.00 | 0.65 |
| Avail Cap(c_a), veh/h | 334 | 842 | 0 | 548 | 0 | 1097 | 0 | 109 | 0 | 848 | 0 | 879 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.7 | 15.8 | 0.0 | 23.2 | 0.0 | 4.2 | 0.0 | 0.0 | 0.0 | 19.3 | 0.0 | 15.2 |
| Incr Delay (d2), s/veh | 2.2 | 1.0 | 0.0 | 3.2 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 10.7 | 0.0 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.7 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| %ile BackOfQ(95%),veh/ln | 4.9 | 10.6 | 0.0 | 10.3 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 11.8 |
| LnGrp Delay(d),s/veh | 20.6 | 16.8 | 0.0 | 26.5 | 0.0 | 4.6 | 0.0 | 0.0 | 0.0 | 30.0 | 0.0 | 16.5 |
| LnGrp LOS | C | B | | C | | A | | | | C | | B |
| Approach Vol, veh/h | | 604 | | | 735 | | | 0 | | | 1201 | |
| Approach Delay, s/veh | | 18.0 | | | 14.1 | | | 0.0 | | | 24.9 | |
| Approach LOS | | B | | | B | | | | | | C | |

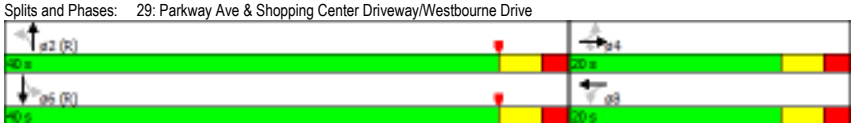
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 34.6 | | 35.0 | 10.0 | 24.6 | 35.0 | 0.0 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 30.0 | | 38.0 | 5.0 | 20.0 | 30.0 | 3.0 |
| Max Q Clear Time (g_c+I1), s | | 14.3 | | 18.3 | 7.3 | 13.7 | 32.9 | 0.0 |
| Green Ext Time (p_c), s | | 7.5 | | 1.9 | 0.0 | 3.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.1 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 109 | 70 | 125 | 20 | 31 | 19 | 66 | 419 | 4 | 23 | 533 | 99 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 216 | | | 248 | | | 406 | | | 578 | |
| Travel Time (s) | | 5.9 | | | 6.8 | | | 11.1 | | | 15.8 | |
| Confl. Peds. (#/hr) | | | | 4 | | 4 | 1 | | 1 | 4 | | 4 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 0% | 0% | 0% | 2% | 1% | 25% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 20.0 | 20.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | | 66.7% | 66.7% | | 66.7% | 66.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 17 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 109 | 70 | 125 | 20 | 31 | 19 | 66 | 419 | 4 | 23 | 533 | 99 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1854 | 1809 | 1881 | 1809 | 1836 | 1885 | 1836 | 1863 | 1919 | 1863 |
| Adj Flow Rate, veh/h | 116 | 74 | 133 | 21 | 33 | 20 | 70 | 446 | 4 | 24 | 567 | 105 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 247 | 122 | 327 | 100 | 137 | 59 | 167 | 1013 | 9 | 80 | 1013 | 183 |
| Arrive On Green | 0.19 | 0.21 | 0.21 | 0.19 | 0.21 | 0.19 | 0.64 | 0.66 | 0.64 | 0.43 | 0.44 | 0.43 |
| Sat Flow, veh/h | 723 | 586 | 1576 | 109 | 661 | 285 | 150 | 1538 | 13 | 27 | 1537 | 278 |
| Grp Volume(v), veh/h | 190 | 0 | 133 | 74 | 0 | 0 | 520 | 0 | 0 | 696 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1309 | 0 | 1576 | 1056 | 0 | 0 | 1700 | 0 | 0 | 1842 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 4.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.6 | 0.0 | 4.4 | 8.8 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | 16.8 | 0.0 | 0.0 |
| Prop In Lane | 0.61 | | 1.00 | 0.28 | | 0.27 | 0.13 | | 0.01 | 0.03 | | 0.15 |
| Lane Grp Cap(c), veh/h | 347 | 0 | 327 | 279 | 0 | 0 | 1160 | 0 | 0 | 1245 | 0 | 0 |
| V/C Ratio(X) | 0.55 | 0.00 | 0.41 | 0.27 | 0.00 | 0.00 | 0.45 | 0.00 | 0.00 | 0.56 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 434 | 0 | 420 | 370 | 0 | 0 | 1160 | 0 | 0 | 1245 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.99 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.4 | 0.0 | 20.6 | 20.1 | 0.0 | 0.0 | 4.9 | 0.0 | 0.0 | 10.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.4 | 0.0 | 0.8 | 0.5 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 5.7 | 0.0 | 3.5 | 1.9 | 0.0 | 0.0 | 8.2 | 0.0 | 0.0 | 14.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 23.7 | 0.0 | 21.4 | 20.6 | 0.0 | 0.0 | 6.1 | 0.0 | 0.0 | 12.2 | 0.0 | 0.0 |
| LnGrp LOS | C | | C | C | | | A | | | B | | |
| Approach Vol, veh/h | | 323 | | | 74 | | | 520 | | | 696 | |
| Approach Delay, s/veh | | 22.8 | | | 20.6 | | | 6.1 | | | 12.2 | |
| Approach LOS | | C | | | C | | | A | | | B | |

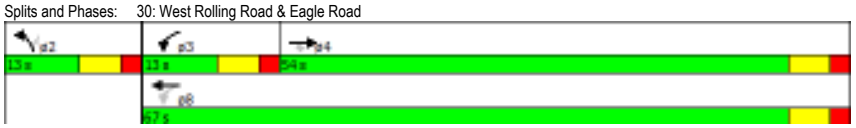
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.5 | | 16.5 | | 43.5 | | 16.5 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 35.0 | | 15.0 | | 35.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 9.9 | | 10.6 | | 18.8 | | 10.8 |
| Green Ext Time (p_c), s | | 6.3 | | 0.7 | | 5.4 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.8 |
| HCM 2010 LOS | B |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 381 | 198 | 402 | 352 | 61 | 132 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1338 | | | 694 | 446 | |
| Travel Time (s) | 30.4 | | | 15.8 | 10.1 | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 54.0 | 54.0 | 13.0 | 67.0 | 13.0 | 13.0 |
| Total Split (%) | 67.5% | 67.5% | 16.3% | 83.8% | 16.3% | 16.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 80 | |
| Actuated Cycle Length: 78.5 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |

Splits and Phases: 30: West Rolling Road & Eagle Road








| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 381 | 198 | 402 | 352 | 61 | 132 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1818 | 1764 | 1747 | 1692 | 1675 |
| Adj Flow Rate, veh/h | 389 | 202 | 410 | 359 | 62 | 135 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 1 | 1 | 1 | 0 | 1 |
| Cap, veh/h | 1189 | 1021 | 106 | 59 | 243 | 215 |
| Arrive On Green | 0.66 | 0.66 | 0.64 | 0.66 | 0.15 | 0.15 |
| Sat Flow, veh/h | 1800 | 1545 | 3 | 90 | 1611 | 1424 |
| Grp Volume(v), veh/h | 389 | 202 | 769 | 0 | 62 | 135 |
| Grp Sat Flow(s),veh/h/ln | 1800 | 1545 | 92 | 0 | 1611 | 1424 |
| Q Serve(g_s), s | 5.0 | 2.7 | 16.8 | 0.0 | 1.8 | 4.7 |
| Cycle Q Clear(g_c), s | 5.0 | 2.7 | 16.8 | 0.0 | 1.8 | 4.7 |
| Prop In Lane | | 1.00 | 0.53 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1189 | 1021 | 0 | 0 | 243 | 215 |
| V/C Ratio(X) | 0.33 | 0.20 | 0.00 | 0.00 | 0.25 | 0.63 |
| Avail Cap(c_a), veh/h | 1664 | 1428 | 0 | 0 | 243 | 215 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.9 | 3.5 | 0.0 | 0.0 | 19.9 | 21.1 |
| Incr Delay (d2), s/veh | 0.2 | 0.1 | 0.0 | 0.0 | 0.5 | 5.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 2.1 | 0.0 | 0.0 | 1.5 | 3.9 |
| LnGrp Delay(d),s/veh | 4.1 | 3.6 | 0.0 | 0.0 | 20.4 | 26.8 |
| LnGrp LOS | A | A | | | C | C |
| Approach Vol, veh/h | 591 | | | 769 | 197 | |
| Approach Delay, s/veh | 3.9 | | | 0.0 | 24.8 | |
| Approach LOS | A | | | A | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 13.0 | | 40.0 | | | | 40.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 7.0 | | 48.0 | | | | 61.0 |
| Max Q Clear Time (g_c+I1), s | | 7.2 | | 7.5 | | | | 18.8 |
| Green Ext Time (p_c), s | | 0.0 | | 15.0 | | | | 15.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.6 |
| HCM 2010 LOS | A |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 670 | 1325 | 6 | 927 | 1915 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3427 | 0 | 1693 | 3319 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3427 | 0 | 1693 | 3319 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 504 | | 565 | | | 405 |
| Travel Time (s) | 13.7 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 691 | 1372 | 0 | 956 | 1974 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 66.0 | 54.0 | | 66.0 | 120.0 |
| Total Split (%) | | 55.0% | 45.0% | | 55.0% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 58.0 | 47.0 | | 58.0 | 120.0 |
| Actuated g/C Ratio | | 0.48 | 0.39 | | 0.48 | 1.00 |
| v/c Ratio | | 0.56 | 1.02 | | 1.17 | 0.59 |
| Control Delay | | 19.4 | 55.1 | | 119.1 | 0.8 |
| Queue Delay | | 0.0 | 0.0 | | 0.2 | 0.0 |
| Total Delay | | 19.4 | 55.1 | | 119.2 | 0.8 |
| LOS | | B | E | | F | A |
| Approach Delay | | | 55.1 | | | 39.4 |
| Approach LOS | | | E | | | D |
| Queue Length 50th (ft) | | 161 | ~425 | | ~881 | 0 |
| Queue Length 95th (ft) | | 213 | m#698 | | #1133 | 0 |
| Internal Link Dist (ft) | 424 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |





| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Base Capacity (vph) | | 1245 | 1342 | | 818 | 3319 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 22 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.56 | 1.02 | | 1.20 | 0.59 |

## Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 41.0 — Intersection LOS: D
Intersection Capacity Utilization 105.6% — ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 18 | 1861 | 3 | 56 | 2932 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Bikes (#/hr) | | | | 3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 18 | 1861 | 3 | 56 | 2932 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 19 | 1919 | 3 | 58 | 3023 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3547 | 961 | 0 | 0 | 1922 | 0 |
| Stage 1 | 1920 | - | - | - | - | - |
| Stage 2 | 1627 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | 3 | 275 | - | - | 332 | - |
| Stage 1 | 86 | - | - | - | - | - |
| Stage 2 | 131 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 2 | 275 | - | - | 332 | - |
| Mov Cap-2 Maneuver | 2 | - | - | - | - | - |
| Stage 1 | 86 | - | - | - | - | - |
| Stage 2 | 108 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 275 | 332 | - |
| HCM Lane V/C Ratio | - | - | 0.067 | 0.174 | - |
| HCM Control Delay (s) | - | - | 19 | 18.1 | - |
| HCM Lane LOS | - | - | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.6 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 56 | 319 | 568 | 42 | 203 | 836 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 1% | 1% | 3% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 7.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 56 | 319 | 568 | 42 | 203 | 836 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 0 | 3 | 1 | 1 | 3 |
| Mvmt Flow | 61 | 347 | 617 | 46 | 221 | 909 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1967 | 617 | 0 | 0 | 617 | 0 |
| Stage 1 | 617 | - | - | - | - | - |
| Stage 2 | 1350 | - | - | - | - | - |
| Critical Hdwy | 6.02 | 6 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.02 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.02 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 91 | 535 | - | - | 735 | - |
| Stage 1 | 649 | - | - | - | - | - |
| Stage 2 | 304 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 36 | 535 | - | - | 735 | - |
| Mov Cap-2 Maneuver | 100 | - | - | - | - | - |
| Stage 1 | 649 | - | - | - | - | - |
| Stage 2 | 119 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 32.6 | 0 | 2.3 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 100 | 535 | 735 | - |
| HCM Lane V/C Ratio | - | - | 0.609 | 0.648 | 0.3 | - |
| HCM Control Delay (s) | - | - | 85.7 | 23.3 | 12 | 0 |
| HCM Lane LOS | - | - | F | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 2.9 | 4.6 | 1.3 | - |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 556 | 555 | 1533 | 583 | 388 | 1437 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 13 | 13 | 13 |
| Grade (%) | 4% | | 1% | | | -4% |
| Storage Length (ft) | 200 | 0 | | 0 | 160 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | Yes | | |
| Link Speed (mph) | 45 | | 40 | | | 40 |
| Link Distance (ft) | 345 | | 389 | | | 1061 |
| Travel Time (s) | 5.2 | | 6.6 | | | 18.1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 1% | 2% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 10.0 | 3.0 | 3.0 | 10.0 |
| Minimum Split (s) | 12.0 | 12.0 | 16.0 | 12.0 | 12.0 | 16.0 |
| Total Split (s) | 28.0 | 30.0 | 62.0 | 28.0 | 30.0 | 92.0 |
| Total Split (%) | 23.3% | 25.0% | 51.7% | 23.3% | 25.0% | 76.7% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | 5.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 27 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 1: Sproul Road & Lawrence Road

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 556 | 555 | 1533 | 583 | 388 | 1437 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 2 | 0 | 5 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1747 | 1816 | 1756 | 1844 | 1891 | 1891 |
| Adj Flow Rate, veh/h | 567 | 449 | 1564 | 527 | 396 | 1466 |
| Adj No. of Lanes | 2 | 1 | 2 | 1 | 1 | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 |
| Cap, veh/h | 645 | 587 | 1690 | 1103 | 441 | 2604 |
| Arrive On Green | 0.20 | 0.20 | 1.00 | 1.00 | 0.16 | 0.73 |
| Sat Flow, veh/h | 3227 | 1544 | 3424 | 1568 | 1801 | 3687 |
| Grp Volume(v), veh/h | 567 | 449 | 1564 | 527 | 396 | 1466 |
| Grp Sat Flow(s),veh/h/ln | 1613 | 1544 | 1668 | 1568 | 1801 | 1796 |
| Q Serve(g_s), s | 20.5 | 24.0 | 0.0 | 0.0 | 14.4 | 22.8 |
| Cycle Q Clear(g_c), s | 20.5 | 24.0 | 0.0 | 0.0 | 14.4 | 22.8 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 645 | 587 | 1690 | 1103 | 441 | 2604 |
| V/C Ratio(X) | 0.88 | 0.77 | 0.93 | 0.48 | 0.90 | 0.56 |
| Avail Cap(c_a), veh/h | 645 | 551 | 1757 | 1139 | 540 | 2604 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.27 | 0.27 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 46.6 | 32.6 | 1.2 | 0.3 | 32.0 | 7.7 |
| Incr Delay (d2), s/veh | 13.2 | 6.7 | 3.3 | 0.4 | 15.6 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 9.1 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 15.6 | 20.2 | 10.0 | 1.9 | 23.0 | 17.1 |
| LnGrp Delay(d),s/veh | 59.7 | 39.3 | 4.6 | 0.7 | 56.6 | 8.6 |
| LnGrp LOS | E | D | A | A | E | A |
| Approach Vol, veh/h | 1016 | | 2091 | | | 1862 |
| Approach Delay, s/veh | 50.7 | | 3.6 | | | 18.8 |
| Approach LOS | D | | A | | | B |

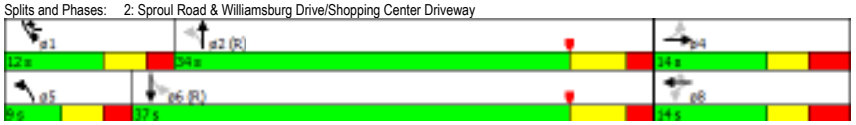
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 23.8 | 68.2 | | | | 92.0 | | 28.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | | | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | 24.0 | 56.0 | | | | 86.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 16.9 | 2.5 | | | | 25.3 | | 26.5 |
| Green Ext Time (p_c), s | 0.9 | 35.2 | | | | 38.1 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.9 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 19 | 18 | 48 | 249 | 14 | 246 | 44 | 1823 | 181 | 185 | 1845 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 13 | 12 | 13 | 12 |
| Grade (%) | | 0% | | | 4% | | | 4% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 115 | | 450 | 240 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 40 | | | 40 | |
| Link Distance (ft) | | 334 | | | 245 | | | 544 | | | 389 | |
| Travel Time (s) | | 9.1 | | | 6.7 | | | 9.3 | | | 6.6 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | Perm | NA | pm+ov | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 4 | | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 10.0 | | 3.0 | 10.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | 8.0 | 8.0 | 16.0 | | 8.0 | 16.0 | |
| Total Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | 12.0 | 9.0 | 34.0 | | 12.0 | 37.0 | |
| Total Split (%) | 23.3% | 23.3% | | 23.3% | 23.3% | 20.0% | 15.0% | 56.7% | | 20.0% | 61.7% | |
| Yellow Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | | 3.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | 4.0 | 4.0 | 5.0 | | 4.0 | 5.0 | |
| Lead/Lag | | | | | | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | None | None | C-Max | | None | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 31 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 2: Sproul Road & Williamsburg Drive/Shopping Center Driveway








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 19 | 18 | 48 | 249 | 14 | 246 | 44 | 1823 | 181 | 185 | 1845 | 13 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 3 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1796 | 1800 | 1764 | 1764 | 1764 | 1764 | 1731 | 1835 | 1800 | 1872 | 1800 |
| Adj Flow Rate, veh/h | 20 | 19 | 44 | 265 | 15 | 218 | 47 | 1939 | 0 | 197 | 1963 | 13 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| Cap, veh/h | 74 | 46 | 52 | 252 | 8 | 391 | 207 | 2314 | 0 | 329 | 2067 | 13 |
| Arrive On Green | 0.13 | 0.15 | 0.13 | 0.13 | 0.15 | 0.15 | 0.05 | 0.51 | 0.00 | 0.10 | 0.57 | 0.55 |
| Sat Flow, veh/h | 0 | 309 | 348 | 901 | 51 | 1499 | 1680 | 4743 | 0 | 1714 | 3622 | 24 |
| Grp Volume(v), veh/h | 83 | 0 | 0 | 280 | 0 | 218 | 47 | 1939 | 0 | 197 | 963 | 1013 |
| Grp Sat Flow(s),veh/h/ln | 657 | 0 | 0 | 952 | 0 | 1499 | 1680 | 1506 | 0 | 1714 | 1778 | 1868 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.6 | 0.8 | 21.9 | 0.0 | 2.7 | 30.4 | 30.6 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 0.0 | 8.0 | 0.0 | 7.6 | 0.8 | 21.9 | 0.0 | 2.7 | 30.4 | 30.6 |
| Prop In Lane | 0.24 | | 0.53 | 0.95 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 162 | 0 | 0 | 244 | 0 | 391 | 207 | 2314 | 0 | 329 | 1014 | 1066 |
| V/C Ratio(X) | 0.51 | 0.00 | 0.00 | 1.15 | 0.00 | 0.56 | 0.23 | 0.84 | 0.00 | 0.60 | 0.95 | 0.95 |
| Avail Cap(c_a), veh/h | 162 | 0 | 0 | 244 | 0 | 379 | 273 | 2323 | 0 | 381 | 1014 | 1065 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.71 | 0.71 | 0.71 |
| Uniform Delay (d), s/veh | 23.4 | 0.0 | 0.0 | 27.5 | 0.0 | 19.2 | 13.5 | 12.6 | 0.0 | 12.7 | 12.2 | 12.2 |
| Incr Delay (d2), s/veh | 2.7 | 0.0 | 0.0 | 103.8 | 0.0 | 1.9 | 0.5 | 3.8 | 0.0 | 1.4 | 14.3 | 14.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.7 | 0.3 | 0.3 |
| %ile BackOfQ(95%),veh/ln | 2.5 | 0.0 | 0.0 | 12.6 | 0.0 | 6.0 | 0.8 | 15.2 | 0.0 | 3.8 | 25.0 | 26.1 |
| LnGrp Delay(d),s/veh | 26.1 | 0.0 | 0.0 | 131.2 | 0.0 | 21.1 | 14.0 | 16.6 | 0.0 | 14.7 | 26.8 | 26.6 |
| LnGrp LOS | C | | | F | | C | B | B | | B | C | C |
| Approach Vol, veh/h | | 83 | | | 498 | | | 1986 | | | 2173 | |
| Approach Delay, s/veh | | 26.1 | | | 83.0 | | | 16.5 | | | 25.6 | |
| Approach LOS | | C | | | F | | | B | | | C | |

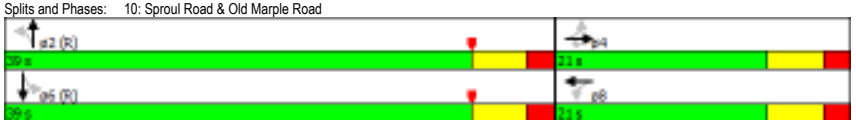
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 10.1 | 35.9 | | 14.0 | 6.8 | 39.2 | | 14.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 28.0 | | 8.0 | 4.0 | 31.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | 5.2 | 24.4 | | 10.0 | 3.3 | 32.9 | | 10.1 |
| Green Ext Time (p_c), s | 0.1 | 3.5 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.8 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 245 | 106 | 56 | 184 | 143 | 11 | 69 | 1656 | 73 | 3 | 1269 | 179 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 13 | 12 | 12 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | -2% | | | 2% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 75 | 0 | | 0 | 225 | | 0 | 75 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 40 | |
| Link Distance (ft) | | 926 | | | 195 | | | 394 | | | 682 | |
| Travel Time (s) | | 18.0 | | | 3.8 | | | 6.7 | | | 11.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 3% | 1% | 0% | 2% | 1% | 6% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Total Split (s) | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | | 39.0 | 39.0 | | 39.0 | 39.0 | |
| Total Split (%) | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | | 65.0% | 65.0% | | 65.0% | 65.0% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | 0.0 | | -1.0 | | 0.0 | -1.0 | | 0.0 | -1.0 | |
| Total Lost Time (s) | | 5.0 | 6.0 | | 5.0 | | 6.0 | 5.0 | | 6.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 36 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow | |
| Natural Cycle: 130 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 10: Sproul Road & Old Marple Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 245 | 106 | 56 | 184 | 143 | 11 | 69 | 1656 | 73 | 3 | 1269 | 179 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1885 | 1782 | 1782 | 1746 | 1782 | 1738 | 1752 | 1773 | 1827 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 261 | 113 | 47 | 196 | 152 | 5 | 73 | 1762 | 73 | 3 | 1350 | 176 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 334 | 100 | 378 | 296 | 171 | 5 | 184 | 1850 | 73 | 128 | 1734 | 225 |
| Arrive On Green | 0.25 | 0.27 | 0.25 | 0.25 | 0.27 | 0.25 | 0.55 | 0.57 | 0.55 | 0.55 | 0.57 | 0.55 |
| Sat Flow, veh/h | 870 | 377 | 1513 | 762 | 643 | 20 | 317 | 3258 | 134 | 247 | 3061 | 396 |
| Grp Volume(v), veh/h | 374 | 0 | 47 | 353 | 0 | 0 | 73 | 895 | 940 | 3 | 754 | 772 |
| Grp Sat Flow(s),veh/h/ln | 1246 | 0 | 1513 | 1424 | 0 | 0 | 317 | 1664 | 1728 | 247 | 1718 | 1739 |
| Q Serve(g_s), s | 0.2 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 12.2 | 30.3 | 31.0 | 0.7 | 20.3 | 20.8 |
| Cycle Q Clear(g_c), s | 15.0 | 0.0 | 1.4 | 14.8 | 0.0 | 0.0 | 33.0 | 30.3 | 31.0 | 31.7 | 20.3 | 20.8 |
| Prop In Lane | 0.70 | | 1.00 | 0.56 | | 0.01 | 1.00 | | 0.08 | 1.00 | | 0.23 |
| Lane Grp Cap(c), veh/h | 413 | 0 | 378 | 449 | 0 | 0 | 184 | 943 | 980 | 128 | 974 | 985 |
| V/C Ratio(X) | 0.90 | 0.00 | 0.12 | 0.79 | 0.00 | 0.00 | 0.40 | 0.95 | 0.96 | 0.02 | 0.77 | 0.78 |
| Avail Cap(c_a), veh/h | 413 | 0 | 378 | 449 | 0 | 0 | 184 | 943 | 979 | 128 | 974 | 985 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.2 | 0.0 | 17.4 | 21.8 | 0.0 | 0.0 | 24.7 | 12.3 | 12.4 | 28.5 | 10.0 | 10.2 |
| Incr Delay (d2), s/veh | 22.9 | 0.0 | 0.1 | 8.9 | 0.0 | 0.0 | 6.3 | 19.4 | 20.4 | 0.3 | 6.0 | 6.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 13.7 | 0.0 | 1.1 | 11.3 | 0.0 | 0.0 | 2.7 | 26.0 | 27.4 | 0.1 | 16.5 | 17.2 |
| LnGrp Delay(d),s/veh | 46.1 | 0.0 | 17.6 | 30.7 | 0.0 | 0.0 | 30.9 | 31.8 | 33.0 | 28.9 | 16.0 | 16.5 |
| LnGrp LOS | D | | B | C | | | C | C | C | C | B | B |
| Approach Vol, veh/h | | 421 | | | 353 | | | 1908 | | | 1529 | |
| Approach Delay, s/veh | | 42.9 | | | 30.7 | | | 32.4 | | | 16.3 | |
| Approach LOS | | D | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 39.0 | | 21.0 | | 39.0 | | 21.0 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 33.0 | | 15.0 | | 33.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 35.0 | | 17.0 | | 33.7 | | 16.8 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

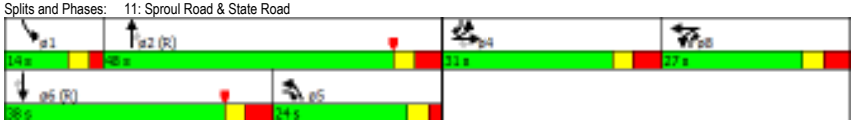
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.4 |
| HCM 2010 LOS | C |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 681 | 60 | 479 | 283 | 253 | 116 | 403 | 1036 | 331 | 94 | 838 | 616 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 14 | 14 | 16 | 14 | 14 | 12 | 10 | 12 | 12 | 10 | 12 | 12 |
| Grade (%) | | 1% | | | -2% | | | 0% | | | 0% | |
| Storage Length (ft) | 320 | | 370 | 205 | | 0 | 350 | | 0 | 130 | | 300 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 40 | | | 40 | |
| Link Distance (ft) | | 720 | | | 628 | | | 447 | | | 466 | |
| Travel Time (s) | | 10.9 | | | 9.5 | | | 7.6 | | | 7.9 | |
| Confl. Peds. (#/hr) | 3 | | 3 | 6 | | 6 | 1 | | 1 | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 5% | 2% | 1% | 2% | 1% | 1% | 1% | 1% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | 46% | | | 10% | | | | | | | | |
| Turn Type | Split | NA | pm+ov | Split | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 8 | 1 | 6 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 15.0 | 4.0 | 3.0 | 15.0 | 4.0 |
| Minimum Split (s) | 11.0 | 11.0 | 8.0 | 11.0 | 11.0 | | 8.0 | 22.0 | 11.0 | 8.0 | 22.0 | 11.0 |
| Total Split (s) | 31.0 | 31.0 | 24.0 | 27.0 | 27.0 | | 24.0 | 48.0 | 27.0 | 14.0 | 38.0 | 31.0 |
| Total Split (%) | 25.8% | 25.8% | 20.0% | 22.5% | 22.5% | | 20.0% | 40.0% | 22.5% | 11.7% | 31.7% | 25.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 | | 2.0 | 4.0 | 4.0 | 2.0 | 4.0 | 4.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | | | Lag | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | None |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sproul Road & State Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 681 | 60 | 479 | 283 | 253 | 116 | 403 | 1036 | 331 | 94 | 838 | 616 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 7 | 0 | 6 | 3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1844 | 1833 | 1826 | 1872 | 1860 | 1818 | 1782 | 1782 | 1782 | 1800 | 1782 | 1782 |
| Adj Flow Rate, veh/h | 762 | 0 | 0 | 282 | 288 | 0 | 424 | 1091 | 0 | 99 | 882 | 0 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| Cap, veh/h | 732 | 0 | 1375 | 312 | 326 | 0 | 1094 | 2973 | 1595 | 142 | 903 | 720 |
| Arrive On Green | 0.21 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.64 | 0.84 | 0.00 | 0.08 | 0.27 | 0.00 |
| Sat Flow, veh/h | 3513 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 3386 | 1515 | 1714 | 3386 | 1515 |
| Grp Volume(v), veh/h | 762 | 0 | 0 | 282 | 288 | 0 | 424 | 1091 | 0 | 99 | 882 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1756 | 0 | 1552 | 1783 | 1860 | 0 | 1697 | 1693 | 1515 | 1714 | 1693 | 1515 |
| Q Serve(g_s), s | 25.0 | 0.0 | 0.0 | 18.6 | 18.1 | 0.0 | 14.2 | 8.9 | 0.0 | 6.7 | 31.0 | 0.0 |
| Cycle Q Clear(g_c), s | 25.0 | 0.0 | 0.0 | 18.6 | 18.1 | 0.0 | 14.2 | 8.9 | 0.0 | 6.7 | 31.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 732 | 0 | 1375 | 312 | 326 | 0 | 1094 | 2973 | 1595 | 142 | 903 | 720 |
| V/C Ratio(X) | 1.04 | 0.00 | 0.00 | 0.90 | 0.88 | 0.00 | 0.39 | 0.37 | 0.00 | 0.70 | 0.98 | 0.00 |
| Avail Cap(c_a), veh/h | 732 | 0 | 1323 | 312 | 326 | 0 | 1093 | 2860 | 1544 | 143 | 903 | 720 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 47.5 | 0.0 | 0.0 | 48.9 | 48.8 | 0.0 | 10.2 | 1.4 | 0.0 | 53.6 | 43.6 | 0.0 |
| Incr Delay (d2), s/veh | 44.5 | 0.0 | 0.0 | 28.0 | 23.8 | 0.0 | 0.2 | 0.4 | 0.0 | 13.9 | 24.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 32.4 | 0.0 | 0.0 | 6.9 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 33.4 | 0.0 | 0.0 | 18.3 | 18.6 | 0.0 | 11.3 | 6.0 | 0.0 | 6.7 | 24.4 | 0.0 |
| LnGrp Delay(d),s/veh | 124.4 | 0.0 | 0.0 | 83.8 | 82.1 | 0.0 | 10.5 | 1.8 | 0.0 | 67.5 | 68.5 | 0.0 |
| LnGrp LOS | F | | | F | F | | B | A | | E | E | |
| Approach Vol, veh/h | | 762 | | | 570 | | | 1515 | | | 981 | |
| Approach Delay, s/veh | | 124.4 | | | 82.9 | | | 4.2 | | | 68.4 | |
| Approach LOS | | F | | | F | | | A | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 13.9 | 107.6 | | 31.0 | 83.5 | 38.0 | | 27.0 |
| Change Period (Y+Rc), s | 5.0 | 7.0 | | 7.0 | 7.0 | * 7 | | 7.0 |
| Max Green Setting (Gmax), s | 9.0 | 41.0 | | 24.0 | 19.0 | * 31 | | 20.0 |
| Max Q Clear Time (g_c+I1), s | 9.2 | 11.4 | | 27.5 | 16.7 | 33.5 | | 21.1 |
| Green Ext Time (p_c), s | 0.0 | 7.6 | | 0.0 | 0.5 | 0.0 | | 0.0 |

**Intersection Summary**

HCM 2010 Ctrl Delay 56.3
HCM 2010 LOS E

**Notes**

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 239 | 1497 | 472 | 42 | 1375 | 199 | 402 | 493 | 45 | 215 | 436 | 39 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 11 | 11 | 12 |
| Grade (%) | | -6% | | | 6% | | | -1% | | | -3% | |
| Storage Length (ft) | 230 | | 0 | 420 | | 0 | 165 | | 0 | 180 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 25 | |
| Link Distance (ft) | | 595 | | | 813 | | | 443 | | | 847 | |
| Travel Time (s) | | 9.0 | | | 12.3 | | | 8.6 | | | 23.1 | |
| Confl. Peds. (#/hr) | 1 | | 1 | | | | | | | 1 | | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 0% | 1% | 0% | 2% | 1% | 1% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 14.0 | 14.0 | 10.0 | 14.0 | | 13.0 | 13.0 | | 10.0 | 13.0 | |
| Total Split (s) | 16.0 | 62.0 | 62.0 | 10.0 | 56.0 | | 21.0 | 34.0 | | 14.0 | 27.0 | |
| Total Split (%) | 13.3% | 51.7% | 51.7% | 8.3% | 46.7% | | 17.5% | 28.3% | | 11.7% | 22.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | None | | None | None | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 97 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 12: Springfield Road & State Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 239 | 1497 | 472 | 42 | 1375 | 199 | 402 | 493 | 45 | 215 | 436 | 39 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 3 | 10 | 1 | 0 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1836 | 1746 | 1731 | 1746 | 1774 | 1791 | 1809 | 1809 | 1809 | 1827 |
| Adj Flow Rate, veh/h | 252 | 1576 | 0 | 44 | 1447 | 0 | 423 | 519 | 0 | 226 | 459 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 206 | 1628 | 728 | 116 | 1370 | 0 | 285 | 433 | 0 | 189 | 332 | 0 |
| Arrive On Green | 0.08 | 0.47 | 0.00 | 0.03 | 0.42 | 0.00 | 0.13 | 0.24 | 0.00 | 0.02 | 0.06 | 0.00 |
| Sat Flow, veh/h | 1748 | 3488 | 1560 | 1663 | 3375 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Grp Volume(v), veh/h | 252 | 1576 | 0 | 44 | 1447 | 0 | 423 | 519 | 0 | 226 | 459 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1748 | 1744 | 1560 | 1663 | 1644 | 0 | 1689 | 1791 | 0 | 1723 | 1809 | 0 |
| Q Serve(g_s), s | 10.0 | 52.8 | 0.0 | 1.8 | 50.0 | 0.0 | 16.0 | 29.0 | 0.0 | 9.0 | 22.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 52.8 | 0.0 | 1.8 | 50.0 | 0.0 | 16.0 | 29.0 | 0.0 | 9.0 | 22.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 206 | 1628 | 728 | 116 | 1370 | 0 | 285 | 433 | 0 | 189 | 332 | 0 |
| V/C Ratio(X) | 1.23 | 0.97 | 0.00 | 0.38 | 1.06 | 0.00 | 1.48 | 1.20 | 0.00 | 1.19 | 1.38 | 0.00 |
| Avail Cap(c_a), veh/h | 206 | 1628 | 728 | 124 | 1370 | 0 | 285 | 433 | 0 | 189 | 332 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.39 | 0.39 | 0.00 |
| Uniform Delay (d), s/veh | 36.8 | 31.8 | 0.0 | 29.1 | 35.0 | 0.0 | 34.3 | 45.5 | 0.0 | 43.7 | 56.4 | 0.0 |
| Incr Delay (d2), s/veh | 136.6 | 15.9 | 0.0 | 2.0 | 40.6 | 0.0 | 235.3 | 110.0 | 0.0 | 106.2 | 180.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 41.6 | 8.6 | 0.0 | 0.0 | 24.5 | 0.0 | 48.9 | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 29.3 | 41.1 | 0.0 | 1.6 | 59.7 | 0.0 | 53.0 | 50.6 | 0.0 | 10.1 | 49.7 | 0.0 |
| LnGrp Delay(d),s/veh | 215.0 | 56.3 | 0.0 | 31.1 | 100.1 | 0.0 | 318.6 | 162.4 | 0.0 | 150.0 | 236.5 | 0.0 |
| LnGrp LOS | F | E | | C | F | | F | F | | F | F | |
| Approach Vol, veh/h | | 1828 | | | 1491 | | | 942 | | | 685 | |
| Approach Delay, s/veh | | 78.2 | | | 98.1 | | | 232.5 | | | 208.0 | |
| Approach LOS | | E | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 62.0 | 21.0 | 27.0 | 16.0 | 56.0 | 14.0 | 34.0 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 3.0 | 55.0 | 15.0 | 21.0 | 9.0 | 49.0 | 8.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 55.3 | 18.5 | 24.5 | 12.5 | 52.5 | 11.5 | 31.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 131.5 |
| HCM 2010 LOS | F |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 80 | 110 | 76 | 824 | 627 | 267 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | 0% | | | 0% | -1% | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 25 | | | 25 | 25 | |
| Link Distance (ft) | 389 | | | 847 | 542 | |
| Travel Time (s) | 10.6 | | | 23.1 | 14.8 | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 1% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | | pm+pt | NA | NA | |
| Protected Phases | 4 | | 5 | 2 | 6 | |
| Permitted Phases | | | 2 | | | |
| Detector Phase | 4 | | 5 | 2 | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 8.0 | | 9.0 | 8.0 | 8.0 | |
| Total Split (s) | 20.0 | | 13.0 | 40.0 | 27.0 | |
| Total Split (%) | 33.3% | | 21.7% | 66.7% | 45.0% | |
| Yellow Time (s) | 3.0 | | 3.0 | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | | | 4.0 | 4.0 | |
| Lead/Lag | | | Lead | | Lag | |
| Lead-Lag Optimize? | | | Yes | | Yes | |
| Recall Mode | None | | None | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 13: Springfield Road & Old Marple Road

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 80 | 110 | 76 | 824 | 627 | 267 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1800 | 1800 | 1800 | 1779 | 1791 | 1809 |
| Adj Flow Rate, veh/h | 92 | 126 | 87 | 947 | 721 | 307 |
| Adj No. of Lanes | 0 | 0 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 127 | 174 | 65 | 294 | 810 | 345 |
| Arrive On Green | 0.19 | 0.17 | 1.00 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 674 | 923 | 0 | 433 | 1193 | 508 |
| Grp Volume(v), veh/h | 219 | 0 | 1034 | 0 | 0 | 1028 |
| Grp Sat Flow(s),veh/h/ln | 1604 | 0 | 433 | 0 | 0 | 1701 |
| Q Serve(g_s), s | 7.7 | 0.0 | 58.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.7 | 0.0 | 58.0 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.42 | 0.58 | 0.08 | | | 0.30 |
| Lane Grp Cap(c), veh/h | 302 | 0 | 0 | 0 | 0 | 1154 |
| V/C Ratio(X) | 0.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.89 |
| Avail Cap(c_a), veh/h | 428 | 0 | 0 | 0 | 0 | 1154 |
| HCM Platoon Ratio | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.67 |
| Uniform Delay (d), s/veh | 23.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 3.6 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 4.3 |
| LnGrp Delay(d),s/veh | 26.8 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 |
| LnGrp LOS | C | | | | | A |
| Approach Vol, veh/h | 219 | | | 1034 | 1028 | |
| Approach Delay, s/veh | 26.8 | | | 0.0 | 7.4 | |
| Approach LOS | C | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | | 44.7 | | 15.3 | | 44.7 | | |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | |
| Max Green Setting (Gmax), s | | 35.0 | | 15.0 | | 22.0 | | |
| Max Q Clear Time (g_c+I1), s | | 60.0 | | 10.2 | | 2.5 | | |
| Green Ext Time (p_c), s | | 0.0 | | 0.3 | | 12.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.9 |
| HCM 2010 LOS | A |

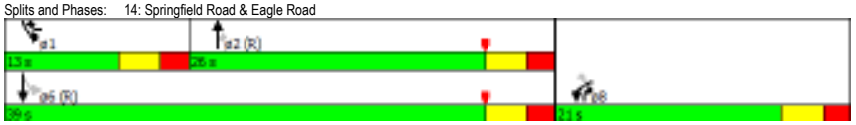
Notes

User approved volume balancing among the lanes for turning movement.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 373 | 130 | 687 | 201 | 104 | 532 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 13 | 13 | 12 | 13 | 10 | 10 |
| Grade (%) | -5% | | 1% | | | -1% |
| Storage Length (ft) | 0 | 0 | | 175 | 75 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Right Turn on Red | | Yes | | No | | |
| Link Speed (mph) | 35 | | 25 | | | 25 |
| Link Distance (ft) | 521 | | 542 | | | 514 |
| Travel Time (s) | 10.1 | | 14.8 | | | 14.0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 1% | 9% | 1% | 1% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | Prot | pm+ov | NA | pm+ov | pm+pt | NA |
| Protected Phases | 8 | 1 | 2 | 8 | 1 | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |
| Detector Phase | 8 | 1 | 2 | 8 | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 8.0 | 9.0 | 9.0 | 8.0 | 9.0 | 33.0 |
| Total Split (s) | 21.0 | 13.0 | 26.0 | 21.0 | 13.0 | 39.0 |
| Total Split (%) | 35.0% | 21.7% | 43.3% | 35.0% | 21.7% | 65.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | None | None | C-Max | None | None | C-Max |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow | |
| Natural Cycle: 60 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 14: Springfield Road & Eagle Road








| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 373 | 130 | 687 | 201 | 104 | 532 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1760 | 1773 | 1844 | 1809 | 1791 |
| Adj Flow Rate, veh/h | 405 | 123 | 747 | 169 | 113 | 578 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 9 | 1 | 1 | 0 | 1 |
| Cap, veh/h | 493 | 526 | 795 | 1130 | 293 | 1064 |
| Arrive On Green | 0.27 | 0.27 | 0.60 | 0.60 | 0.08 | 0.59 |
| Sat Flow, veh/h | 1809 | 1496 | 1773 | 1568 | 1723 | 1791 |
| Grp Volume(v), veh/h | 405 | 123 | 747 | 169 | 113 | 578 |
| Grp Sat Flow(s),veh/h/ln | 1809 | 1496 | 1773 | 1568 | 1723 | 1791 |
| Q Serve(g_s), s | 12.6 | 3.5 | 23.2 | 1.5 | 1.8 | 11.6 |
| Cycle Q Clear(g_c), s | 12.6 | 3.5 | 23.2 | 1.5 | 1.8 | 11.6 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 493 | 526 | 795 | 1130 | 293 | 1064 |
| V/C Ratio(X) | 0.82 | 0.23 | 0.94 | 0.15 | 0.39 | 0.54 |
| Avail Cap(c_a), veh/h | 513 | 542 | 796 | 1130 | 416 | 1065 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.09 | 0.09 | 0.20 | 0.20 |
| Uniform Delay (d), s/veh | 20.5 | 13.7 | 11.4 | 1.9 | 12.6 | 7.3 |
| Incr Delay (d2), s/veh | 10.0 | 0.2 | 2.9 | 0.0 | 0.2 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 12.3 | 2.6 | 13.4 | 1.8 | 1.6 | 7.5 |
| LnGrp Delay(d),s/veh | 30.7 | 14.0 | 14.2 | 1.9 | 12.7 | 7.7 |
| LnGrp LOS | C | B | B | A | B | A |
| Approach Vol, veh/h | 528 | | 916 | | | 691 |
| Approach Delay, s/veh | 26.8 | | 11.9 | | | 8.5 |
| Approach LOS | C | | B | | | A |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 8.7 | 30.9 | | | | 39.7 | | 20.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 21.0 | | | | 34.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 4.3 | 25.7 | | | | 14.1 | | 15.1 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | | | 6.9 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.5 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 29 | 760 | 137 | 238 | 842 | 10 | 215 | 26 | 350 | 6 | 15 | 45 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| Grade (%) | | 1% | | | 1% | | | 3% | | | -3% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 130 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 45 | | | 45 | | | 25 | | | 25 | |
| Link Distance (ft) | | 396 | | | 911 | | | 623 | | | 466 | |
| Travel Time (s) | | 6.0 | | | 13.8 | | | 17.0 | | | 12.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 1% | 1% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 7% | 0% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | | 1 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 3.0 | 7.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 13.0 | 13.0 | | 8.0 | 13.0 | | 12.0 | 12.0 | | 12.0 | 12.0 | |
| Total Split (s) | 30.0 | 30.0 | | 10.0 | 40.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (%) | 50.0% | 50.0% | | 16.7% | 66.7% | | 33.3% | 33.3% | | 33.3% | 33.3% | |
| Yellow Time (s) | 4.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | | | -1.0 | | -1.0 | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 4.0 | 4.0 | | | 4.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 39 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 15: Parkway Ave/Parkway Avenue & Lawrence Road

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 29 | 760 | 137 | 238 | 842 | 10 | 215 | 26 | 350 | 6 | 15 | 45 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1791 | 1774 | 1791 | 1791 | 1760 | 1791 | 1755 | 1773 | 1773 | 1827 | 1799 | 1827 |
| Adj Flow Rate, veh/h | 32 | 826 | 145 | 259 | 915 | 10 | 234 | 28 | 292 | 7 | 16 | 47 |
| Adj No. of Lanes | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 7 | 7 | 7 |
| Cap, veh/h | 79 | 1418 | 269 | 101 | 942 | 12 | 335 | 36 | 372 | 75 | 112 | 248 |
| Arrive On Green | 0.57 | 0.58 | 0.57 | 0.57 | 0.58 | 0.57 | 0.27 | 0.27 | 0.25 | 0.25 | 0.27 | 0.25 |
| Sat Flow, veh/h | 30 | 2432 | 465 | 3 | 1617 | 21 | 1257 | 134 | 1393 | 33 | 421 | 928 |
| Grp Volume(v), veh/h | 525 | 0 | 478 | 410 | 0 | 774 | 234 | 0 | 320 | 70 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1394 | 0 | 1532 | 42 | 0 | 1598 | 1257 | 0 | 1527 | 1383 | 0 | 0 |
| Q Serve(g_s), s | 3.2 | 0.0 | 11.4 | 51.5 | 0.0 | 23.5 | 4.7 | 0.0 | 11.7 | 0.1 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 26.7 | 0.0 | 11.4 | 51.5 | 0.0 | 23.5 | 16.0 | 0.0 | 11.7 | 11.8 | 0.0 | 0.0 |
| Prop In Lane | 0.06 | | 0.30 | 0.63 | | 0.01 | 1.00 | | 0.91 | 0.10 | | 0.67 |
| Lane Grp Cap(c), veh/h | 831 | 0 | 894 | 0 | 0 | 932 | 335 | 0 | 407 | 412 | 0 | 0 |
| V/C Ratio(X) | 0.63 | 0.00 | 0.53 | 0.00 | 0.00 | 0.83 | 0.70 | 0.00 | 0.79 | 0.17 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 854 | 0 | 894 | 0 | 0 | 932 | 335 | 0 | 407 | 412 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.87 | 0.00 | 0.87 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 8.7 | 0.0 | 7.7 | 0.0 | 0.0 | 10.2 | 23.8 | 0.0 | 20.9 | 17.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 3.6 | 0.0 | 2.3 | 0.0 | 0.0 | 8.5 | 5.4 | 0.0 | 8.6 | 0.2 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.8 | 0.0 | 9.1 | 0.0 | 0.0 | 18.3 | 7.5 | 0.0 | 9.6 | 1.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 12.3 | 0.0 | 10.0 | 0.0 | 0.0 | 18.7 | 29.3 | 0.0 | 29.4 | 17.4 | 0.0 | 0.0 |
| LnGrp LOS | B | | B | | | B | C | | C | B | | |
| Approach Vol, veh/h | | 1003 | | | 1184 | | | 554 | | | 70 | |
| Approach Delay, s/veh | | 11.2 | | | 12.2 | | | 29.4 | | | 17.4 | |
| Approach LOS | | B | | | B | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 40.0 | | 20.0 | | 40.0 | | 20.0 |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 24.0 | | 15.0 | | 34.0 | | 15.0 |
| Max Q Clear Time (g_c+I1), s | | 28.7 | | 13.8 | | 53.5 | | 18.5 |
| Green Ext Time (p_c), s | | 0.0 | | 0.4 | | 0.0 | | 0.0 |

**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 15.4 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 137 | 107 | 305 | 23 | 116 | 3 | 317 | 365 | 29 | 4 | 317 | 91 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 |
| Grade (%) | | 4% | | | -4% | | | 4% | | | -4% | |
| Storage Length (ft) | 0 | | 125 | 0 | | 0 | 0 | | 75 | 0 | | 0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 1 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 35 | | | 25 | | | 35 | | | 25 | |
| Link Distance (ft) | | 300 | | | 208 | | | 264 | | | 673 | |
| Travel Time (s) | | 5.8 | | | 5.7 | | | 5.1 | | | 18.4 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 0% | 0% | 0% | 2% | 1% | 0% | 0% | 2% | 5% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | pm+ov | Perm | NA | | pm+pt | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | 5 | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | | 5 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Split (s) | 13.0 | 13.0 | 12.0 | 13.0 | 13.0 | | 12.0 | 13.0 | 13.0 | 13.0 | 13.0 | |
| Total Split (s) | 18.0 | 18.0 | 13.0 | 18.0 | 18.0 | | 13.0 | 42.0 | 42.0 | 29.0 | 29.0 | |
| Total Split (%) | 30.0% | 30.0% | 21.7% | 30.0% | 30.0% | | 21.7% | 70.0% | 70.0% | 48.3% | 48.3% | |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | -1.0 | | -1.0 | |
| Total Lost Time (s) | 6.0 | 5.0 | 4.0 | | 5.0 | | 4.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | | | Lead | | | | Lead | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | Yes | | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 45 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 16: Reed Road & Red Hill Drive & Parkway Avenue

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 137 | 107 | 305 | 23 | 116 | 3 | 317 | 365 | 29 | 4 | 317 | 91 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1729 | 1747 | 1816 | 1836 | 1836 | 1836 | 1729 | 1747 | 1764 | 1836 | 1860 | 1836 |
| Adj Flow Rate, veh/h | 144 | 113 | 279 | 24 | 122 | 2 | 334 | 384 | 29 | 4 | 334 | 81 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 367 | 363 | 553 | 100 | 319 | 5 | 683 | 1092 | 938 | 62 | 590 | 142 |
| Arrive On Green | 0.06 | 0.07 | 0.07 | 0.19 | 0.21 | 0.19 | 0.15 | 0.63 | 0.63 | 0.39 | 0.41 | 0.39 |
| Sat Flow, veh/h | 1172 | 1747 | 1544 | 145 | 1536 | 23 | 1647 | 1747 | 1499 | 4 | 1444 | 347 |
| Grp Volume(v), veh/h | 144 | 113 | 279 | 148 | 0 | 0 | 334 | 384 | 29 | 419 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1172 | 1747 | 1544 | 1704 | 0 | 0 | 1647 | 1747 | 1499 | 1795 | 0 | 0 |
| Q Serve(g_s), s | 1.8 | 3.7 | 8.7 | 0.0 | 0.0 | 0.0 | 6.1 | 6.3 | 0.4 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 6.0 | 3.7 | 8.7 | 4.2 | 0.0 | 0.0 | 6.1 | 6.3 | 0.4 | 10.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 0.16 | | 0.01 | 1.00 | | 1.00 | 0.01 | | 0.19 |
| Lane Grp Cap(c), veh/h | 367 | 363 | 553 | 396 | 0 | 0 | 683 | 1092 | 938 | 764 | 0 | 0 |
| V/C Ratio(X) | 0.39 | 0.31 | 0.50 | 0.37 | 0.00 | 0.00 | 0.49 | 0.35 | 0.03 | 0.55 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 377 | 378 | 566 | 410 | 0 | 0 | 683 | 1092 | 938 | 764 | 0 | 0 |
| HCM Platoon Ratio | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.4 | 23.9 | 17.8 | 20.6 | 0.0 | 0.0 | 6.1 | 5.4 | 4.3 | 13.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.5 | 0.7 | 0.6 | 0.0 | 0.0 | 0.5 | 0.9 | 0.1 | 2.8 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.3 | 3.3 | 6.9 | 4.0 | 0.0 | 0.0 | 5.0 | 5.9 | 0.3 | 10.2 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 26.1 | 24.3 | 18.5 | 21.2 | 0.0 | 0.0 | 6.7 | 6.3 | 4.4 | 16.6 | 0.0 | 0.0 |
| LnGrp LOS | C | C | B | C | | | A | A | A | B | | |
| Approach Vol, veh/h | | 536 | | | 148 | | | 747 | | | 419 | |
| Approach Delay, s/veh | | 21.8 | | | 21.2 | | | 6.4 | | | 16.6 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.5 | | 17.5 | 13.0 | 29.5 | | 17.5 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | 5.0 | 6.0 | | 6.0 |
| Max Green Setting (Gmax), s | | 36.0 | | 12.0 | 8.0 | 23.0 | | 12.0 |
| Max Q Clear Time (g_c+I1), s | | 8.8 | | 11.2 | 8.6 | 12.9 | | 6.2 |
| Green Ext Time (p_c), s | | 3.4 | | 0.3 | 0.0 | 2.5 | | 1.5 |

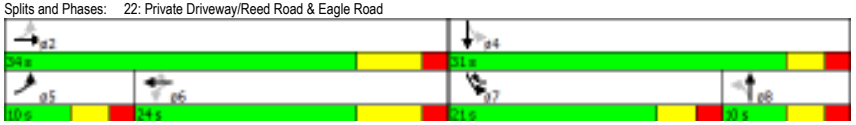
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 199 | 235 | 0 | 0 | 329 | 451 | 1 | 0 | 1 | 553 | 0 | 220 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 15 | 12 | 12 | 12 | 15 |
| Grade (%) | | -10% | | | 6% | | | -3% | | | 3% | |
| Storage Length (ft) | 115 | | 0 | 0 | | 170 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 1 | 0 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | No | | | No |
| Link Speed (mph) | | 35 | | | 35 | | | 25 | | | 35 | |
| Link Distance (ft) | | 236 | | | 288 | | | 255 | | | 276 | |
| Travel Time (s) | | 4.6 | | | 5.6 | | | 7.0 | | | 5.4 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 1% | 3% | 0% | 0% | 1% | 1% | 0% | 0% | 0% | 1% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | pm+pt | NA | | | NA | pm+ov | Perm | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | | 6 | 7 | | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 6 | 6 | 7 | 8 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | | 13.0 | 13.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Split (s) | 10.0 | 22.0 | | 20.0 | 20.0 | 9.0 | 8.0 | 8.0 | | 9.0 | 12.0 | |
| Total Split (s) | 10.0 | 34.0 | | 24.0 | 24.0 | 21.0 | 10.0 | 10.0 | | 21.0 | 31.0 | |
| Total Split (%) | 15.4% | 52.3% | | 36.9% | 36.9% | 32.3% | 15.4% | 15.4% | | 32.3% | 47.7% | |
| Yellow Time (s) | 3.0 | 5.0 | | 5.0 | 5.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | | -1.0 | -1.0 | | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | | 6.0 | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | | | Lag | Lag | Lead | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | Yes | | | Yes | Yes | Yes | Yes | Yes | | Yes | | |
| Recall Mode | None | Min | | Min | Min | None | None | None | | None | None | |

**Intersection Summary**

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 55.9
Natural Cycle: 65
Control Type: Semi Act-Uncoord

Splits and Phases: 22: Private Driveway/Reed Road & Eagle Road








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 199 | 235 | 0 | 0 | 329 | 451 | 1 | 0 | 1 | 553 | 0 | 220 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1871 | 1835 | 1890 | 1746 | 1729 | 1729 | 1827 | 1900 | 1827 | 1755 | 1738 | 1844 |
| Adj Flow Rate, veh/h | 214 | 253 | 0 | 0 | 354 | 313 | 1 | 0 | 1 | 595 | 0 | 226 |
| Adj No. of Lanes | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 1 | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| Cap, veh/h | 347 | 797 | 0 | 0 | 470 | 804 | 120 | 14 | 47 | 729 | 0 | 597 |
| Arrive On Green | 0.10 | 0.43 | 0.00 | 0.00 | 0.27 | 0.27 | 0.05 | 0.00 | 0.05 | 0.28 | 0.00 | 0.40 |
| Sat Flow, veh/h | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 506 | 223 | 729 | 1672 | 0 | 1478 |
| Grp Volume(v), veh/h | 214 | 253 | 0 | 0 | 354 | 313 | 2 | 0 | 0 | 595 | 0 | 226 |
| Grp Sat Flow(s),veh/h/ln | 1782 | 1835 | 0 | 0 | 1729 | 1469 | 1458 | 0 | 0 | 1672 | 0 | 1478 |
| Q Serve(g_s), s | 5.0 | 5.6 | 0.0 | 0.0 | 11.6 | 7.6 | 0.0 | 0.0 | 0.0 | 17.0 | 0.0 | 6.6 |
| Cycle Q Clear(g_c), s | 5.0 | 5.6 | 0.0 | 0.0 | 11.6 | 7.6 | 0.1 | 0.0 | 0.0 | 17.0 | 0.0 | 6.6 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 347 | 797 | 0 | 0 | 470 | 804 | 157 | 0 | 0 | 729 | 0 | 597 |
| V/C Ratio(X) | 0.62 | 0.32 | 0.00 | 0.00 | 0.75 | 0.39 | 0.01 | 0.00 | 0.00 | 0.82 | 0.00 | 0.38 |
| Avail Cap(c_a), veh/h | 355 | 833 | 0 | 0 | 504 | 834 | 202 | 0 | 0 | 730 | 0 | 647 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.8 | 11.5 | 0.0 | 0.0 | 20.6 | 8.1 | 27.6 | 0.0 | 0.0 | 18.5 | 0.0 | 12.9 |
| Incr Delay (d2), s/veh | 3.1 | 0.4 | 0.0 | 0.0 | 6.9 | 0.5 | 0.0 | 0.0 | 0.0 | 7.1 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| %ile BackOfQ(95%),veh/ln | 5.1 | 5.2 | 0.0 | 0.0 | 10.7 | 6.0 | 0.1 | 0.0 | 0.0 | 6.0 | 0.0 | 5.0 |
| LnGrp Delay(d),s/veh | 18.5 | 11.9 | 0.0 | 0.0 | 27.6 | 8.7 | 27.6 | 0.0 | 0.0 | 25.6 | 0.0 | 13.5 |
| LnGrp LOS | B | B | | | C | A | C | | | C | | B |
| Approach Vol, veh/h | | 467 | | | 667 | | | 2 | | | 821 | |
| Approach Delay, s/veh | | 14.9 | | | 18.8 | | | 27.6 | | | 22.3 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 32.7 | | 28.9 | 10.0 | 22.7 | 21.0 | 7.9 |
| Change Period (Y+Rc), s | | 7.0 | | 5.0 | 5.0 | 7.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 27.0 | | 26.0 | 5.0 | 17.0 | 16.0 | 5.0 |
| Max Q Clear Time (g_c+I1), s | | 8.1 | | 9.1 | 7.5 | 14.1 | 19.5 | 2.5 |
| Green Ext Time (p_c), s | | 6.4 | | 0.8 | 0.0 | 1.7 | 0.0 | 0.2 |

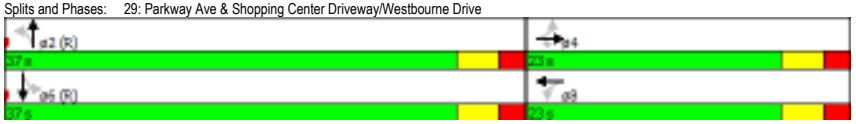
**Intersection Summary**

| | |
|---|---|
| HCM 2010 Ctrl Delay | 19.3 |
| HCM 2010 LOS | B |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 129 | 55 | 169 | 9 | 43 | 22 | 114 | 347 | 4 | 24 | 234 | 124 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 12 | 16 | 12 | 16 | 12 | 12 | 15 | 12 | 12 | 16 | 12 |
| Grade (%) | | -4% | | | -1% | | | -4% | | | -7% | |
| Storage Length (ft) | 0 | | 50 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Link Speed (mph) | | 25 | | | 25 | | | 25 | | | 25 | |
| Link Distance (ft) | | 184 | | | 229 | | | 361 | | | 623 | |
| Travel Time (s) | | 5.0 | | | 6.2 | | | 9.8 | | | 17.0 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 11% | 0% | 5% | 0% | 1% | 0% | 0% | 1% | 1% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | 13.0 | 13.0 | | 13.0 | 13.0 | |
| Total Split (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0 | | 37.0 | 37.0 | | 37.0 | 37.0 | |
| Total Split (%) | 38.3% | 38.3% | 38.3% | 38.3% | 38.3% | | 61.7% | 61.7% | | 61.7% | 61.7% | |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | | | -1.0 | | | -1.0 | |
| Total Lost Time (s) | | 4.0 | 4.0 | | 4.0 | | | 4.0 | | | 4.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 60 | |
| Offset: 25 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 40 | |
| Control Type: Actuated-Coordinated | |

Splits and Phases: 29: Parkway Ave & Shopping Center Driveway/Westbourne Drive








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 129 | 55 | 169 | 9 | 43 | 22 | 114 | 347 | 4 | 24 | 234 | 124 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1836 | 1836 | 1891 | 1809 | 1829 | 1809 | 1836 | 1895 | 1836 | 1863 | 1920 | 1863 |
| Adj Flow Rate, veh/h | 139 | 59 | 182 | 10 | 46 | 24 | 123 | 373 | 4 | 26 | 252 | 133 |
| Adj No. of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 265 | 96 | 483 | 76 | 244 | 108 | 252 | 732 | 7 | 92 | 651 | 325 |
| Arrive On Green | 0.28 | 0.30 | 0.30 | 0.28 | 0.30 | 0.28 | 0.55 | 0.57 | 0.55 | 1.00 | 1.00 | 1.00 |
| Sat Flow, veh/h | 540 | 321 | 1607 | 29 | 811 | 360 | 313 | 1294 | 13 | 50 | 1150 | 574 |
| Grp Volume(v), veh/h | 198 | 0 | 182 | 80 | 0 | 0 | 500 | 0 | 0 | 411 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 861 | 0 | 1607 | 1199 | 0 | 0 | 1619 | 0 | 0 | 1774 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 5.4 | 0.3 | 0.0 | 0.0 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 14.6 | 0.0 | 5.4 | 14.9 | 0.0 | 0.0 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 0.70 | | 1.00 | 0.12 | | 0.30 | 0.25 | | 0.01 | 0.06 | | 0.32 |
| Lane Grp Cap(c), veh/h | 347 | 0 | 483 | 408 | 0 | 0 | 964 | 0 | 0 | 1038 | 0 | 0 |
| V/C Ratio(X) | 0.57 | 0.00 | 0.38 | 0.20 | 0.00 | 0.00 | 0.52 | 0.00 | 0.00 | 0.40 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 370 | 0 | 509 | 434 | 0 | 0 | 964 | 0 | 0 | 1038 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.99 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.6 | 0.0 | 16.5 | 15.8 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 0.5 | 0.2 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.1 | 0.0 | 4.4 | 1.9 | 0.0 | 0.0 | 9.7 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 21.4 | 0.0 | 17.0 | 16.0 | 0.0 | 0.0 | 9.9 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 |
| LnGrp LOS | C | | B | B | | | A | | | A | | |
| Approach Vol, veh/h | | 380 | | | 80 | | | 500 | | | 411 | |
| Approach Delay, s/veh | | 19.3 | | | 16.0 | | | 9.9 | | | 1.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 37.9 | | 22.1 | | 37.9 | | 22.1 |
| Change Period (Y+Rc), s | | 5.0 | | 5.0 | | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | | 32.0 | | 18.0 | | 32.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | | 12.6 | | 16.6 | | 2.5 | | 16.9 |
| Green Ext Time (p_c), s | | 4.1 | | 0.3 | | 4.4 | | 0.2 |

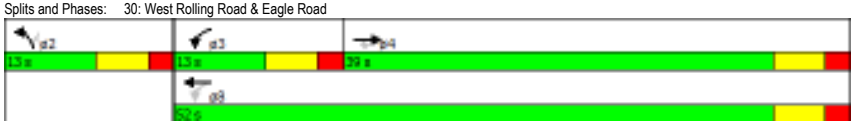
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.2 |
| HCM 2010 LOS | B |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 231 | 70 | 166 | 341 | 104 | 177 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 12 | 10 | 12 | 12 | 10 | 11 |
| Grade (%) | -4% | | | 4% | 12% | |
| Storage Length (ft) | | 200 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 1 | 1 |
| Taper Length (ft) | | | 25 | | 25 | |
| Right Turn on Red | | Yes | | | | Yes |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 1492 | | | 540 | 477 | |
| Travel Time (s) | 33.9 | | | 12.3 | 10.8 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 0% | 0% | 0% |
| Shared Lane Traffic (%) | | | | | | |
| Turn Type | NA | Perm | pm+pt | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 2 | |
| Permitted Phases | | 4 | 8 | | | 2 |
| Detector Phase | 4 | 4 | 3 | 8 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Minimum Split (s) | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Total Split (s) | 39.0 | 39.0 | 13.0 | 52.0 | 13.0 | 13.0 |
| Total Split (%) | 60.0% | 60.0% | 20.0% | 80.0% | 20.0% | 20.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | | | |
| Recall Mode | None | None | None | None | Min | Min |

**Intersection Summary**

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 40.1
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Splits and Phases: 30: West Rolling Road & Eagle Road








| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 231 | 70 | 166 | 341 | 104 | 177 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1818 | 1836 | 1764 | 1764 | 1692 | 1692 |
| Adj Flow Rate, veh/h | 246 | 74 | 177 | 363 | 111 | 188 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 1 | 0 | 0 | 0 | 0 | 0 |
| Cap, veh/h | 697 | 599 | 178 | 271 | 400 | 357 |
| Arrive On Green | 0.38 | 0.38 | 0.35 | 0.38 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1818 | 1561 | 5 | 706 | 1611 | 1438 |
| Grp Volume(v), veh/h | 246 | 74 | 540 | 0 | 111 | 188 |
| Grp Sat Flow(s),veh/h/ln | 1818 | 1561 | 711 | 0 | 1611 | 1438 |
| Q Serve(g_s), s | 2.6 | 0.8 | 3.5 | 0.0 | 1.5 | 3.1 |
| Cycle Q Clear(g_c), s | 2.6 | 0.8 | 3.5 | 0.0 | 1.5 | 3.1 |
| Prop In Lane | | 1.00 | 0.33 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 697 | 599 | 0 | 0 | 400 | 357 |
| V/C Ratio(X) | 0.35 | 0.12 | 0.00 | 0.00 | 0.28 | 0.53 |
| Avail Cap(c_a), veh/h | 2275 | 1953 | 0 | 0 | 475 | 424 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 6.0 | 5.4 | 0.0 | 0.0 | 8.2 | 8.8 |
| Incr Delay (d2), s/veh | 0.3 | 0.1 | 0.0 | 0.0 | 0.4 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 2.4 | 0.7 | 0.0 | 0.0 | 1.2 | 2.3 |
| LnGrp Delay(d),s/veh | 6.3 | 5.5 | 0.0 | 0.0 | 8.6 | 10.0 |
| LnGrp LOS | A | A | | | A | B |
| Approach Vol, veh/h | 320 | | | 540 | 299 | |
| Approach Delay, s/veh | 6.1 | | | 0.0 | 9.5 | |
| Approach LOS | A | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 11.7 | | 15.4 | | | | 15.4 |
| Change Period (Y+Rc), s | | 6.0 | | 6.0 | | | | 6.0 |
| Max Green Setting (Gmax), s | | 7.0 | | 33.0 | | | | 46.0 |
| Max Q Clear Time (g_c+I1), s | | 5.6 | | 5.1 | | | | 5.5 |
| Green Ext Time (p_c), s | | 0.2 | | 3.8 | | | | 3.9 |

**Intersection Summary**

HCM 2010 Ctrl Delay 4.1
HCM 2010 LOS A

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 727 | 1443 | 3 | 694 | 1403 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 11 | 11 | 13 | 13 | 12 | 12 |
| Grade (%) | 0% | | 2% | | | 2% |
| Storage Length (ft) | 225 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 2 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Satd. Flow (prot) | 0 | 2577 | 3430 | 0 | 1693 | 3319 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 2577 | 3430 | 0 | 1693 | 3319 |
| Right Turn on Red | | No | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 514 | | 565 | | | 405 |
| Travel Time (s) | 14.0 | | 9.6 | | | 6.9 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 0% | 2% |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 749 | 1491 | 0 | 715 | 1446 |
| Turn Type | | Over | NA | | Prot | NA |
| Protected Phases | | 1 | 2 | | 1 | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | | 1 | 2 | | 1 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 3.0 | 3.0 | | 3.0 | 3.0 |
| Minimum Split (s) | | 16.0 | 15.0 | | 16.0 | 15.0 |
| Total Split (s) | | 62.0 | 58.0 | | 62.0 | 120.0 |
| Total Split (%) | | 51.7% | 48.3% | | 51.7% | 100.0% |
| Yellow Time (s) | | 3.0 | 4.0 | | 3.0 | 4.0 |
| All-Red Time (s) | | 6.0 | 4.0 | | 6.0 | 4.0 |
| Lost Time Adjust (s) | | -1.0 | -1.0 | | -1.0 | -1.0 |
| Total Lost Time (s) | | 8.0 | 7.0 | | 8.0 | 7.0 |
| Lead/Lag | | Lead | Lag | | Lead | |
| Lead-Lag Optimize? | | Yes | Yes | | Yes | |
| Recall Mode | | None | C-Max | | None | C-Max |
| Act Effct Green (s) | | 53.3 | 51.7 | | 53.3 | 120.0 |
| Actuated g/C Ratio | | 0.44 | 0.43 | | 0.44 | 1.00 |
| v/c Ratio | | 0.65 | 1.01 | | 0.95 | 0.44 |
| Control Delay | | 30.7 | 35.6 | | 54.0 | 0.3 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | | 30.7 | 35.6 | | 54.0 | 0.3 |
| LOS | | C | D | | D | A |
| Approach Delay | | | 35.6 | | | 18.0 |
| Approach LOS | | | D | | | B |
| Queue Length 50th (ft) | | 272 | ~575 | | 551 | 0 |
| Queue Length 95th (ft) | | m288 | m#570 | | m#780 | 0 |
| Internal Link Dist (ft) | 434 | | 485 | | | 325 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 1159 | 1478 | | 761 | 3319 |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | | 0.65 | 1.01 | | 0.94 | 0.44 |

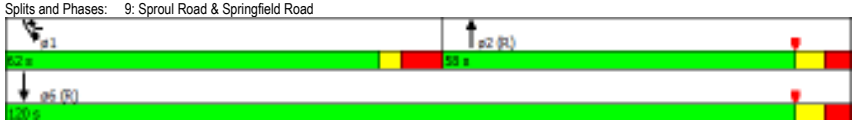




| Intersection Summary | |
|---|---|
| Area Type: Other | |
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.01 | |
| Intersection Signal Delay: 26.1 | Intersection LOS: C |
| Intersection Capacity Utilization 94.8% | ICU Level of Service F |
| Analysis Period (min) 15 | |

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Sproul Road & Springfield Road



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 17 | 2224 | 5 | 19 | 2164 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Lane Width (ft) | 16 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | -2% | | | 2% |
| Storage Length (ft) | 0 | 0 | | 0 | 75 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Link Speed (mph) | 25 | | 40 | | | 40 |
| Link Distance (ft) | 335 | | 405 | | | 870 |
| Travel Time (s) | 9.1 | | 6.9 | | | 14.8 |
| Confl. Peds. (#/hr) | | | | | 2 | |
| Confl. Bikes (#/hr) | | 7 | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 0% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 17 | 2224 | 5 | 19 | 2164 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 2 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 75 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | -2 | - | - | 2 |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 0 | 17 | 2269 | 5 | 19 | 2208 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3415 | 1139 | 0 | 0 | 2274 | 0 |
| Stage 1 | 2272 | - | - | - | - | - |
| Stage 2 | 1143 | - | - | - | - | - |
| Critical Hdwy | 7.3 | 7 | - | - | 3.9 | - |
| Critical Hdwy Stg 1 | 6.3 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.3 | - | - | - | - | - |
| Follow-up Hdwy | 2.8 | 2.9 | - | - | 2.4 | - |
| Pot Cap-1 Maneuver | 4 | 207 | - | - | 248 | - |
| Stage 1 | 51 | - | - | - | - | - |
| Stage 2 | 263 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 4 | 207 | - | - | 248 | - |
| Mov Cap-2 Maneuver | 4 | - | - | - | - | - |
| Stage 1 | 51 | - | - | - | - | - |
| Stage 2 | 243 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24 | 0 | 0.2 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 207 | 248 | - |
| HCM Lane V/C Ratio | - | - | 0.084 | 0.078 | - |
| HCM Control Delay (s) | - | - | 24 | 20.7 | - |
| HCM Lane LOS | - | - | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 0.3 | 0.3 | - |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 53 | 243 | 492 | 29 | 163 | 568 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Grade (%) | -2% | | 1% | | | -1% |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 228 | | 1088 | | | 264 |
| Travel Time (s) | 6.2 | | 21.2 | | | 5.1 |
| Confl. Bikes (#/hr) | | | | 1 | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 0% | 2% | 1% |
| Shared Lane Traffic (%) | | | | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |





| Intersection | |
|---|---|
| Int Delay, s/veh | 4.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Vol, veh/h | 53 | 243 | 492 | 29 | 163 | 568 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Yield | - | None |
| Storage Length | 0 | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | -2 | - | 1 | - | - | -1 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 3 | 2 | 2 | 0 | 2 | 1 |
| Mvmt Flow | 56 | 259 | 523 | 31 | 173 | 604 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1474 | 523 | 0 | 0 | 523 | 0 |
| Stage 1 | 523 | - | - | - | - | - |
| Stage 2 | 951 | - | - | - | - | - |
| Critical Hdwy | 6.03 | 6.02 | - | - | 4.3 | - |
| Critical Hdwy Stg 1 | 5.03 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.03 | - | - | - | - | - |
| Follow-up Hdwy | 3 | 3.1 | - | - | 3 | - |
| Pot Cap-1 Maneuver | 176 | 602 | - | - | 793 | - |
| Stage 1 | 713 | - | - | - | - | - |
| Stage 2 | 460 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 118 | 602 | - | - | 793 | - |
| Mov Cap-2 Maneuver | 240 | - | - | - | - | - |
| Stage 1 | 713 | - | - | - | - | - |
| Stage 2 | 309 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17 | 0 | 2.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 240 | 602 | 793 | - |
| HCM Lane V/C Ratio | - | - | 0.235 | 0.429 | 0.219 | - |
| HCM Control Delay (s) | - | - | 24.5 | 15.4 | 10.8 | 0 |
| HCM Lane LOS | - | - | C | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 2.1 | 0.8 | - |

# APPENDIX K

***PENNDOT/TOWNSHIP SIGNAL TIMING DATA***

***PENNDOT***

Marple Twp File # 0482

| SIGN TABULATION | | | |
|---|---|---|---|
| AN BOL | SERIES NUMBER | SIZE | REMARKS |
| A | R3-7L | 30"x30" | LEFT LANE MUST TURN LEFT |
| B | R10-12 | 30"x36" | LEFT TURN YIELD ON GREEN ● |
| C | R3-7R | 30"x30" | RIGHT LANE MUST TURN RIGHT |
| D | R9-3 | 18"x18" | NO PEDESTRIAN CROSSING |
| E | R3-5L | 30"x36" | LEFT TURN |
| F | R3-5R | 30"x36" | RIGHT TURN |
| G | R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT |
| H | R10-10R | 24"x30" | RIGHT TURN SIGNAL |
| J | D3-4 | 90"x16" | SPROUL RD |
| K | D3-4 | 96"x16" | ← LAWRENCE RD |
| L | D3-4 | 96"x16" | LAWRENCE RD → |

| WEEKLY PROGRAM CHART | | | | | | |
|---|---|---|---|---|---|---|
| EVENT | DAY* | TIME | CYCLE | OFFSET | PROGRAM | REMARKS |
| 1 | 1-5 | 0600 | 90 | 5 | 1 | AM PEAK |
| 2 | 1-5 | 0900 | 80 | 49 | 2 | OFF PEAK |
| 3 | 1-5 | 1500 | 90 | 87 | 3 | PM PEAK |
| 4 | 1-2 | 1800 | 80 | 49 | 2 | OFF PEAK |
| 5 | 6-7 | 0600 | 80 | 49 | 2 | OFF PEAK |
| | | | | | | |
| | | | | | | |

* DAY 1 = MONDAY

Sign "L"

96

Lawrence Rd → 2 / 8 10.67 / 3.33

HELVETICA BOLD (35% REDUCTION)
Type T Arrow
8" U.C.
6" L.C.

Sign "K"

96

16 ← Lawrence Rd 2 / 8 10.67 / 3.33

HELVETICA BOLD (35% REDUCTION)
Type T Arrow
8" U.C.
6" L.C.

EMERGENCY PRE-EMPTION PHASING
MOVEMENT, SEQUENCE AND TIMING DIAGRAM

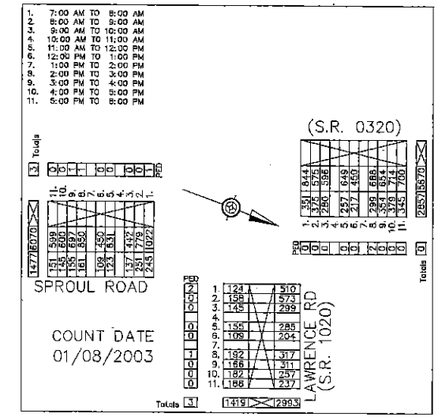
| PHASE | 2 | | | | 6 | | | | 8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 10 | 11 | 12 | | 13 | 14 | 15 | | 16 | 17 | 18 | |
| 1 | R | R | R | SELECTIVE CLEARANCES | G ⓐ | Y ⓐ | R ⓐ | SELECTIVE CLEARANCES | R | R | R | SELECTIVE CLEARANCES |
| 2 | R | R | R | | G | Y ⓐ | R ⓐ | | R | R | R | |
| 3,4 | G | Y ⓐ | R ⓐ | | R | R | R | | G | Y | R | |
| 5,6,10 | R | R | R | | R | R | R | | R | R | R | |
| 7,8 | R | R | R | | R | R | R | | G | Y | R | |
| 9 | R | R | R | | R | R | R | | G ⓑ | Y | R | |
| FIXED TIME | * | 4 | 2 | | * | 4 | 2 | | * | 3 | 2 | |

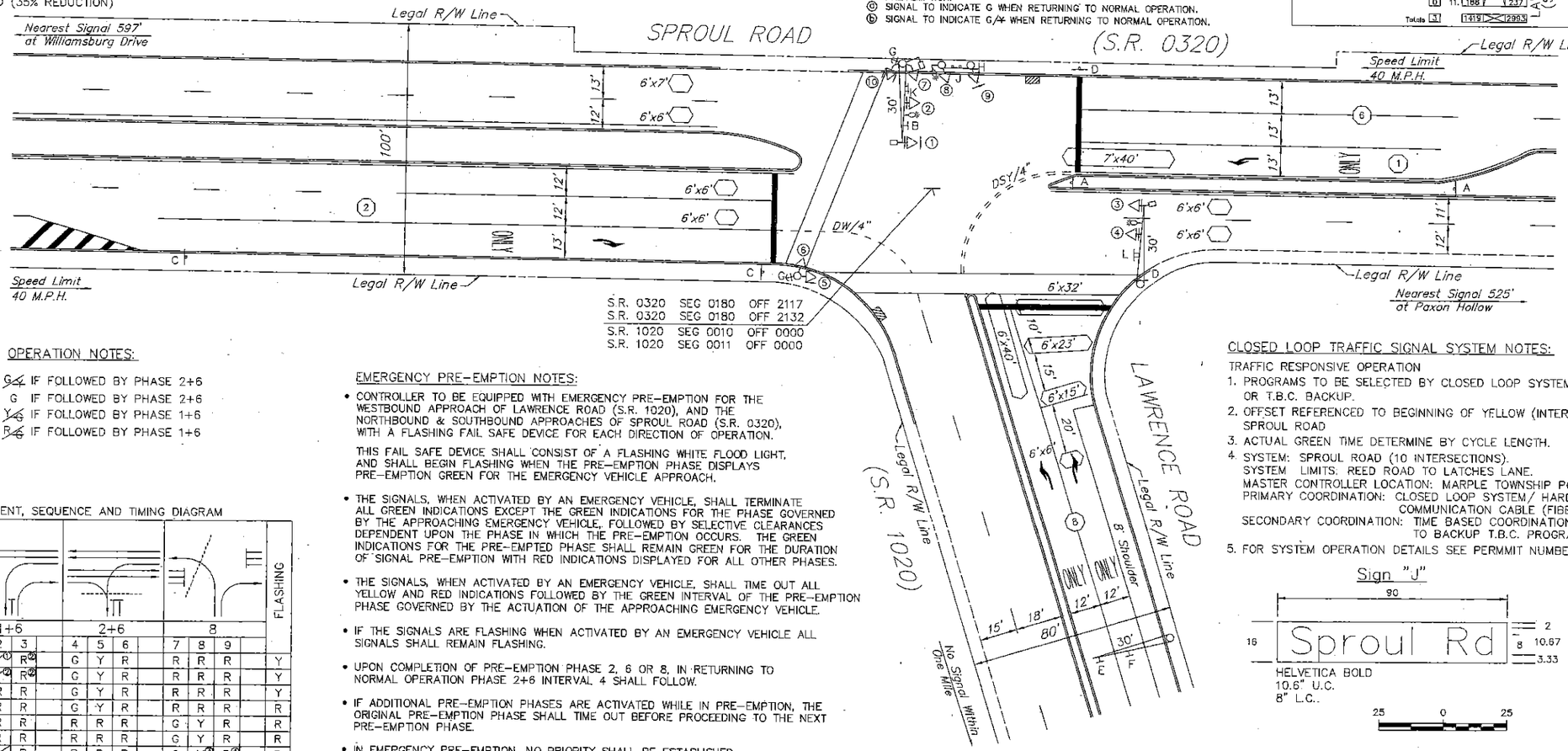
* FOR DURATION OF PRE-EMPTION

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

ⓐ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION.

ⓑ SIGNAL TO INDICATE G/⊸ WHEN RETURNING TO NORMAL OPERATION.




| | | |
|---|---|---|
| S.R. 0320 | SEG 0180 | OFF 2117 |
| S.R. 0320 | SEG 0180 | OFF 2132 |
| S.R. 1020 | SEG 0010 | OFF 0000 |
| S.R. 1020 | SEG 0011 | OFF 0000 |

OPERATION NOTES:

① G/⊸ IF FOLLOWED BY PHASE 2+6
② G IF FOLLOWED BY PHASE 2+6
③ Y/⊸ IF FOLLOWED BY PHASE 1+6
④ R/⊸ IF FOLLOWED BY PHASE 1+6

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| HASE | 1+6 | | | | 2+6 | | | | 8 | | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL | 1 | 2 | 3 | | 4 | 5 | 6 | | 7 | 8 | 9 | | |
| 1 | G/⊸ | Y ① | R ② | | G | Y | R | | R | R | R | | Y |
| 2 | G | Y ② | R ② | | G | Y | R | | R | R | R | | Y |
| 3,4 | R | R | R | | G | Y | R | | R | R | R | | Y |
| 5 | R | R | R | | G | Y | R | | R | R | R | | R |
| 6,10 | R | R | R | | R | R | R | | G | Y | R | | R |
| 7,8 | R | R | R | | R | R | R | | G | Y | R | | R |
| 9 | R/⊸ | R/⊸ | R | | R | R | R | | G | Y ④ | R ④ | | R |
| | | 4 | 2 | | | 4 | 2 | | | 3 | 2 | | |
| MUM | 3 | | | | 10 | | | | 3 | | | | |
| SAGE | 3 | | | | | | | | 3 | | | | |
| MUM 1 | 10 | | | | 35 | | | | 27 | | | | |
| MUM 2 | 7 | | | | 40 | | | | 27 | | | | |
| STRIAN | | | | | | | | | 26* | | | | |
| DRY | NL | | | | MN | | | | NL | | | | |
| GRAM 1 | 20 | 4 | 2 | | 28 | 4 | 2 | | 26 | 3 | 2 | | (90 SEC.) |
| GRAM 2 | 8 | 4 | 2 | | 30 | 4 | 2 | | 26 | 3 | 2 | | (80 SEC.) |
| GRAM 3 | 20 | 4 | 2 | | 28 | 4 | 2 | | 26 | 3 | 2 | | (90 SEC.) |

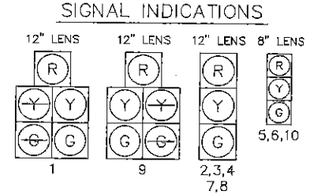
ON PEDESTRIAN ACTUATION ONLY

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE WESTBOUND APPROACH OF LAWRENCE ROAD (S.R. 1020), AND THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPROUL ROAD (S.R. 0320), WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL BEGIN FLASHING WHEN THE PRE-EMPTION PHASE DISPLAYS PRE-EMPTION GREEN FOR THE EMERGENCY VEHICLE APPROACH.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS EXCEPT THE GREEN INDICATIONS FOR THE PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE, FOLLOWED BY SELECTIVE CLEARANCES DEPENDENT UPON THE PHASE IN WHICH THE PRE-EMPTION OCCURS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF SIGNAL PRE-EMPTION WITH RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE ALL SIGNALS SHALL REMAIN FLASHING.
- UPON COMPLETION OF PRE-EMPTION PHASE 2, 6 OR 8, IN RETURNING TO NORMAL OPERATION PHASE 2+6 INTERVAL 4 SHALL FOLLOW.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVED" OPERATION.
- THE FIELD LOCATIONS OF THE PRE-EMPTION DETECTORS MAY DIFFER FROM THE LOCATIONS DEPICTED ON THE CONDITION DIAGRAM, AS THE DETECTORS MAY NEED TO BE RELOCATED AND/OR ADJUSTED TO PROVIDE ACCEPTABLE OPERATION AS DEEMED APPROPRIATE BY DEPARTMENT PERSONNEL.
- IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON, AND THE SIGNAL IS PRE-EMPTED, THE PED WALK INTERVAL SHALL TERMINATE IMMEDIATELY, FOLLOWED BY THE PED CLEAR INTERVAL. THIS INTERVAL SHALL TIME OUT, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES, BEFORE GOING INTO EMERGENCY PRE-EMPTION.

SIGNAL INDICATIONS




SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS _____

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 5,10

CLOSED LOOP TRAFFIC SIGNAL SYSTEM NOTES:

TRAFFIC RESPONSIVE OPERATION

1. PROGRAMS TO BE SELECTED BY CLOSED LOOP SYSTEM MASTER OR T.B.C. BACKUP.
2. OFFSET REFERENCED TO BEGINNING OF YELLOW (INTERVAL 5) ON SPROUL ROAD
3. ACTUAL GREEN TIME DETERMINE BY CYCLE LENGTH.
4. SYSTEM: SPROUL ROAD (10 INTERSECTIONS).
   SYSTEM LIMITS: REED ROAD TO LATCHES LANE.
   MASTER CONTROLLER LOCATION: MARPLE TOWNSHIP POLICE DEPT.
   PRIMARY COORDINATION: CLOSED LOOP SYSTEM/ HARD WIRE COMMUNICATION CABLE (FIBER OPTIC)
   SECONDARY COORDINATION: TIME BASED COORDINATION (DEFAULT TO BACKUP T.B.C. PROGRAM CHART).
5. FOR SYSTEM OPERATION DETAILS SEE PERMMIT NUMBER_____.

Sign "J"

90

16 Sproul Rd 2 / 8 10.67 / 3.33

HELVETICA BOLD
10.6" U.C.
8" L.C.

25 0 25

LEGEND

| | | | |
|---|---|---|---|
| 20' | MAST ARM/ IDENTIFYING LENGTH | | MICROWAVE DETECTOR |
| ② | VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER | | EMERGENCY PREEMPTION BEACON |
| | | | EMERGENCY PREEMPTION DETECTOR |
| ② | PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER | | CURB CUT RAMP |
| | | | UTILITY POLE |
| | PEDESTRIAN PUSHBUTTON/ SIGN | ② | PHASE NUMBER |
| A | SIGN/IDENTIFYING LETTER | | INLET |
| 12'x6' | LOOP SENSOR/SIZE | | |

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8600 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE

MUNICIPALITY: MARPLE TOWNSHIP

INTERSECTION: SPROUL ROAD (S.R. 0320) & LAWRENCE ROAD (S.R. 1020)

REVIEWED: _____ DATE

MUNICIPAL OFFICIAL _____ DATE

RECOMMENDED: _____ DATE

Douglas W. May 10/23/92
DISTRICT TRAFFIC ENGINEER DATE

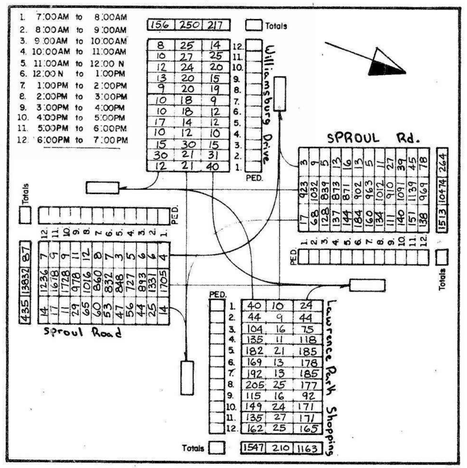
| NO. | REVISION | DES./ REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Revised Closed Loop System | | | | | DWM | 02/16/95 |
| 2 | Added Emergency Pre-Emption | DA | 02/25/01 | MLK | 02/25/01 | DA | 03/02/01 |
| 3 | Added Street Name Signs | PAI | 05/26/01 | MLK | 06/03/01 | PAI | 06/07/01 |
| 4 | New Drawing, Refined Timings | PAI | 02/28/03 | MLK | 04/18/03 | LBR | 04/18/03 |
| 5 | Added Skip Lines | JOO | 10/28/10 | [illegible] | 11/2/10 | [illegible] | 11/2/10 |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

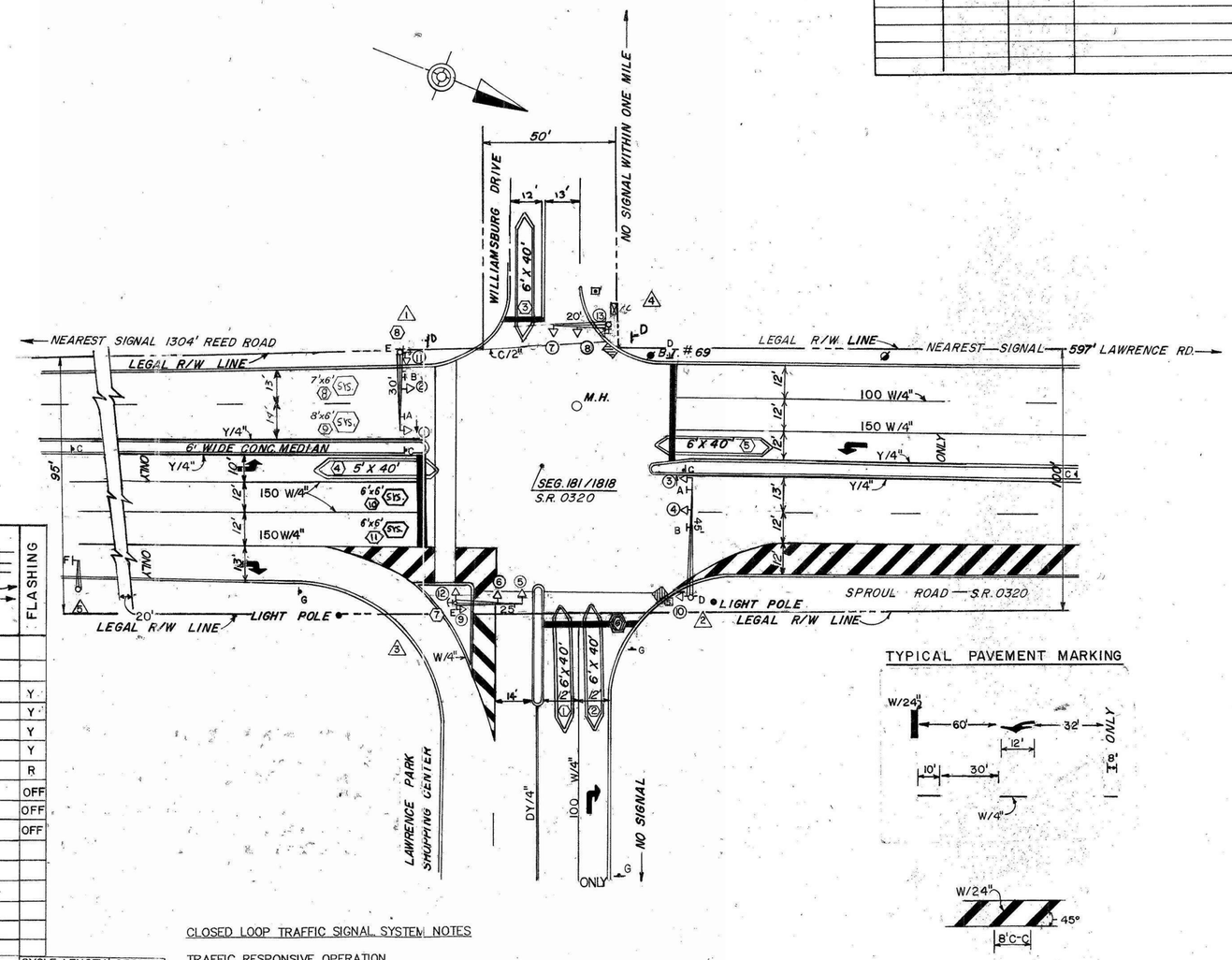
SHEET 2 OF 2 PERMIT # 63-0482 FILE # 0482

| PERMIT NO. 4625 | SHEET 2 OF 2 |
|---|---|
| DATE ISSUED 4-3-57 | DATE REVISED |

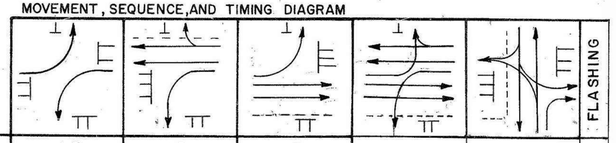
## SIGN TABULATION

| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
|---|---|---|---|
| A | R10-12 | 24" x 30" | Left Turn Yield on Green |
| B | R30-21 | 24" x 30" | Wait for Green |
| C | R3-7L | 30" x 30" | Left Lane Must Turn Left |
| D | R9-3 | 18" x 18" | No Pedestrian Crossing |
| E | R10-3 | 9" x 12" | Push Button for Green |
| F | R 3-5 | 30" x 36" | Right Turn Sign |
| G | R 3-72 | 30" x 30" | Right Lane Must Turn Right |




MOVEMENT, SEQUENCE, AND TIMING DIAGRAM



| PHASE | 1+5 | | | 1+6 | | | 2+5 | | | 2+6 | | | 4 | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
| 1 | R ←G | R ①←Y | R① | G ←G | Y③ | R③ | R | R | R | G | Y② | R② | R | R | R | Y |
| 2 | R | R | R | G | Y③ | R③ | R | R | R | G | Y② | R② | R | R | R | Y |
| 3 | R | R | R | R | R | R | G | Y③ | R③ | G | Y⑥ | R⑥ | R | R | R | Y |
| 4 | R ←G | R④←Y | R④ | R | R | R | G ←G | Y⑤ | R⑤ | G | Y⑥ | R⑥ | R | R | R | Y |
| 5, 6, 7, 8 | R | R | R | R | R | R | R | R | R | R | R | R | G | Y | R | R |
| 9, 10 | R | R | R | R | R | R | G | Y③ | R③ | G | Y⑦ | R⑦ | R | R | R | OFF |
| 11, 12 | R | R | R | R | R | R | R | R | R | R | R | R | G | Y | R | OFF |
| 13 | R | R | R | G | Y③ | R③ | R | R | R | G | Y② | R② | R | R | R | OFF |
| FIXED | | 3 | 2 | | 3 | 2 | | 3 | 2 | | | 2 | | 3 | 3 | |
| MINIMUM | 3 | | | 3 | | | 3 | | | 10 | | | 3 | | | |
| PASSAGE | 3 | | | 3 | | | 3 | | | | | | 3 | | | |
| MAX I | 7 | | | 7 | | | 7 | | | 34 | | | 22 | | | |
| MAX II | 7 | | | 7 | | | 7 | | | 34 | | | 22 | | | |
| MEMORY | NL | | | NL | | | NL | | | MR | | | NL | | | |
| PEDESTRIAN* | | | | | | | | | | | | | 22 | | | |
| PROGRAM 1 | 8 | 3 | 2 | 8 | 3 | 2 | 8 | 3 | 2 | 34 | 4 | 2 | 21 | 3 | 3 | |
| PROGRAM 2 | 8 | 3 | 2 | 8 | 3 | 2 | 8 | 3 | 2 | 24 | 4 | 2 | 21 | 3 | 3 | |
| PROGRAM 3 | 8 | 3 | 2 | 8 | 3 | 2 | 8 | 3 | 2 | 34 | 4 | 2 | 21 | 3 | 3 | |

| CYCLE LENGTH | OFFSET |
|---|---|
| 80 SEC. | 73 |
| 70 SEC. | 1 |
| 80 SEC. | 74 |

* UPON PEDESTRIAN ACTUATION ONLY

① R/G-IF FOLLOWED BY PHASE 1+6
② G-IF FOLLOWED BY PHASE 1+6
③ G-IF FOLLOWED BY PHASE 2+6
④ R/G-IF FOLLOWED BY PHASE 2+5
⑤ G/Y-IF FOLLOWED BY PHASE 2+6
⑥ G-IF FOLLOWED BY PHASE 2+5
⑦ G-IF FOLLOWED BY PHASE 2+5

BACKUP TBC PROGRAM CHART

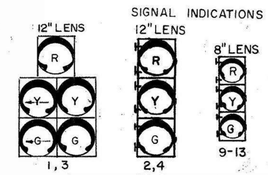
| EVENT | DAY* | HOUR | MINUTE | SECOND | PROGRAM NUMBER |
|---|---|---|---|---|---|
| 1 | 1–5 | 06 | 00 | 00 | 1 |
| 2 | 1–5 | 09 | 00 | 00 | 2 |
| 3 | 1–5 | 15 | 00 | 00 | 3 |
| 4 | 1–5 | 18 | 00 | 00 | 2 |
| 5 | 6–7 | 06 | 00 | 00 | 2 |

* DAY 1 = MONDAY

CLOSED LOOP TRAFFIC SIGNAL SYSTEM NOTES

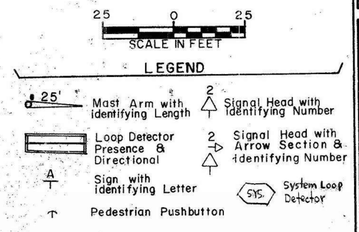
TRAFFIC RESPONSIVE OPERATION

1. PROGRAMS TO BE SELECTED BY CLOSED LOOP SYSTEM MASTER OR T.B.C. BACKUP.
2. OFFSET REFERENCED TO BEGINNING OF GREEN (INTERVAL 10) ON SPROUL ROAD.
3. ACTUAL GREEN TIME DETERMINED BY CYCLE LENGTH.
4. SYSTEM: SPROUL ROAD (10 INTERSECTIONS).
   SYSTEM LIMITS: REED ROAD TO LATCHES LANE.
   MASTER CONTROLLER LOCATION: MARPLE TOWNSHIP POLICE DEPARTMENT.
   PRIMARY COORDINATION: CLOSED LOOP SYSTEM/HARD WIRE COMMUNICATION CABLE (FIBER OPTIC).
   SECONDARY COORDINATION: TIME BASED COORDINATION (DEFAULT TO BACKUP T.B.C. PROGRAM CHART).
5. FOR SYSTEM OPERATION DETAILS SEE PERMIT NUMBER_____.




TYPICAL PAVEMENT MARKING




## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION N° 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT GRADE.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

IN ADDITION TO THIS SIGNAL PERMIT THE PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 38, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 12, 1991

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

Signed out by
Pennoni on 4/11/01.
215-222-3000

ENGINEERING DISTRICT 6-0

INTERSECTION SPROUL ROAD (S.R.0320) AND WILLIAMSBURG DRIVE

COUNTY DELAWARE MUNICIPALITY MARPLE

Drawn by T.S. Date 9-27-89

Checked by [illegible] Date 10-23-92

Approved by [illegible] Date 10-23-92
DISTRICT TRAFFIC ENGR.

FILE 479

REVISED Closed loop system [illegible] 2/16/95
REVISED
REVISED

| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R3-7L | 30"x30" | LEFT LANE MUST TURN LEFT |
| B | R3-7R | 30"x30" | RIGHT LANE MUST TURN RIGHT |
| C | R9-3 | 18"x18" | NO PEDESTRIAN CROSSING |
| D | R10-10L | 30"x36" | LEFT TURN SIGNAL |
| E | R3-5L | 30"x36" | LEFT TURN |
| F | R3-5R | 30"x36" | RIGHT TURN |
| G | R10-10R | 24"X30" | RIGHT TURN SIGNAL |
| K | W16-1 | 18"x18" | HAZARD MARKER |
| L | D3-4 | 72"x16" | SPROUL RD |
| M | D3-4 | 90"x16" | ← REED RD |
| N | D3-4 | 90"x16" | REED RD → |
| O | R3-4 | 24"x24" | NO U-TURN |

| WEEKLY PROGRAM CHART | | | | | | |
|---|---|---|---|---|---|---|
| EVENT | DAY* | TIME | CYCLE | OFFSET | PROGRAM | REMARKS |
| 1 | 1-5 | 0600 | 80 | 26 | 1 | AM PEAK |
| 2 | 1-5 | 0900 | 70 | 32 | 2 | OFF PEAK |
| 3 | 1-5 | 1300 | 80 | 41 | 3 | PM PEAK |
| 4 | 1-5 | 1800 | 70 | 32 | 2 | OFF PEAK |
| 5 | 6-7 | 0600 | 70 | 32 | 2 | OFF PEAK |
| | | | | | | |
| | | | | | | |

* DAY 1 = MONDAY

- SIGNAL TO BE COORDINATED WITH THE ADJACENT SIGNAL ALONG SPROUL ROAD (S.R. 0320) AT WILLIAMSBURG DRIVE BY MEANS OF FIBER OPTIC INTERCONECTION

## EMERGENCY PRE-EMPTION PHASING

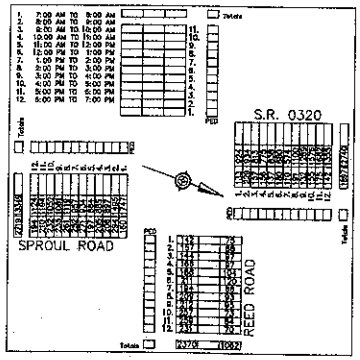
MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2 | | | | 6 | | | | 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 10 | 11 | 12 | | 13 | 14 | 15 | | 16 | 17 | 18 | |
| 1 | ⊖ | ✳ | R | SELECTIVE CLEARANCES | R | R | R | SELECTIVE CLEARANCES | R | R | R | |
| 2,3 | G | Y⊖ | R⊖ | | R | R | R | | R | R | R | |
| 4,5 | R | R | R | | G | Y⊖ | R⊖ | | R | R | R | |
| 6 | R | R | R | | R | R | R | | R | R | R | |
| 7,8 | R | R | R | | R | R | R | | G | Y | R | |
| 9 | R | R | R | | R | R | R | | G⊖ | Y | R | |
| FIXED TIME | * | 4 | 2 | | * | 4 | 2 | | * | 3 | 2 | |

* FOR DURATION OF PRE-EMPTION

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

⊖ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION.




## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNL PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRA ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLE AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNA HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR T EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGN SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 f

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMU VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASU AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTE SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS EORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WIT THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

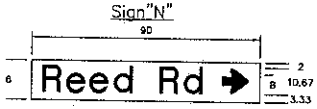
THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MU CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATIO

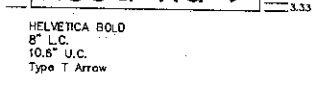
CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YE OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BO OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WIT TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

Sign "N"



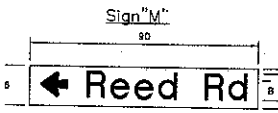

HELVETICA BOLD
8" L.C.
10.6" U.C.
Type T Arrow

Sign "M"

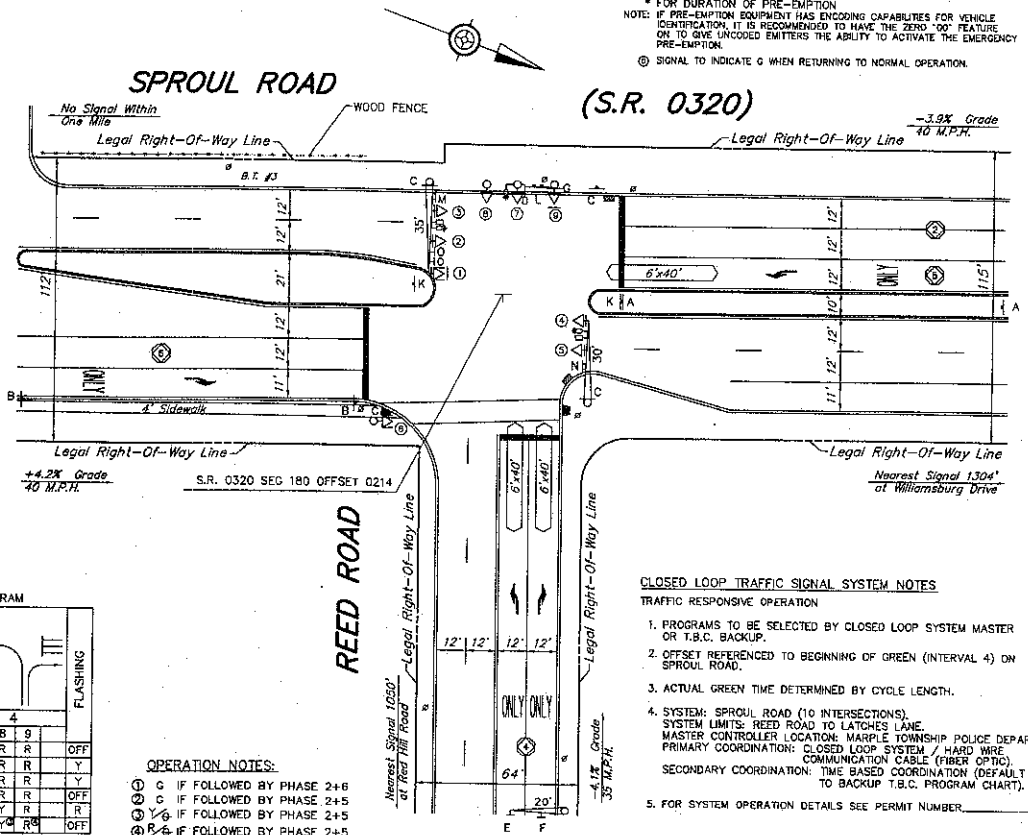



HELVETICA BOLD
Type T Arrow
8" L.C.
10.6" U.C.

Sign "L"




HELVETICA BOLD
6" L.C.
8" U.C.



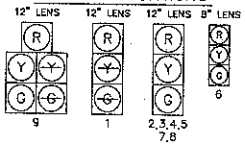

MOVEMENT, SEQUENCE AND TIMING DIACRAM

| PHASE | 2+5 | | | | 2+6 | | | | 4 | | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | | 4 | 5 | 6 | | 7 | 8 | 9 | | |
| 1 | ⊖ | ✳ | R | | R | R | R | | R | R | R | | OFF |
| 2,3 | G | Y⊖ | R⊖ | | C | Y⊖ | R⊖ | | R | R | R | | Y |
| 4,5 | R | R | R | | C | Y | R | | R | R | R | | Y |
| 6 | R | R | R | | G | Y | R | | R | R | R | | OFF |
| 7,8 | R | R | R | | R | R | R | | G | Y | R | | R |
| 9 | R⊖ | R⊖ | R | | R | R | R | | C | Y⊖ | R⊖ | | OFF |
| FIXED | | 3 | 2 | | | 4 | 2 | | | 3 | 2 | | |
| MINIMUM | 3 | | | | 30 | | | | 3 | | | | |
| PASSAGE | 3 | | | | | | | | 3 | | | | |
| MAXIMUM 1 | 10 | | | | | | | | 10 | | | | |
| MAXIMUM 2 | 10 | | | | | | | | 20 | | | | |
| MEMORY | NL | | | | MN | | | | NL | | | | |
| PROGRAM 1 | 12 | 3 | 2 | | 50 | 4 | 2 | | 12 | 3 | 2 | | (90 SEC) |
| PROGRAM 2 | 12 | 3 | 2 | | 35 | 4 | 2 | | 17 | 3 | 2 | | (80 SEC) |
| PROGRAM 3 | 11 | 3 | 2 | | 36 | 4 | 2 | | 27 | 3 | 2 | | (90 SEC) |

OPERATION NOTES:

① G IF FOLLOWED BY PHASE 2+6
② C IF FOLLOWED BY PHASE 2+5
③ Y/G IF FOLLOWED BY PHASE 2+5
④ R/G IF FOLLOWED BY PHASE 2+5

SIGNAL INDICATIONS




SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 1,6

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPROUL ROAD (S.R. 0320), AND THE WESTBOUND APPROACH OF REED ROAD, WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL BEGIN FLASHING WHEN THE PRE-EMPTION PHASE DISPLAYS PRE-EMPTION GREEN FOR THE EMERGENCY VEHICLE APPROACH.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS EXCEPT THE GREEN INDICATIONS FOR THE PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE, FOLLOWED BY SELECTIVE CLEARANCES DEPENDENT UPON THE PHASE IN WHICH THE PRE-EMPTION OCCURS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF SIGNAL PRE-EMPTION WITH RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE ALL SIGNALS SHALL REMAIN FLASHING.
- UPON COMPLETION OF PRE-EMPTION PHASE 2, 4 OR 6, IN RETURNING TO NORMAL OPERATION PHASE 2+6 INTERVAL 4 SHALL FOLLOW.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVED" OPERATION.
- THE FIELD LOCATIONS OF THE PRE-EMPTION DETECTORS MAY DIFFER FROM THE LOCATIONS DEPICTED ON THE CONDITION DIAGRAM, AS THE DETECTORS MAY NEED TO BE RELOCATED AND/OR ADJUSTED TO PROVIDE ACCEPTABLE OPERATION AS DEEMED APPROPRIATE BY DEPARTMENT PERSONNEL.

CLOSED LOOP TRAFFIC SIGNAL SYSTEM NOTES

TRAFFIC RESPONSIVE OPERATION

1. PROGRAMS TO BE SELECTED BY CLOSED LOOP SYSTEM MASTER OR T.B.C. BACKUP.
2. OFFSET REFERENCED TO BEGINNING OF GREEN (INTERVAL 4) ON SPROUL ROAD.
3. ACTUAL GREEN TIME DETERMINED BY CYCLE LENGTH.
4. SYSTEM: SPROUL ROAD (10 INTERSECTIONS).
   SYSTEM LIMITS: REED ROAD TO LATCHES LANE.
   MASTER CONTROLLER LOCATION: MARPLE TOWNSHIP POLICE DEPARTMENT.
   PRIMARY COORDINATION: CLOSED LOOP SYSTEM / HARD WIRE COMMUNICATION CABLE (FIBER OPTIC).
   SECONDARY COORDINATION: TIME BASED COORDINATION (DEFAULT TO BACKUP T.B.C. PROGRAM CHART).
5. FOR SYSTEM OPERATION DETAILS SEE PERMIT NUMBER_____

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION BEACON
- EMERGENCY PREEMPTION DETECTOR
- CURB CUT RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

PENNSYLVANIA DEPARTMENT OF TRANSPORTATI
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE
MUNICIPALITY: MARPLE TOWNSHIP
INTERSECTION: SPROUL ROAD (S.R. 032D) AND REED ROAD

REVIEWED: _____ DATE
MUNICIPAL OFFICIAL DATE
RECOMMENDED: _____ DATE
Douglas May 10/23/
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES/ REVW. | DATE | REVW. | DATE | RECOM. | |
|---|---|---|---|---|---|---|---|
| 1 | Closed Loop System | | | | | DWM | 8 |
| 2 | Added Street Name | PAI | 6/28/01 | MK | 8/03/01 | LRB | 8 |
| 3 | New Drawing. Added Pre-Emption | PAI | 4/28/02 | MK | 5/11/02 | LRB | 8 |
| 4 | Refined Timings | PAI | 2/28/03 | MK | 4/18/03 | LRB | 4 |
| 5 | Added No U-Turn Sign | JLH | 11/24/08 | [illegible] | [illegible] | [illegible] | [illegible] |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 63-0481 | FILE # 0481

Marple Township

390

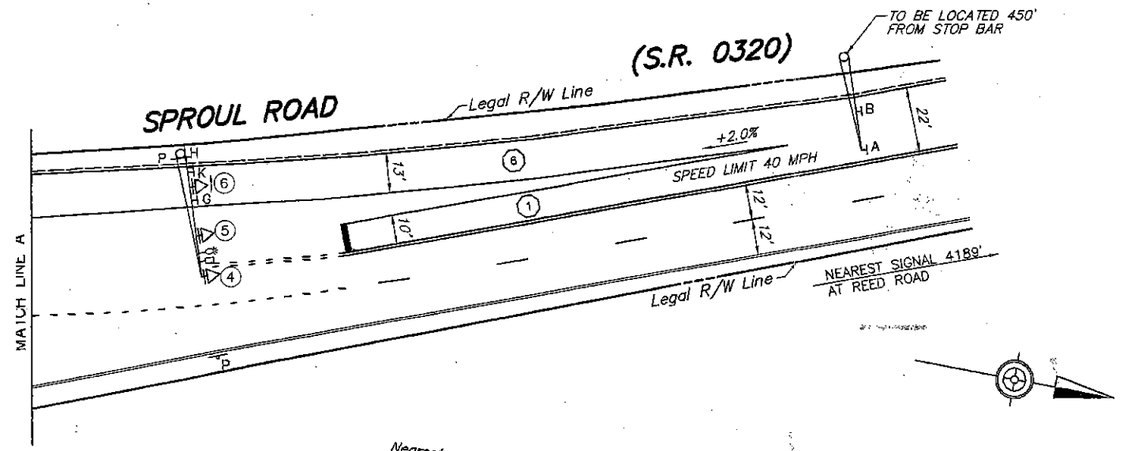
| SIGN TABULATION | | | |
|---|---|---|---|
| AN MBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R3-5S | 30"x36" | STRAIGHT THRU |
| B | R3-5R | 30"x36" | RIGHT TURN |
| D | R3-2 | 30"x30" | NO LEFT TURN |
| E | R10-11 | 30"x36" | NO TURN ON RED |
| P | R9-3 | 18"x18" | NO PEDESTRIAN CROSSING |
| G | R10-10R | 30"x36" | RIGHT TURN SIGNAL |
| H | R1-1A | 30"x36" | RIGHT LANE KEEP MOVING |
| K | D3-5 | 96"x28" | SPRINGFIELD RD/SPROUL RD |
| L | D3-4 | 96"x16" | SPRINGFIELD RD |

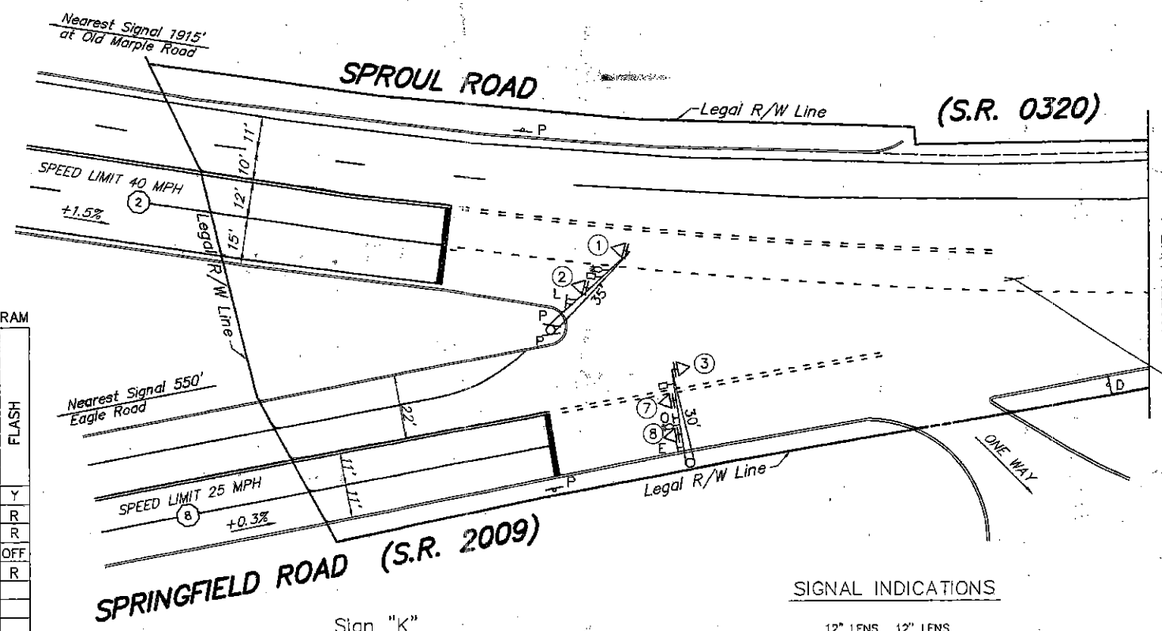
| WEEKLY PROGRAM CHART | | | | | | |
|---|---|---|---|---|---|---|
| EVENT | DAY* | TIME | CYCLE | OFFSET** | PROGRAM | REMARKS |
| 1 | 1-5 | 0600 | 80 | 24 | 1 | AM PEAK |
| 2 | 1-5 | 0900 | 70 | 13 | 2 | OFF PEAK |
| 3 | 1-5 | 1500 | 80 | 24 | 3 | PM PEAK |
| 4 | 1-5 | 1800 | 70 | 13 | 2 | OFF PEAK |
| 5 | 6-7 | 0900 | 80 | 24 | 1 | WEEKEND PEAK |
| 6 | 6-7 | 1800 | 70 | 13 | 2 | OFF PEAK |
| | | | | | | |

* DAY 1 = MONDAY

** OFFSETS REFERENCED TO THE BEGINNING OF PHASE 2+6, INTERVAL 2.

● SIGNAL TO BE COORDINATED WITH THE ADJACENT SIGNAL ALONG SPROUL ROAD AT OLD MARPLE ROAD BY MEANS OF TIME BASED COORDINATION.



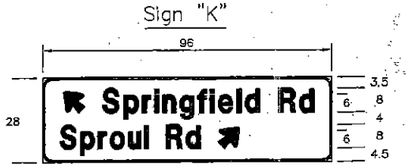




MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2+6 | | | | 1+8 | | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | | 4 | 5 | 6 | | |
| 1,2 | G | Y | R | | R | R | R | | Y |
| 3 | R | R | R | | G | Y | R | | R |
| 4,5 | R | R | R | | G | Y | R | | R |
| 6 | ⊖ | ⊖ | ⊖ | | ⊖ | ⊖ | ⊖ | | OFF |
| 7,8 | R | R | R | | G | Y | R | | R |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

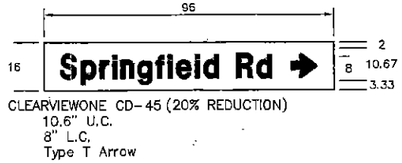
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ED | | 4 | 4 | | | 3 | 6 | | |
| IMUM | | | | | | | | | |
| SSAGE | | | | | | | | | |
| XIMUM 1 | 26 | | | | 31 | | | | |
| XIMUM 2 | 22 | | | | 35 | | | | |
| DESTRIAN | | | | | | | | | |
| MORY | MX | | | | MX | | | | |
| | | | | | | | | | |
| OGRAM 1 | 29 | 4 | 4 | | 34 | 3 | 6 | | (80 SEC.) |
| OGRAM 2 | 28 | 4 | 4 | | 25 | 3 | 6 | | (70 SEC.) |
| OGRAM 3 | 25 | 4 | 4 | | 38 | 3 | 6 | | (80 SEC.) |

Sign "K"




CLEARVIEWONE CD-45 (20% REDUCTION)
Type T Arrow
8" U.C.
6" L.C.
8" U.C.
6" L.C.
Type T Arrow

Sign "L"




CLEARVIEWONE CD-45 (20% REDUCTION)
10.6" U.C.
8" L.C.
Type T Arrow

EMERGENCY PRE-EMPTION PHASING

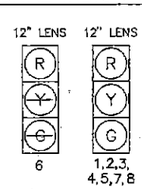
MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2+6 | | | | 1+6 | | | | 8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 7 | 8 | 9 | | 10 | 11 | 12 | | 13 | 14 | 15 | |
| 1,2 | G | Y | R | | R | R | R | | R | R | R | |
| 3 | R | R | R | | G | Y | R | | R | R | R | |
| 4,5 | R | R | R | | G | Y | R | | R | R | R | |
| 6 | ⊖ | ⊖ | ⊖ | | ⊖ | ⊖ | ⊖ | | ⊖ | ⊖ | ⊖ | |
| 7,8 | R | R | R | | R | R | R | | G | Y | R | |
| | | | | | | | | | | | | |
| FIXED | ** | 4 | 4 | | ** | 3 | 6 | | ** | 3 | 6 | |

** FOR DURATION OF PRE-EMPTION

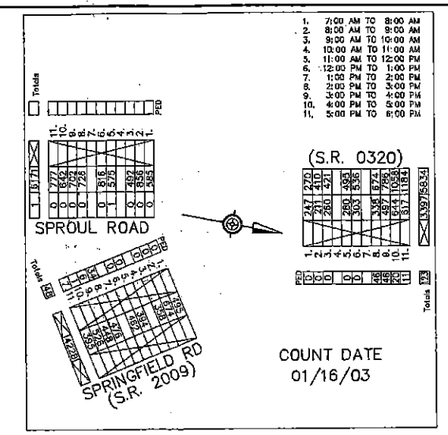
NOTE:
IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

SIGNAL INDICATIONS




SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1,2,7,8

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS _____




EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPROUL ROAD AND THE WESTBOUND APPROACH OF SPRINGFIELD ROAD WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.
- THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
- LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION, PHASE 1+6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

S.R. 0320 SEG 0170 OFF 0000

S.R. 2009 SEG 0130 OFF 1641

25 0 25

LEGEND

- 20' MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- 12'x6' LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION BEACON
- EMERGENCY PREEMPTION DETECTOR
- CURB CUT RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

# GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 19, 1996.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE

MUNICIPALITY: MARPLE TOWNSHIP

INTERSECTION: SPROUL ROAD (S.R. 0320) AND SPRINGFIELD ROAD (S.R. 2009)

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

DATE

Douglas May 3/9/90

DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Upgrading of Intersection | | | | | DWM | 03/09/9 |
| 2 | Added Street Name Signs | PAI | 05/26/01 | MLK | 08/03/01 | LRB | 08/07/0 |
| 3 | New Drawing, Refined Timings | PAI | 02/28/03 | [illegible] | 3/18/03 | [illegible] | 4/18/03 |
| 4 | Added Pre-emption | MCM | 11/10/03 | [illegible] | 11/18/04 | [illegible] | 1/16/0 |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

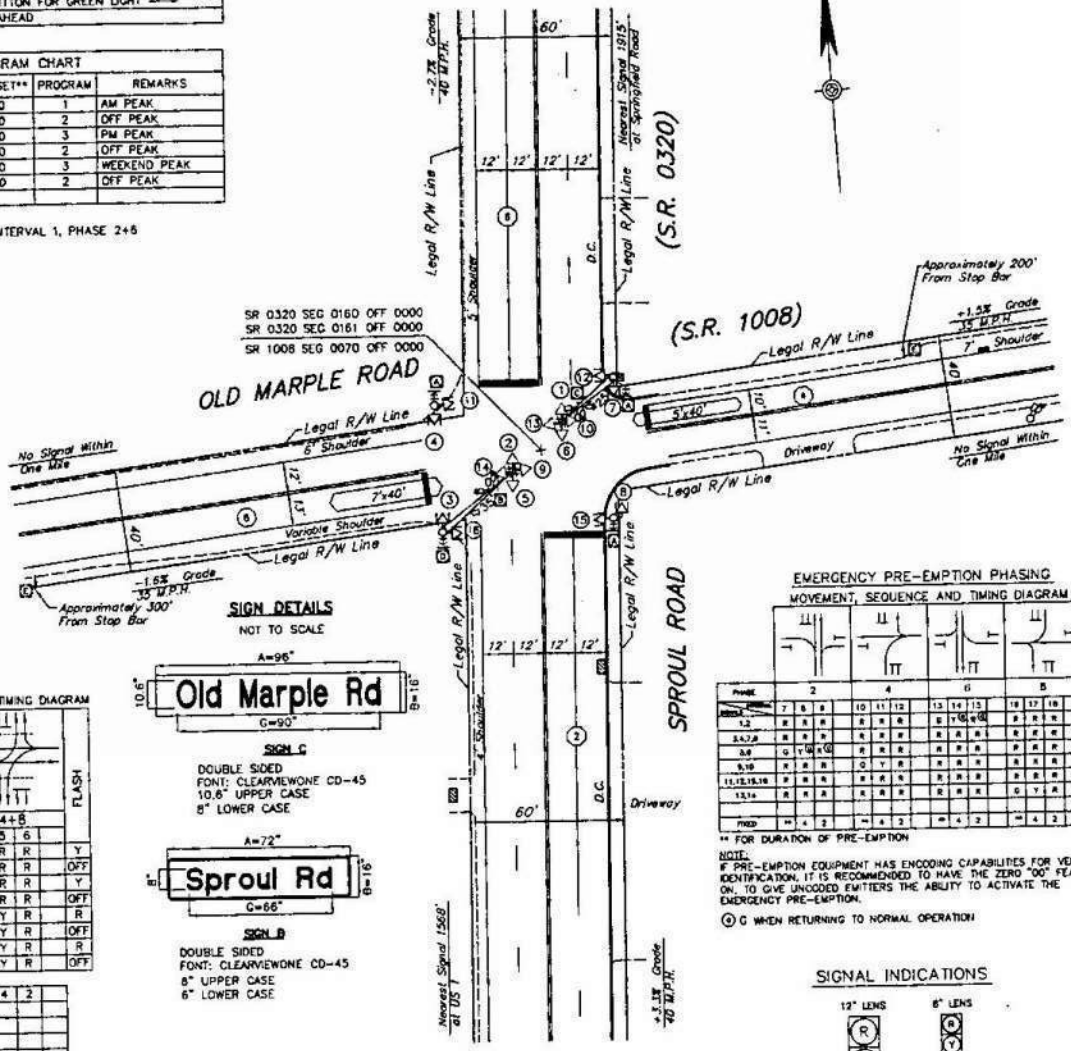
SHEET 2 OF 2 PERMIT # 63-0390 FILE # 0390

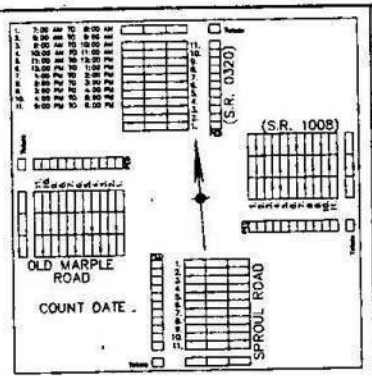
| SIGN TABULATION | | |
|---|---|---|
| SERIES NUMBER | SIZE | REMARKS |
| R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT |
| D3-4 | 72"x16" | OVERHEAD STREET NAME SIGN (SEE DETAILS) |
| D3-4 | 96"x16" | OVERHEAD STREET NAME SIGN (SEE DETAILS) |
| R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT |
| W3-3 | 36"x36" | SIGNAL AHEAD |

SIDED

| WEEKLY PROGRAM CHART | | | | | |
|---|---|---|---|---|---|
| DAY* | TIME | CYCLE | OFFSET** | PROGRAM | REMARKS |
| 1-5 | 0600 | 80 | 0 | 1 | AM PEAK |
| 1-5 | 0900 | 70 | 0 | 2 | OFF PEAK |
| 1-5 | 1500 | 80 | 0 | 3 | PM PEAK |
| 1-5 | 1800 | 70 | 0 | 2 | OFF PEAK |
| 6,7 | 0900 | 80 | 0 | 3 | WEEKEND PEAK |
| 6,7 | 1800 | 70 | 0 | 2 | OFF PEAK |
| | | | | | |
| | | | | | |

= MONDAY
REFRENCED TO START OF INTERVAL 1, PHASE 2+6




## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 19, 1996.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

## EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPROUL ROAD AND THE EASTBOUND & WESTBOUND APPROACHES OF OLD MARPLE ROAD WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.
  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF SIGNALS HAVE BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED, THE PEDESTRIAN TIME SHALL BE SPLIT BETWEEN "PED WALK" AND "PED CLEAR". THE "PED WALK" INTERVAL SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "PED CLEAR" INTERVAL. THIS INTERVAL SHALL TIME OUT FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE GOING INTO EMERGENCY PRE-EMPTION.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION, PHASE 2,4,6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

## EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2 | | | 4 | | | 6 | | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1,2 | R | R | R | R | R | R | R | R | R | R | R | R |
| 3,4,7,8 | R | R | R | R | R | R | R | R | R | R | R | R |
| 5,6 | G | Y | R | R | R | R | R | R | R | R | R | R |
| 9,10 | R | R | R | G | Y | R | R | R | R | R | R | R |
| 11,12,13,14 | R | R | R | R | R | R | R | R | R | G | Y | R |
| 15,16 | R | R | R | R | R | R | R | R | R | R | R | R |
| FIXED | ** | 4 | 2 | ** | 4 | 2 | ** | 4 | 2 | ** | 4 | 2 |

** FOR DURATION OF PRE-EMPTION

NOTE:
IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

④ C WHEN RETURNING TO NORMAL OPERATION

## SIGN DETAILS

NOT TO SCALE

A=96"
Old Marple Rd
G=90"
10.6" 8=16"

SIGN C
DOUBLE SIDED
FONT: CLEARVIEWONE CD-45
10.6" UPPER CASE
8" LOWER CASE

A=72"
Sproul Rd
G=66"
8" 8=16"

SIGN D
DOUBLE SIDED
FONT: CLEARVIEWONE CD-45
8" UPPER CASE
6" LOWER CASE

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| E | 2+6 | | | | 4+8 | | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|
| TERVAL | 1 | 2 | 3 | | 4 | 5 | 6 | | |
| | G | Y | R | | R | R | R | | Y |
| | G | Y | R | | R | R | R | | OFF |
| | G | Y | R | | R | R | R | | Y |
| | G | Y | R | | R | R | R | | OFF |
| | R | R | R | | G | Y | R | | R |
| | R | R | R | | G | Y | R | | OFF |
| | R | R | R | | G | Y | R | | R |
| | R | R | R | | G | Y | R | | OFF |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 4 | 2 | | | 4 | 2 | | | |
| 12** | | | | | 3 | | | | | |
| | | | | | 3 | | | | | |
| | | | | | 24 | | | | | |
| | | | | | 30 | | | | | |
| | | | | | 17* | | | | | |
| MN | | | | | NL | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| AM 1 | 34 | 4 | 2 | | 34 | 4 | 2 | | | (80 SEC.) |
| AM 2 | 31 | 4 | 2 | | 27 | 4 | 2 | | | (70 SEC.) |
| AM 3 | 36 | 4 | 2 | | 32 | 4 | 2 | | | (80 SEC.) |

PEDESTRIAN ACTUATION ONLY

M TIME, ACTUAL TIME TO BE DETERMINED BY CYCLE
H AND TIME BASE COORDINATOR.

## SIGNAL INDICATIONS

12" LENS: R, Y, G — 1,2,5,6, 9,10,13,14
8" LENS: R, Y, G — 3,4,7,8, 11,12,15,16

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1,2,5,6,9,10,13,14
SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 3,4,7,8,11,12,15,16

25 0 25

## LEGEND

- 20' MAST ARM/IDENTIFYING LENGTH
- ② VEHICULAR SIGNAL HEAD/BACKPLATE/VISORS/DIRECTIONAL ARROW/IDENTIFYING NUMBER
- ② PEDESTRIAN SIGNAL HEAD/IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/SIGN
- A SIGN/IDENTIFYING LETTER
- 12"x6" LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION BEACON
- EMERGENCY PREEMPTION DETECTOR
- CURB CUT RAMP
- UTILITY POLE
- ② PHASE NUMBER
- INLET

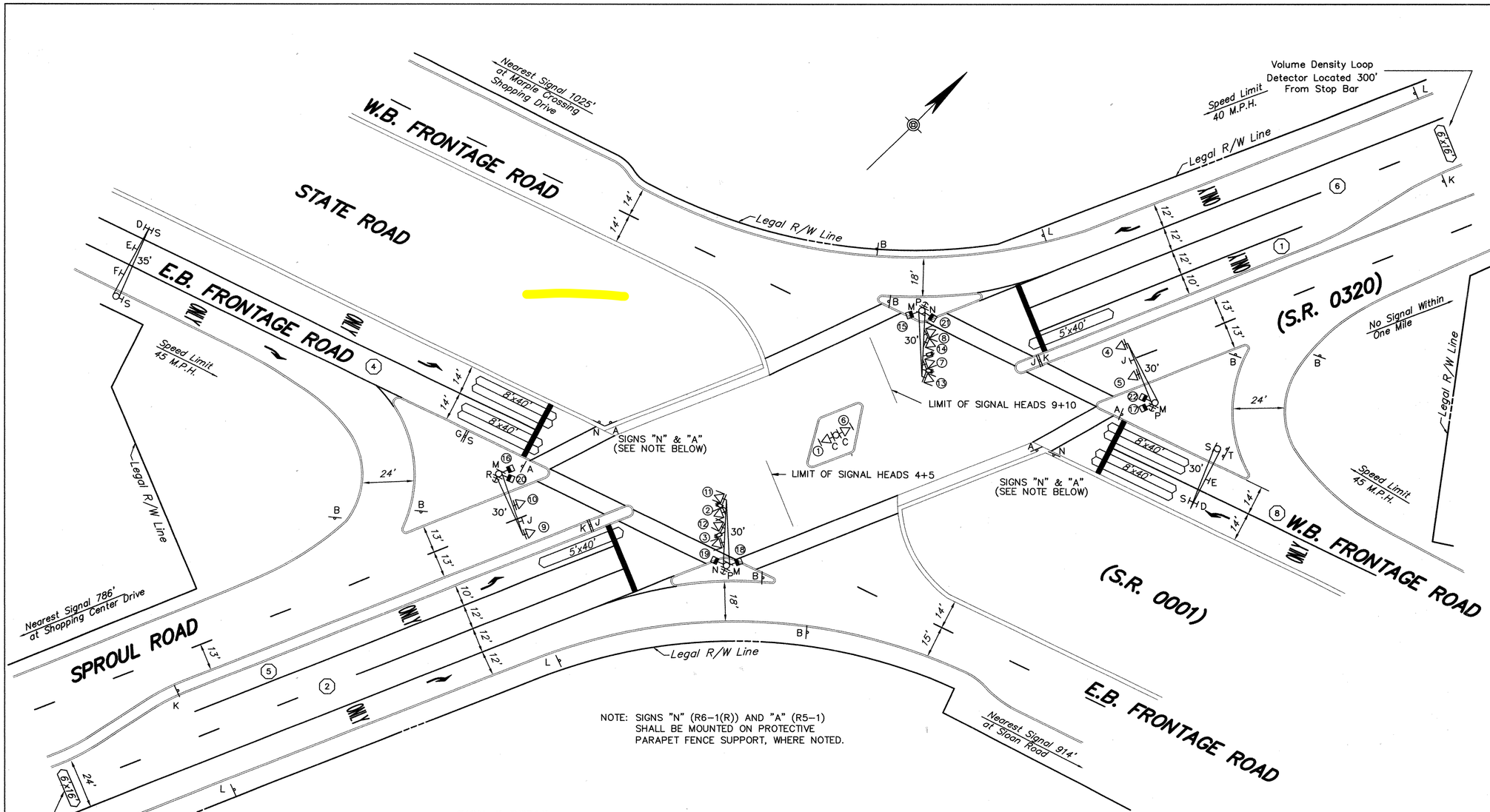
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE
MUNICIPALITY: MARPLE TOWNSHIP
INTERSECTION: SPROUL ROAD (S.R. 0320) AND OLD MARPLE ROAD (S.R. 1008)

REVIEWED: _____ DATE
MUNICIPAL OFFICIAL _____ DATE
RECOMMENDED: _____ DATE
Douglas May 03/09/90
DISTRICT TRAFFIC ENGINEER _____ DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | New Controller | | | | | DWM | 3/09/90 |
| 2 | New Drawing, Added Signal Heads 4,8, 12, and 16, Added Street Name Signs | PAJ | 9/26/91 | WJE | 9/13/92 | LRB | 9/14/92 |
| 3 | Revised Timings, Sht C | PAJ | 4/17/92 1/28/93 | WLX | 9/13/93 | LRB | 9/14/93 |
| 4 | Updated dwg. Added Signal Heads 10 and 14, Added Pre-emption | MCM | 11/11/02 | wlx | 11/14/ | [illegible] | [illegible] |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

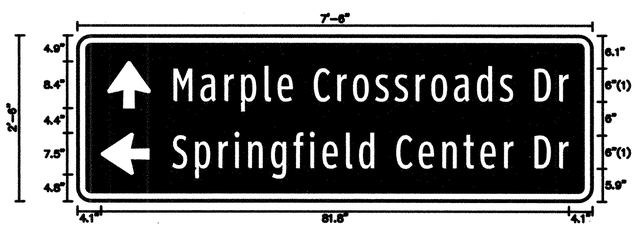
SHEET 2 OF 2 | PERMIT # 63-0236 | FILE # 0236




NOTE: SIGNS "N" (R6-1(R)) AND "A" (R5-1) SHALL BE MOUNTED ON PROTECTIVE PARAPET FENCE SUPPORT, WHERE NOTED.

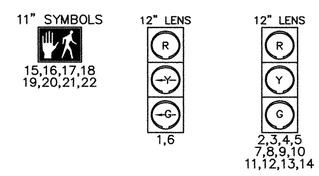
## SIGN T DETAIL

NOT TO SCALE




BACKGROUND COLOR: GREEN
BORDER AND LEGEND: WHITE
BORDER: R=1.9", TH=0.8", IN=0.5"
FONT: CLEARVIEW HWY 1-W

## SIGNAL INDICATIONS




SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 2,3,7,8,11,12,13,14

SIGNALS TO BE EQUIPPED WITH OPTICALLY PROGRAMMED LENS 1,4,5,6,9,10

25 0 25

## LEGEND

- 20' MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- A SIGN/IDENTIFYING LETTER
- 12'x6' LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION BEACON
- EMERGENCY PREEMPTION DETECTOR
- CURB CUT RAMP
- UTILITY POLE
- 2 PHASE NUMBER
- INLET

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE LATEST PROVISIONS OF ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
**ENGINEERING DISTRICT 6-0**

COUNTY: DELAWARE
MUNICIPALITY: SPRINGFIELD TOWNSHIP
INTERSECTION: STATE ROAD (S.R. 0001)
SPROUL ROAD (S.R. 0320)

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

DATE

E. L. Woods Jr. 9/6/74
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./ REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Added Emergency Pre-Emption New Drawing | PAI | 11/28/00 | | | | |
| 2 | ADD SIGN T | MCM | 10/21/11 | | 11/9/11 | | 11/9/11 |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 3 | PERMIT # 63-0190 | FILE # 0190

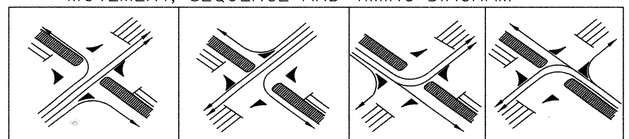
| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R5-1 | 30"x30" | DO NOT ENTER |
| B | R1-2 | 36"x36" | YIELD |
| C | R18-2L | 30"x36" | LEFT TURN SIGNAL |
| D | R3-5L | 30"x36" | LEFT ONLY |
| E | R3-6LS | 30"x36" | LEFT AND THRU |
| F | R3-5R | 30"x36" | RIGHT ONLY |
| G | R3-8LLS | 30"x30" | LEFT AND LEFT/STRAIGHT |
| J | R3-3 | 30"x30" | NO TURNS |
| K | R3-7L | 30"x30" | LEFT LANE MUST TURN LEFT |
| L | R3-7R | 30"x30" | RIGHT LANE MUST TURN RIGHT |
| M | R6-1L | 36"x12" | HORIZONTAL LEFT ONE-WAY |
| N | R6-1R | 36"x12" | HORIZONTAL RIGHT ONE-WAY |
| P | R10-4 | 9"x12" | PUSH BUTTON FOR WALK SIGNAL ← |
| R | R10-4 | 9"x12" | PUSH BUTTON FOR WALK SIGNAL → |
| S | R5-9 | 36"x24" | WRONG WAY |
| T | SPECIAL | 84"x35" | DESTINATION SIGN |

OPERATIONAL NOTES:

① ~~G~~ IF FOLLOWED BY PHASE 2+5
② ~~G~~ IF FOLLOWED BY PHASE 1+6
③ G IF FOLLOWED BY PHASE 4 OR 2+5
④ G IF FOLLOWED BY PHASE 8 OR 1+6
⑤ G IF FOLLOWED BY PHASE 1+6 OR 2+6
⑥ G IF FOLLOWED BY PHASE 2+5 OR 2+6
⑦ G IF FOLLOWED BY PHASE 2+6
⑧ W IF FOLLOWED BY PHASE 2+6
⑨ TIMING TO BE AS SHOWN IN PHASE 2+6. TIMING MAY TIME OUT IN THIS PHASE OR MAY BE COMPLETED IN PHASE 2+6.
• SIGNAL TO DWELL IN PHASE 2+6. UNTIL ACTUATED BY PHASE 1,4,5, OR 8.

# EMERGENCY PRE-EMPTION PHASING

## MOVEMENT, SEQUENCE AND TIMING DIAGRAM

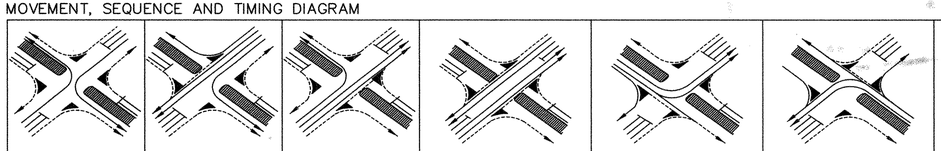


| PHASE | 2 | | | | 6 | | | | 4 | | | | 8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 38 | 39 | 40 | | 35 | 36 | 37 | |
| 1 | ~~G~~ | ~~Y~~ | R | R | R | R | R | R | R | R | R | | R | R | R | |
| 2,3 | G | Y⓪ | R⓪ | R⓪ | R | R | R | R | R | R | R | | R | R | R | |
| 4,5 | G | G | G | Y⓪ | R | R | R | R | R | R | R | | R | R | R | |
| 6 | R | R | R | R | ~~G~~ | ~~Y~~ | R | R | R | R | R | | R | R | R | |
| 7,8 | R | R | R | R | G | Y⓪ | R⓪ | R⓪ | R | R | R | | R | R | R | |
| 9,10 | R | R | R | R | G | G | G | Y⓪ | R | R | R | | R | R | R | |
| 11,12 | R | R | R | R | R | R | R | R | G | Y | R | | R | R | R | |
| 13,14 | R | R | R | R | R | R | R | R | R | R | R | | G | Y | R | |
| 15,16,17,18 | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | | DW | DW | DW | |
| 19,20,21,22 | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | | DW | DW | DW | |
| FIXED TIME | * | 3 | 1 | 3 | * | 3 | 1 | 3 | * | 3 | 4 | | * | 3 | 4 | |
| SELECTIVE CLEARANCES | | | | | | | | | | | | | | | | |

* FOR DURATION OF PRE-EMPTION

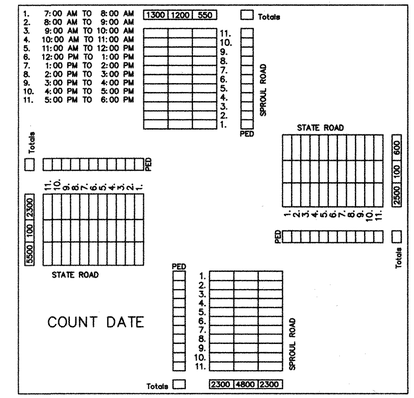
NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

## MOVEMENT, SEQUENCE AND TIMING DIAGRAM



| PHASE | 1 + 5 | | | | 1 + 6 | | | | 2 + 5 | | | | 2 + 6 | | | | | 4 | | | | | 8 | | | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | |
| 1 | ~~G~~ | ~~Y~~① | R① | | R | R | R | R | ~~G~~ | ~~G~~ | ~~Y~~ | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | OFF |
| 2,3 | R | R | R | | R | R | R | R | G | G | Y⑦ | R⑦ | G | G | Y | R | R | R | R | R | R | R | R | R | R | R | R | Y |
| 4,5 | R | R | R | | R | R | R | R | G | G | Y⑦ | R⑦ | G | G | G | G | Y③ | G | G | G | G | Y⑥ | R | R | R | R | R | Y |
| 6 | ~~G~~ | ~~Y~~② | R② | | ~~G~~ | ~~G~~ | ~~Y~~ | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | OFF |
| 7,8 | R | R | R | | G | G | Y⑦ | R⑦ | R | R | R | R | G | G | Y | R | R | R | R | R | R | R | R | R | R | R | R | Y |
| 9,10 | R | R | R | | G | G | Y⑦ | R⑦ | R | R | R | R | G | G | G | G | Y④ | R | R | R | R | R | G | G | G | G | Y⑤ | Y |
| 11,12 | R | R | R | | R | R | R | R | R | R | R | R | R | R | R | R | R | G | G | Y | R | R | R | R | R | R | R | R |
| 13,14 | R | R | R | | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | G | Y | R | R | R |
| 15,16 | DW | DW | DW | | W | FD⑧ | DW⑧ | DW⑧ | DW | DW | DW | DW | W | FD | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | OFF |
| 17,18 | DW | DW | DW | | DW | DW | DW | DW | W | FD⑧ | DW⑧ | DW⑧ | W | FD | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | OFF |
| 19,20 | DW | DW | DW | | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | W* | FD* | DW | DW | DW | DW | DW | DW | DW | DW | OFF |
| 21,22 | DW | DW | DW | | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | W* | FD* | DW | DW | DW | OFF |
| FIXED | | 3 | 2 | | | | 3 | 2 | | | 3 | 2 | | | 3 | 1 | 3 | | | 3 | 1 | 3 | | | 3 | 1 | 3 | |
| MINIMUM | 3 | | | | ← 3 → | | | | ← 3 → | | | | ← 15 → | | | | | ← 4 → | | | | | ← 4 → | | | | | |
| PASSAGE | 3 | | | | ← 3 → | | | | ← 3 → | | | | ← 4 → | | | | | ← 3 → | | | | | ← 3 → | | | | | |
| MAXIMUM 1 | 7 | | | | ← 7 → | | | | ← 30 → | | | | ← 35 → | | | | | ← 25 → | | | | | ← 20 → | | | | | |
| MAXIMUM 2 | 7 | | | | ← 7 → | | | | ← 30 → | | | | ← 35 → | | | | | ← 25 → | | | | | ← 20 → | | | | | |
| PEDESTRIAN* | | | | | ⑨ | | | | ⑨ | | | | 10 | 20 | | | | 7 | 10 | | | | 7 | 10 | | | | |
| MEMORY | NL | | | | ← NL → | | | | ← NL → | | | | ← MN → | | | | | ← NL → | | | | | ← NL → | | | | | |

* UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE DW AT ALL TIMES.




EMERGENCY PRE-EMPTION NOTES:

• CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE EASTBOUND & WESTBOUND APPROACHES OF STATE ROAD (S.R. 0001), AND THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPROUL ROAD (S.R. 0320), WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL BEGIN FLASHING WHEN THE PREEMPTION PHASE DISPLAYS PREEMPTION GREEN FOR THE EMERGENCY VEHICLE APPROACH.

• THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS EXCEPT THE GREEN INDICATIONS FOR THE PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE, FOLLOWED BY SELECTIVE CLEARANCES DEPENDENT UPON THE PHASE IN WHICH THE PRE-EMPTION OCCURS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF SIGNAL PRE-EMPTION WITH RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.

• THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.

• IF THE SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ALL SIGNALS SHALL REMAIN FLASHING.

• UPON COMPLETION OF PRE-EMPTION PHASE 2,4,6, OR 8, IN RETURNING TO NORMAL OPERATION PHASE 2+6 INTERVAL 12 SHALL FOLLOW.

• IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.

• IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

• THE FIELD LOCATIONS OF THE PRE-EMPTION DETECTORS MAY DIFFER FROM THE LOCATIONS DEPICTED ON THE CONDITION DIAGRAM, AS THE DETECTORS MAY NEED TO BE RELOCATED AND/OR ADJUSTED TO PROVIDE ACCEPTABLE OPERATION AS DEEMED APPROPRIATE BY DEPARTMENT PERSONNEL.

• IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED DURING THE "WALK" PHASE, THE "WALK" PHASE SHALL TERMINATE IMMEDIATELY, FOLLOWED BY THE FLASHING "DONT WALK" INDICATION IN ITS ENTIRETY, FOLLOWED BY THE APPROPRIATE SELECTIVE YELLOW AND RED CLEARANCE INTERVALS BEFORE PROCEEDING TO THE PRE-EMPTION PHASE. IF THE SIGNAL IS PRE-EMPTED DURING THE FLASHING "DONT WALK" INDICATION, THE INTERVAL SHALL TIME OUT IN ITS ENTIRETY FOLLOWED BY THE APPROPRIATE SELECTIVE RED AND YELLOW CLEARANCE INTERVALS BEFORE PROCEEDING TO THE PRE-EMPTION PHASE.

⓪ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION.

# GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE LATEST PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE
MUNICIPALITY: SPRINGFIELD TOWNSHIP
INTERSECTION: STATE ROAD (S.R. 0001)
SPROUL ROAD (S.R. 0320)

REVIEWED:
DATE
MUNICIPAL OFFICIAL DATE

RECOMMENDED:
DATE
E. L. Woods Jr. 9/6/74
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Added Emergency Pre-Emption New Drawing | PAI | 11/28/00 | | | | |
| 2 | ADD SIGN T | MCM | 10/21/11 | [illegible] | 11/7/11 | [illegible] | 11/7/11 |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 3 OF 3 | PERMIT # 63-0190 | FILE # 0190

## SIGN TABULATION

| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
|---|---|---|---|
| A | R1-2 | 36"x36" | YIELD |
| B | R10-12 | 30"x36" | LEFT TURN YIELD ON GREEN ● |
| C | R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT ← |
| D | R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT → |
| E | R3-7R | 30"x30" | RIGHT LANE MUST TURN RIGHT |
| F | R3-6SR | 30"x36" | OPTIONAL RIGHT TURN |
| J | D3-4 | 90"x16 | SINGLE LINE OVERHEAD STREET NAME |
| K | D3-4 | 66"x16" | SINGLE LINE OVERHEAD STREET NAME |
| L | R10-10L | 30"x36" | LEFT TURN SIGNAL |
| M | R3-7R | 30"x30" | LEFT LANE MUST TURN LEFT |
| N | W16-1 | 18"x18" | HAZARD MARKER |
| P | R4-7 | 18"x30" | KEEP RIGHT |

### OPERATION NOTES

① R/G IF FOLLOWED BY 2+5
② R/G IF FOLLOWED BY 1+6
③ G IF FOLLOWED BY 2+6
④ G/Y IF FOLLOWED BY 2+6
⑤ TIMING WILL BE AS SHOWN IN PHASE 4+8 AND MAY EXPIRE IN THIS PHASE OR BE COMPLETED IN PHASE 4+8.
⑥ G IF FOLLOWED BY 2+5
⑦ G IF FOLLOWED BY 1+6
⑧ R/G IF FOLLOWED BY 3+8
⑨ R/G IF FOLLOWED BY 4+7
⑩ G IF FOLLOWED BY 4+8
⑪ G/Y IF FOLLOWED BY 4+8
⑫ G IF FOLLOWED BY 3+8
⑬ G IF FOLLOWED BY 4+7
⑭ TIMING WILL BE AS SHOWN IN PHASE 2+6 AND MAY EXPIRE IN THIS PHASE OR BE COMPLETED IN PHASE 2+6.

- ● SIGNAL TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 1,3,4,5,7 OR 8.
- ≠ MINIMUM GREEN TIME. ACTUAL GREEN TIME TO BE DETERMINED BY CYCLE LENGTH AND TIME BASED CORDINATION (T.B.C.).

### SIGN "K"

State Rd — 66 x 16 (3.5 / 6 / 8 / 4.5)

HELVETICA BOLD
8" U.C.
6" L.C.

### SIGN "J"

Springfield Rd — 96 x 16 (2 / 8 / 10.67 / 3.33)

HELVETICA BOLD (25% REDUCTION)
10.6" U.C.
8" L.C.

## EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2 | | | 6 | | | 4 | | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIGNALS \ INTERVAL | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
| 1 | G/G | Y | R | R | R | R | R | R | R | R | R | R |
| 2,3 | G | Y@ | R@ | R | R | R | R | R | R | R | R | R |
| 4 | R | R | R | R | R | R | R | R | R | R | R | R |
| 5 | R | R | R | G/G | Y | R | R | R | R | R | R | R |
| 6,7 | R | R | R | G | Y@ | R@ | R | R | R | R | R | R |
| 8 | R | R | R | R | R | R | R | R | R | R | R | R |
| 9 | R | R | R | R | R | R | R | R | R | G/G | Y | R |
| 10 | R | R | R | R | R | R | R | R | R | G | Y | R |
| 11 | R | R | R | R | R | R | R | R | R | R | R | R |
| 12 | R | R | R | R | R | R | R | R | R | R | R | R |
| 13 | R | R | R | R | R | R | G/G | Y | R | R | R | R |
| 14 | R | R | R | R | R | R | G | Y | R | R | R | R |
| 15 | R | R | R | R | R | R | R | R | R | R | R | R |
| 16 | R | R | R | R | R | R | R | R | R | R | R | R |
| FIXED TIME | * | 4 | 3 | * | 4 | 3 | * | 4 | 2 | * | 4 | 2 |

(SELECTIVE CLEARANCES precede each phase.)

* FOR DURATION OF PRE-EMPTION

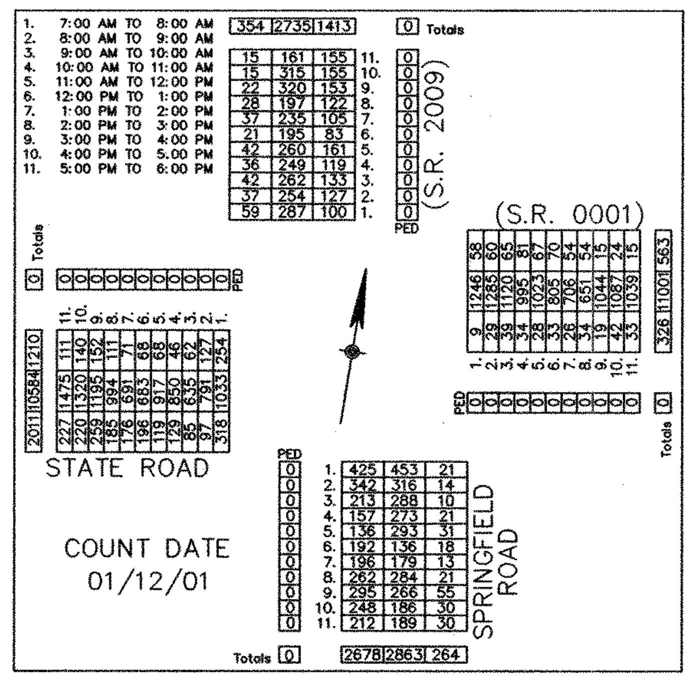
@ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION.

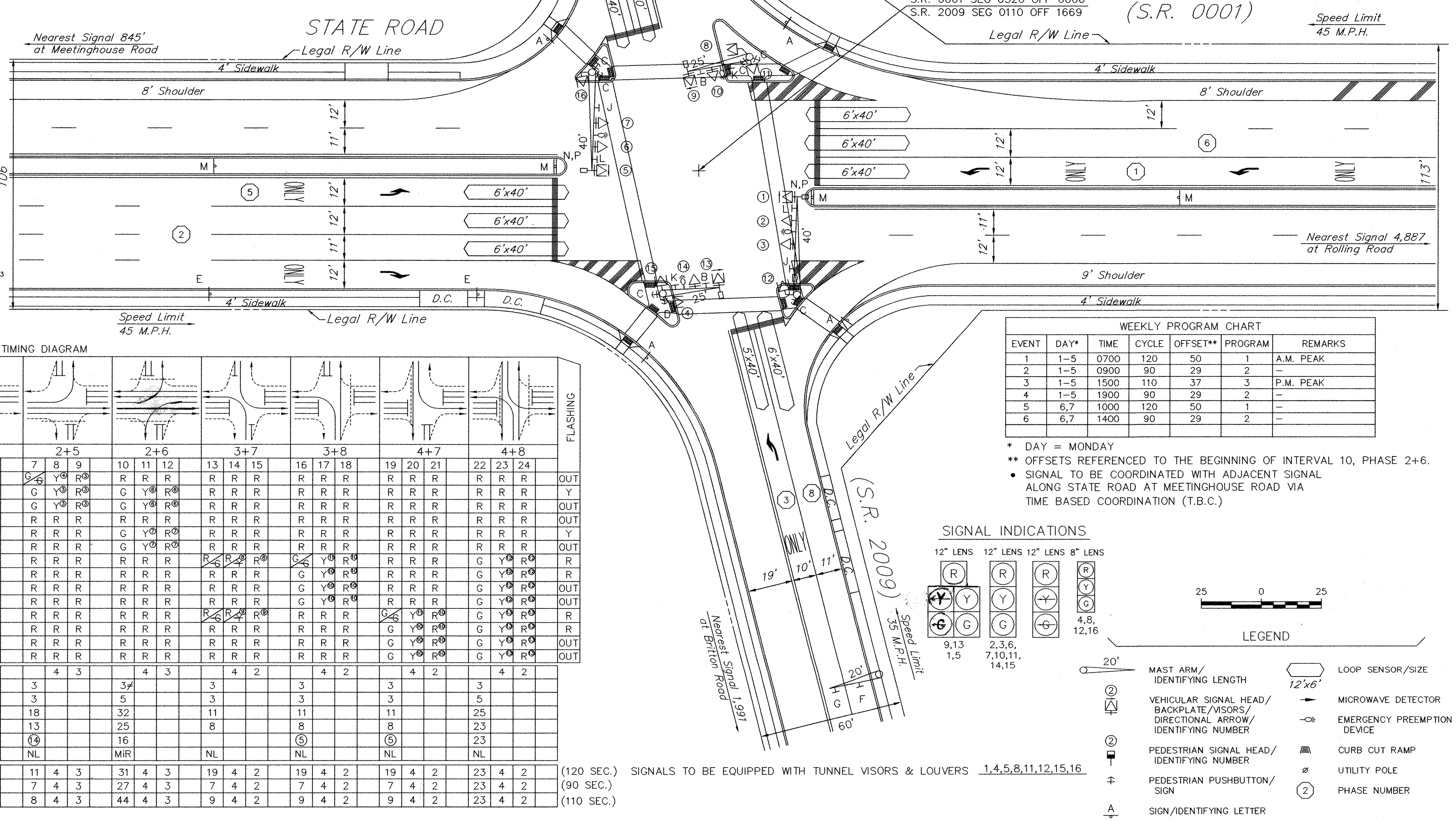
NOTE : IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

### EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE EASTBOUND & WESTBOUND APPROACHES OF STATE ROAD (S.R. 0001), AND THE NORTHBOUND & SOUTHBOUND APPROACHES OF SPRINGFIELD ROAD (S.R. 2009) WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL BEGIN FLASHING WHEN THE PREEMPTION PHASE DISPLAYS PREEMPTION GREEN FOR THE EMERGENCY VEHICLE APPROACH.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS, FOLLOWED BY SELECTIVE CLEARANCES DEPENDENT UPON THE PHASE IN WHICH THE PRE-EMPTION OCCURS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF SIGNAL PRE-EMPTION WITH RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE ALL SIGNALS SHALL REMAIN FLASHING.
- UPON COMPLETION OF PRE-EMPTION PHASE 2,4,6, OR 8, IN RETURNING TO NORMAL OPERATION PHASE2+6 INTERVAL 10 SHALL FOLLOW.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.
- THE FIELD LOCATIONS OF THE PRE-EMPTION DETECTORS MAY DIFFER FROM THE LOCATIONS DEPICTED ON THE CONDITION DIAGRAM, AS THE DETECTORS MAY NEED TO BE RELOCATED AND/OR ADJUSTED TO PROVIDE ACCEPTABLE OPERATION AS DEEMED APPROPRIATE BY DEPARTMENT PERSONNEL.




MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 1+5 | | | 1+6 | | | 2+5 | | | 2+6 | | | 3+7 | | | 3+8 | | | 4+7 | | | 4+8 | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIGNALS \ INTERVAL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| 1 | R/G | R/Y① | R① | R | R | R | G/G | Y④ | R③ | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | OUT |
| 2,3 | R | R | R | R | R | R | G | Y③ | R③ | G | Y⑥ | R⑥ | R | R | R | R | R | R | R | R | R | R | R | R | Y |
| 4 | R | R | R | R | R | R | G | Y③ | R③ | G | Y⑥ | R⑥ | R | R | R | R | R | R | R | R | R | R | R | R | OUT |
| 5 | R/G | R/Y② | R② | G/G | Y④ | R③ | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | OUT |
| 6,7 | R | R | R | G | Y③ | R③ | R | R | R | G | Y⑦ | R⑦ | R | R | R | R | R | R | R | R | R | R | R | R | Y |
| 8 | R | R | R | G | Y③ | R③ | R | R | R | G | Y⑦ | R⑦ | R | R | R | R | R | R | R | R | R | R | R | R | OUT |
| 9 | R | R | R | R | R | R | R | R | R | R | R | R | R/G | R/Y⑧ | R⑧ | G/G | Y⑪ | R⑩ | R | R | R | G | Y⑫ | R⑫ | R |
| 10 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | R | R | R | G | Y⑫ | R⑫ | R |
| 11 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | R | R | R | G | Y⑫ | R⑫ | OUT |
| 12 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | R | R | R | G | Y⑫ | R⑫ | OUT |
| 13 | R | R | R | R | R | R | R | R | R | R | R | R | R/G | R/Y⑨ | R⑨ | R | R | R | G/G | Y⑪ | R⑩ | G | Y⑬ | R⑬ | R |
| 14 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | G | Y⑬ | R⑬ | R |
| 15 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | G | Y⑬ | R⑬ | OUT |
| 16 | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y⑩ | R⑩ | G | Y⑬ | R⑬ | OUT |
| FIXED | | 4 | 3 | | 4 | 3 | | 4 | 3 | | 4 | 3 | | 4 | 2 | | 4 | 2 | | 4 | 2 | | 4 | 2 | |
| MINIMUM | 3 | | | 3 | | | 3 | | | 3≠ | | | 3 | | | 3 | | | 3 | | | 3 | | | |
| PASSAGE | 3 | | | 3 | | | 3 | | | 5 | | | 3 | | | 3 | | | 3 | | | 5 | | | |
| MAXIMUM 1 | 18 | | | 18 | | | 18 | | | 32 | | | 11 | | | 11 | | | 11 | | | 25 | | | |
| MAXIMUM 2 | 13 | | | 13 | | | 13 | | | 25 | | | 8 | | | 8 | | | 8 | | | 23 | | | |
| PEDESTRIAN* | | | | ⑭ | | | ⑭ | | | 16 | | | | | | ⑤ | | | ⑤ | | | 23 | | | |
| MEMORY | NL | | | NL | | | NL | | | MiR | | | NL | | | NL | | | NL | | | NL | | | |
| PROGRAM 1 | 11 | 4 | 3 | 11 | 4 | 3 | 11 | 4 | 3 | 31 | 4 | 3 | 19 | 4 | 2 | 19 | 4 | 2 | 19 | 4 | 2 | 23 | 4 | 2 | (120 SEC.) |
| PROGRAM 2 | 7 | 4 | 3 | 7 | 4 | 3 | 7 | 4 | 3 | 27 | 4 | 3 | 7 | 4 | 2 | 7 | 4 | 2 | 7 | 4 | 2 | 23 | 4 | 2 | (90 SEC.) |
| PROGRAM 3 | 8 | 4 | 3 | 8 | 4 | 3 | 8 | 4 | 3 | 44 | 4 | 3 | 9 | 4 | 2 | 9 | 4 | 2 | 9 | 4 | 2 | 23 | 4 | 2 | (110 SEC.) |

* UPON PEDESTRIAN ACTUATION ONLY

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 1,4,5,8,11,12,15,16

### WEEKLY PROGRAM CHART

| EVENT | DAY* | TIME | CYCLE | OFFSET** | PROGRAM | REMARKS |
|---|---|---|---|---|---|---|
| 1 | 1-5 | 0700 | 120 | 50 | 1 | A.M. PEAK |
| 2 | 1-5 | 0900 | 90 | 29 | 2 | – |
| 3 | 1-5 | 1500 | 110 | 37 | 3 | P.M. PEAK |
| 4 | 1-5 | 1900 | 90 | 29 | 2 | – |
| 5 | 6,7 | 1000 | 120 | 50 | 1 | – |
| 6 | 6,7 | 1400 | 90 | 29 | 2 | – |
| | | | | | | |

* DAY = MONDAY
** OFFSETS REFERENCED TO THE BEGINNING OF INTERVAL 10, PHASE 2+6.
● SIGNAL TO BE COORDINATED WITH ADJACENT SIGNAL ALONG STATE ROAD AT MEETINGHOUSE ROAD VIA TIME BASED COORDINATION (T.B.C.)

### SIGNAL INDICATIONS

| 12" LENS | 12" LENS | 12" LENS | 8" LENS |
|---|---|---|---|
| R / Y Y / G G | R / Y / G | R / Y / G | R / Y / G |
| 9,13 1,5 | 2,3,6, 7,10,11, 14,15 | | 4,8, 12,16 |

25 0 25

### LEGEND

- 20' MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- A SIGN/IDENTIFYING LETTER
- 12'x6' LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION DEVICE
- CURB CUT RAMP
- ⌀ UTILITY POLE
- ② PHASE NUMBER

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 38, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 12, 1991.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE
MUNICIPALITY: SPRINGFIELD TOWNSHIP
INTERSECTION: STATE ROAD (S.R. 0001) AND SPRINGFIELD ROAD (S.R. 2009)

REVIEWED: ______ DATE
MUNICIPAL OFFICIAL ______ DATE

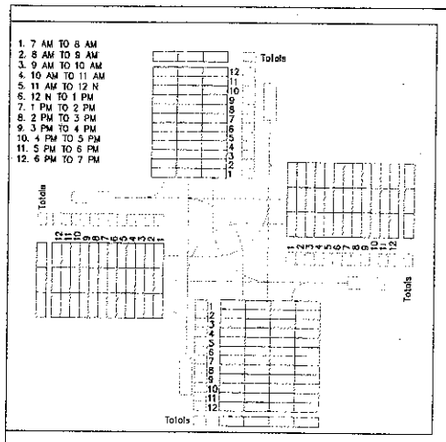
RECOMMENDED:
Mark L. Kray 5/30/96 DATE
Douglas May 5/30/96
DISTRICT TRAFFIC ENGINEER DATE

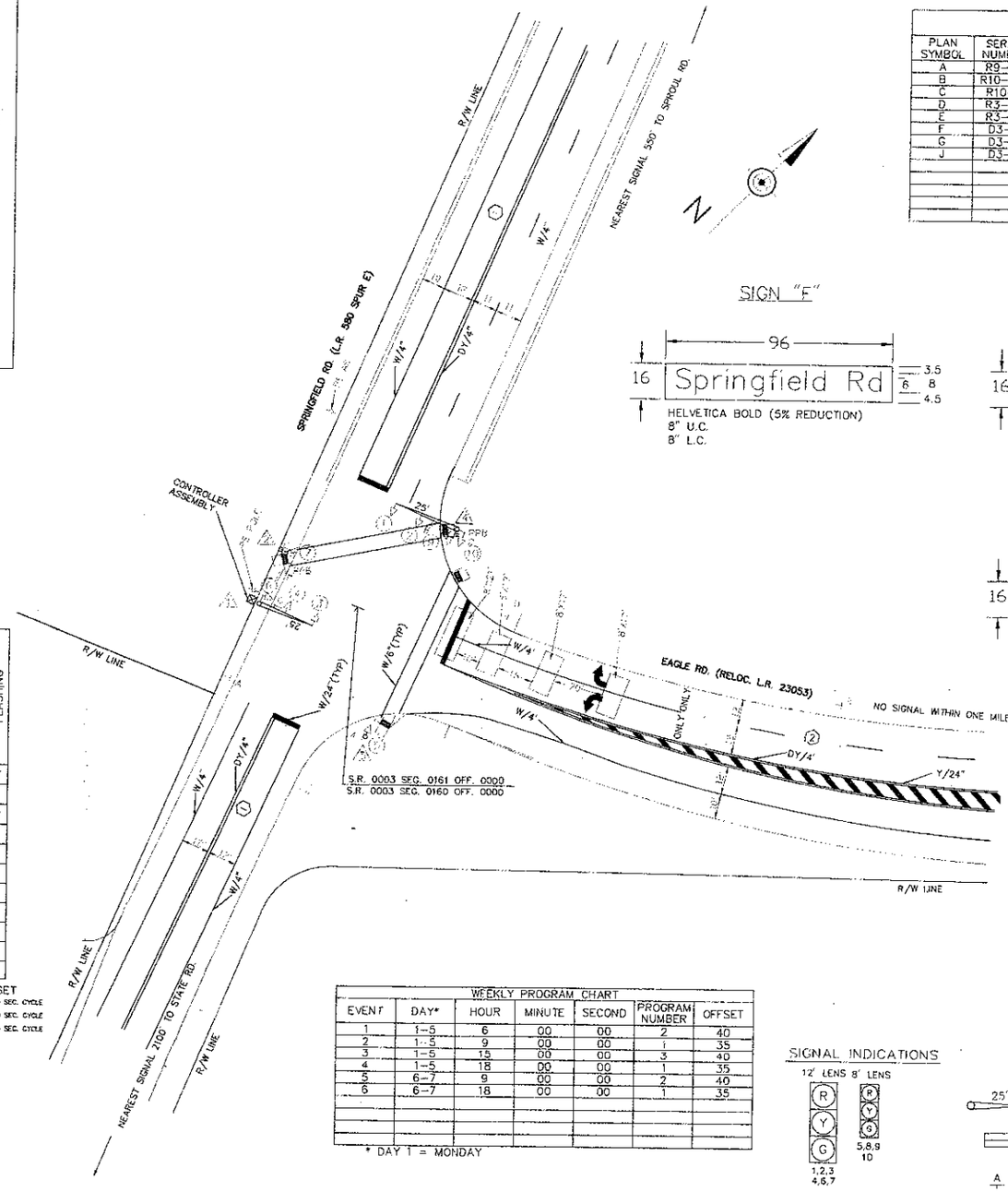
| NO. | REVISION | DES./ REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Added "OHSN" Signs New Drawing | NV | 5/29/96 | MK | 5/30/96 | DWM | 5/30/96 |
| 2 | Added Pre-Emption, Chg. ⌀ & TMG | PAI | 03/26/01 | MLK | 4/9/01 | LRB | 4/16/01 |
| 3 | Proj. 1 Time, Sig. HDs. #1 & 5 | RMC | 10/18/06 | MLK | 10/17/06 | LRB | 10/25/06 |
| 4 | Relocated Crosswalks, Ramps, Ped. Push Buttons & Loop Sensors | CEA | 4/23/10 | | | [illegible] | 6/22/10 |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 63-0738 | FILE # 0738

PNDT 9903/08 FILE 0738 03/26/01

G:\ADA RAMPS\83621-3 SR 2009 Springfield\dwg\SIGNAL SPRINGFIELD & STATE.dwg, 6/9/2010 11:06:28 AM




## SIGN TABULATION

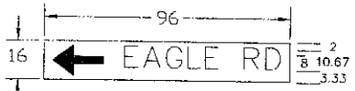
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
|---|---|---|---|
| A | R9-3A | 18" x 18" | NO PEDESTRIAN CROSSING |
| B | R10-11A | 30" x 36" | NO TURN ON RED 8:00AM - 4:00PM |
| C | R10-3 | 9" x 12" | PUSHBUTTON FOR GREEN LIGHT |
| D | R3-7R | 30" x 30" | RIGHT LANE MUST TURN RIGHT |
| E | R3-7L | 30" x 30" | LEFT LANE MUST TURN LEFT |
| F | D3-4 | 96" x 16" | SINGLE LINE OVERHEAD STREET NAME |
| G | D3-4 | 96" x 16" | SINGLE LINE OVERHEAD STREET NAME |
| J | D3-4 | 96" x 16" | SINGLE LINE OVERHEAD STREET NAME |

SIGN "F"



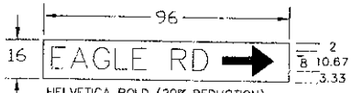

HELVETICA BOLD (5% REDUCTION)
8" U.C.
8" L.C.

SIGN "G"




HELVETICA BOLD (20% REDUCTION)
TYPE T ARROW
10.6" U.C.
8" L.C.

SIGN "J"




HELVETICA BOLD (20% REDUCTION)
TYPE T ARROW
10.6" U.C.
8" L.C.

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATIONS NO. 68

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 18 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT GRADE.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

IN ADDITION TO THIS SIGNAL PERMIT THE PERMITEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 172, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 12, 1986.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIDDING.

## MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

| PHASE | 1 | | | | 2 | | | | | | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | | 4 | 5 | 6 | | | | | | |
| 1,2,3,4,5,10 | G | Y | R | | R | R | R | | | | | | Y |
| 6,7,8,9 | R | R | R | | G | Y | R | | | | | | R |
| FIXED | | 4.0 | 2.0 | | | 3.0 | 2.0 | | | | | | |
| MINIMUM | 30‡ | | | | 3.0 | | | | | | | | |
| PASSAGE | | | | | 1.0 | | | | | | | | |
| PEDESTRIAN** | | | | | 12 | | | | | | | | |
| MEMORY | MR | | | | NL | | | | | | | | |

| | | | | | | | | | | | | | | + OFFSET | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGRAM I | 39.0 | 4.0 | 2.0 | | 20.0 | 3.0 | 2.0 | | | | | | | 35 | 70 SEC. CYCLE |
| PROGRAM II | 45.0 | 4.0 | 2.0 | | 24.0 | 3.0 | 2.0 | | | | | | | 40 | 80 SEC. CYCLE |
| PROGRAM III | 49.0 | 4.0 | 2.0 | | 20.0 | 3.0 | 2.0 | | | | | | | 40 | 80 SEC. CYCLE |

‡ MINIMUM TIME, ACTUAL TIME TO BE DETERMINED BY CYCLE LENGTH AND TIME BASE COORDINATOR.
* OFFSET REFERENCE TO START OF INTERVAL 1.
** UPON ACTUATION ONLY.

## WEEKLY PROGRAM CHART

| EVENT | DAY* | HOUR | MINUTE | SECOND | PROGRAM NUMBER | OFFSET |
|---|---|---|---|---|---|---|
| 1 | 1-5 | 6 | 00 | 00 | 2 | 40 |
| 2 | 1-5 | 9 | 00 | 00 | 1 | 35 |
| 3 | 1-5 | 15 | 00 | 00 | 3 | 40 |
| 4 | 1-5 | 18 | 00 | 00 | 1 | 35 |
| 5 | 6-7 | 9 | 00 | 00 | 2 | 40 |
| 6 | 6-7 | 18 | 00 | 00 | 1 | 35 |

* DAY 1 = MONDAY

## SIGNAL INDICATIONS

12" LENS 8" LENS




## LEGEND

25' MAST ARM/ IDENTIFYING LENGTH

LOOP DETECTOR (PRESENCE & DIRECTIONAL)

A SIGN WITH IDENTIFYING LETTER

T PEDESTRIAN PUSHBUTTON

② SIGNAL HEAD WITH IDENTIFYING NUMBER

② SIGNAL HEAD WITH ARROW SECTION & IDENTIFYING NUMBER

25 0 25
SCALE IN FEET

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE

MUNICIPALITY: MARPLE TOWNSHIP

INTERSECTION: SPRINGFIELD ROAD (L.R. 580 SPUR E) AND EAGLE ROAD (RELOCATED L.R. 23053)

REVIEWED:

MUNICIPAL OFFICIAL

RECOMMENDED:
M.R.D. 12/30/86

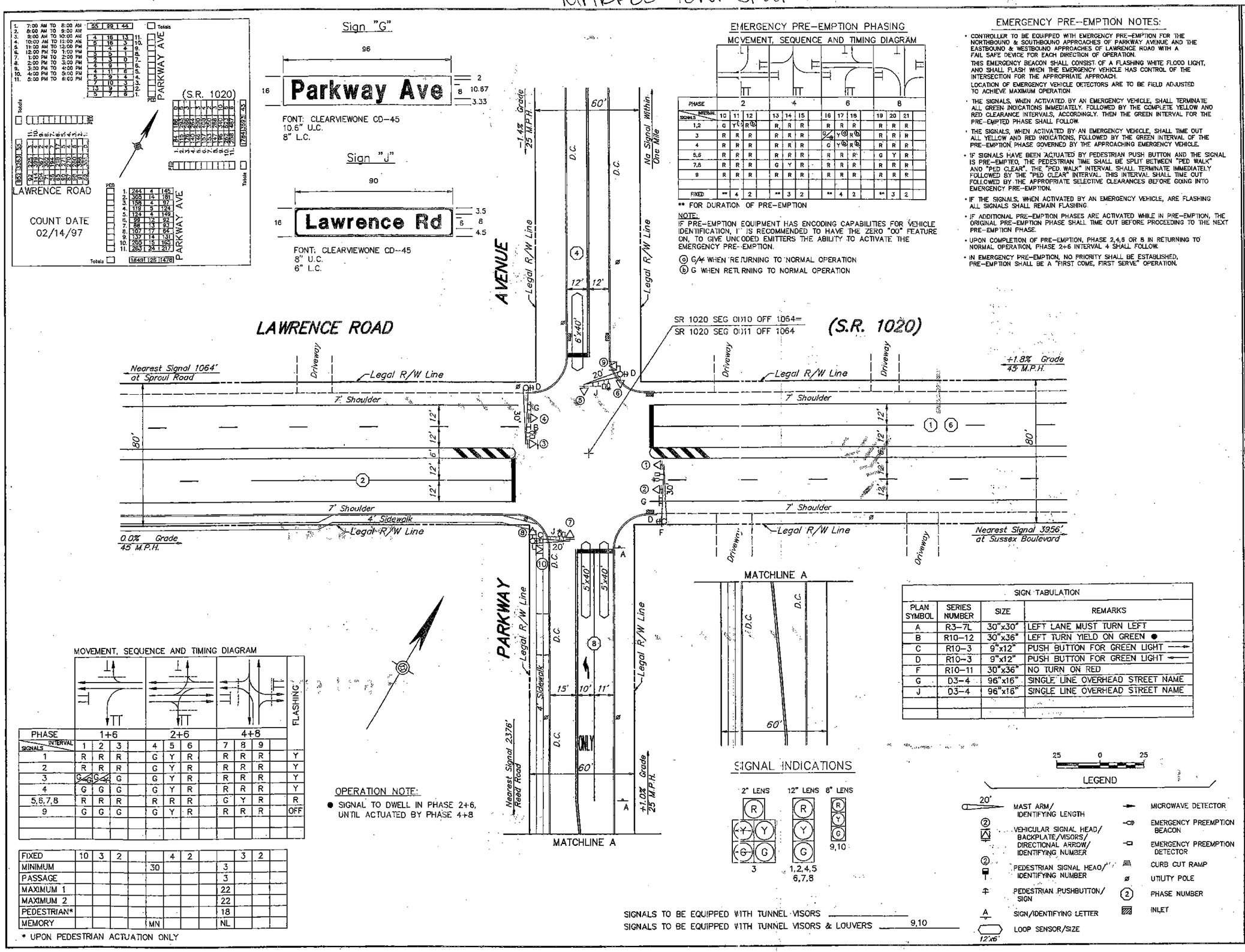
DOUGLAS MAY 3/09/90
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./ REVW. | DATE | REVW | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | UPGRADING OF INTERSECTION 1010-400 | | | | | | |
| 2 | ADDED STREET NAMES SIGNS | PM I | 6/28/01 | | 8/03/01 | LJBL | 8/07/01 |
| 3 | RELOCATE CROSSWALKS, STOP BARS, RAMPS, & PEDESTRIAN PUSH BUTTON | CEA | 3/10/10 | | 3/17/11 | | 3/17/11 |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 7890 | FILE # 1958

MARPLE TOWNSHIP

1933




## EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2 | | | 4 | | | 6 | | | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 1,2 | G | Y ⓪ | R ⓑ | R | R | R | R | R | R | R | R | R |
| 3 | R | R | R | R | R | R | G/ⓐ | Y ⓪ | R ⓑ | R | R | R |
| 4 | R | R | R | R | R | R | G | Y ⓪ | R ⓑ | R | R | R |
| 5,6 | R | R | R | R | R | R | R | R | R | G | Y | R |
| 7,8 | R | R | R | G | Y | R | R | R | R | R | R | R |
| 9 | R | R | R | R | R | R | R | R | R | R | R | R |
| | | | | | | | | | | | | |
| FIXED | ** | 4 | 2 | ** | 3 | 2 | ** | 4 | 2 | ** | 3 | 2 |

** FOR DURATION OF PRE-EMPTION

NOTE:
IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

⓪ G/A WHEN RETURNING TO NORMAL OPERATION
ⓑ G WHEN RETURNING TO NORMAL OPERATION

## EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF PARKWAY AVENUE AND THE EASTBOUND & WESTBOUND APPROACHES OF LAWRENCE ROAD WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.
  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF SIGNALS HAVE BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED, THE PEDESTRIAN TIME SHALL BE SPLIT BETWEEN "PED WALK" AND "PED CLEAR". THE "PED WALK" INTERVAL SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "PED CLEAR" INTERVAL. THIS INTERVAL SHALL TIME OUT FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE GOING INTO EMERGENCY PRE-EMPTION.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION, PHASE 2,4,5 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 4 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 19, 1996.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 1+6 | | | 2+6 | | | 4+8 | | | FLASHING |
|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 1 | R | R | R | G | Y | R | R | R | R | Y |
| 2 | R | R | R | G | Y | R | R | R | R | Y |
| 3 | G/A | G/A | G | G | Y | R | R | R | R | Y |
| 4 | G | G | G | G | Y | R | R | R | R | Y |
| 5,6,7,8 | R | R | R | R | R | R | G | Y | R | R |
| 9 | G | G | G | G | Y | R | R | R | R | OFF |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FIXED | 10 | 3 | 2 | | 4 | 2 | | 3 | 2 | | |
| MINIMUM | | | | 30 | | | 3 | | | | |
| PASSAGE | | | | | | | 3 | | | | |
| MAXIMUM 1 | | | | | | | 22 | | | | |
| MAXIMUM 2 | | | | | | | 22 | | | | |
| PEDESTRIAN* | | | | | | | 18 | | | | |
| MEMORY | | | | MN | | | NL | | | | |

* UPON PEDESTRIAN ACTUATION ONLY

OPERATION NOTE:
- SIGNAL TO DWELL IN PHASE 2+6, UNTIL ACTUATED BY PHASE 4+8

SIGNAL INDICATIONS

2" LENS (3) · 12" LENS (1,2,4,5 6,7,8) · 8" LENS (9,10)

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS _____
SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 9,10

SIGN TABULATION

| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
|---|---|---|---|
| A | R3-7L | 30"x30" | LEFT LANE MUST TURN LEFT |
| B | R10-12 | 30"x36" | LEFT TURN YIELD ON GREEN ● |
| C | R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT → |
| D | R10-3 | 9"x12" | PUSH BUTTON FOR GREEN LIGHT ← |
| F | R10-11 | 30"x36" | NO TURN ON RED |
| G | D3-4 | 96"x16" | SINGLE LINE OVERHEAD STREET NAME |
| J | D3-4 | 96"x16" | SINGLE LINE OVERHEAD STREET NAME |
| | | | |
| | | | |
| | | | |

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION BEACON
- EMERGENCY PREEMPTION DETECTOR
- CURB CUT RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

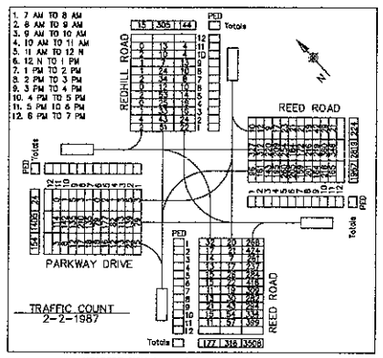
COUNTY: DELAWARE
MUNICIPALITY: MARPLE TOWNSHIP
INTERSECTION: LAWRENCE ROAD (S.R. 1020) AND PARKWAY AVENUE

REVIEWED:
DATE
MUNICIPAL OFFICIAL DATE

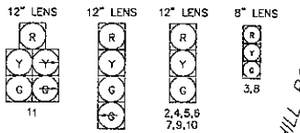
RECOMMENDED:
Mark L. Kray 03/07/97 DATE
Douglas May 03/10/97 DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | Added Adv. LT Phase (WB) | NMF | 3/08/97 | MK | 3/07/97 | DWM | 3/10/97 |
| 2 | Added Sign "F" | WR | 5/20/97 | MK | 6/21/97 | DWM | 6/23/97 |
| 3 | New Drawing, Add. Overhead Str. Signs, Added Signal Head #10 | PAI | 8/28/01 | MA | 8/31/01 | WPB | 8/31/01 |
| 4 | Added Pre-emption | MCM | 5/11/04 | MLK | 5/13/04 | WPB | 5/17/04 |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 63-1933 | FILE # 1933




## SIGNAL INDICATIONS

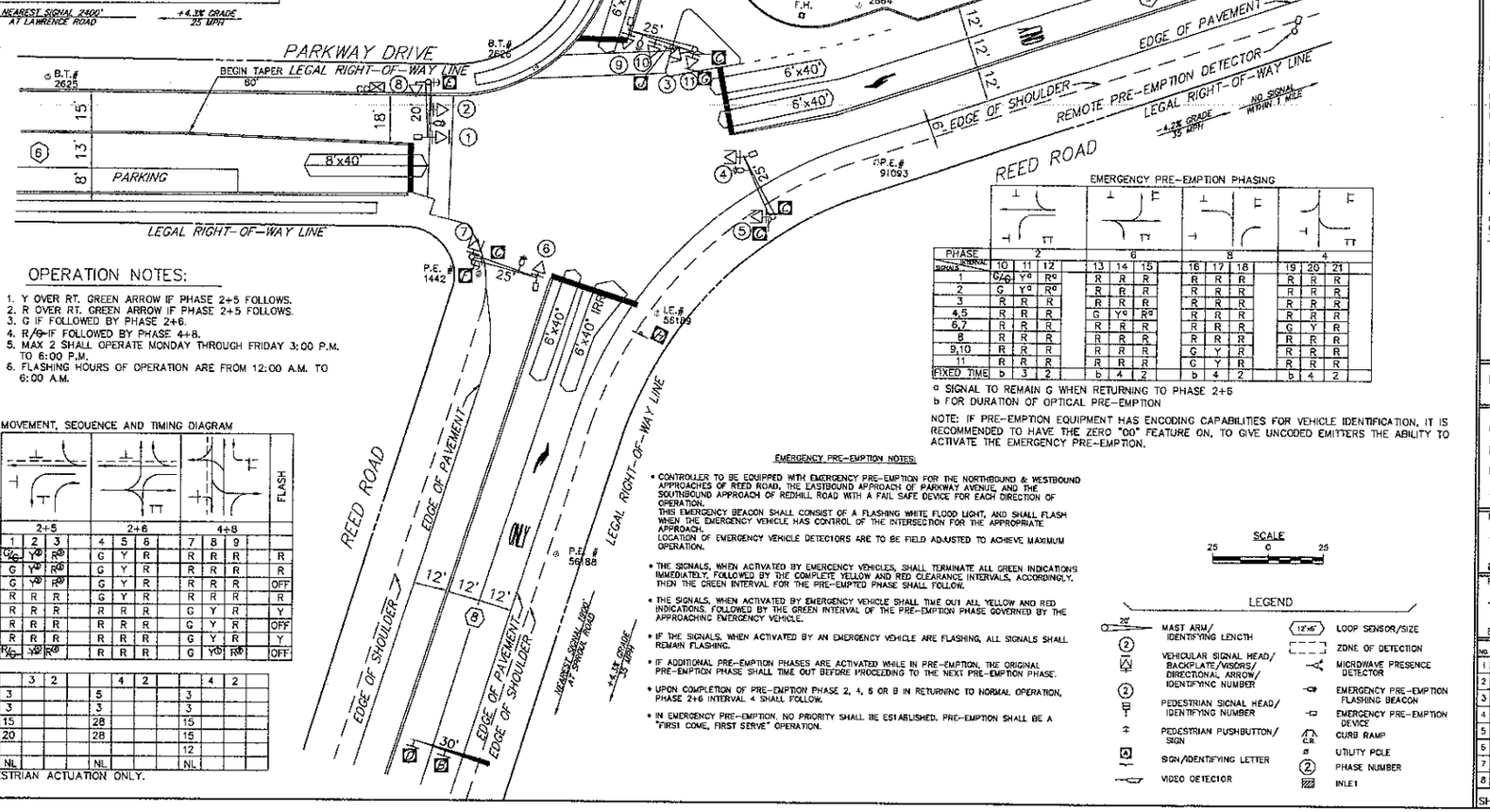



SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 3,4,5

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 7

## SIGN TABULATION

| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
|---|---|---|---|
| A | R1-2 | 36"x36" | YIELD SIGN |
| B | R3-5R | 30"x36" | RIGHT TURN SIGN |
| C | R9-3 | 18"x18" | NO PEDESTRIAN CROSSING |
| D | R3-6LS | 30"x36" | OPTIONAL LEFT TURN SIGN |
| E | R10-3L | 9"X12" | PUSH BUTTON FOR GREEN LT. |
| F | R10-3R | 9"X12" | PUSH BUTTON FOR GREEN LT. |
| G | R10-10R | 24"x30" | RIGHT TURN SIGNAL |
| H | R10-6L | 24"X30" | STOP HERE ON RED |
| I | R10-11 | 30"x36" | NO TURN ON RED |
| J | R3-7L | 30"x30" | LEFT LANE MUST TURN LEFT |




## OPERATION NOTES:

1. Y OVER RT. GREEN ARROW IF PHASE 2+5 FOLLOWS.
2. R OVER RT. GREEN ARROW IF PHASE 2+5 FOLLOWS.
3. G IF FOLLOWED BY PHASE 2+6.
4. R/G IF FOLLOWED BY PHASE 4+8.
5. MAX 2 SHALL OPERATE MONDAY THROUGH FRIDAY 3:00 P.M. TO 6:00 P.M.
6. FLASHING HOURS OF OPERATION ARE FROM 12:00 A.M. TO 6:00 A.M.

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2+5 | | | 2+6 | | | 4+8 | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 1 | G/G | Y[a] | R[a] | G | Y | R | R | R | R | R |
| 2 | G | Y[a] | R[a] | G | Y | R | R | R | R | R |
| 3 | G | Y[a] | R[a] | G | Y | R | R | R | R | OFF |
| 4,5 | R | R | R | G | Y | R | R | R | R | R |
| 6,7 | R | R | R | R | R | R | G | Y | R | Y |
| 8 | R | R | R | R | R | R | G | Y | R | OFF |
| 9,10 | R | R | R | R | R | R | G | Y | R | Y |
| 11 | R/G | Y[a] | R[a] | R | R | R | G | Y[a] | R[a] | OFF |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FIXED TIME | | 3 | 2 | | | 4 | 2 | | | 4 | 2 |
| MINIMUM | 3 | | | | 5 | | | | 3 | | |
| PASSAGE | 3 | | | | 3 | | | | 3 | | |
| MAX 1 | 15 | | | | 28 | | | | 15 | | |
| MAX 2 | 20 | | | | 28 | | | | 15 | | |
| PEDESTRIAN* | | | | | | | | | 12 | | |
| MEMORY | NL | | | | NL | | | | NL | | |

* UPON PEDESTRIAN ACTUATION ONLY.

EMERGENCY PRE-EMPTION PHASING

| PHASE | 2 | | | 6 | | | 8 | | | 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 1 | G/G | Y[a] | R[a] | R | R | R | R | R | R | R | R | R |
| 2 | G | Y[a] | R[a] | R | R | R | R | R | R | R | R | R |
| 3 | R | R | R | R | R | R | R | R | R | R | R | R |
| 4,5 | R | R | R | G | Y[a] | R[a] | R | R | R | R | R | R |
| 6,7 | R | R | R | R | R | R | R | R | R | G | Y | R |
| 8 | R | R | R | R | R | R | R | R | R | R | R | R |
| 9,10 | R | R | R | R | R | R | G | Y | R | R | R | R |
| 11 | R | R | R | R | R | R | G | Y | R | R | R | R |
| FIXED TIME | b | 3 | 2 | b | 4 | 2 | b | 4 | 2 | b | 4 | 2 |

[a] SIGNAL TO REMAIN G WHEN RETURNING TO PHASE 2+6
b FOR DURATION OF OPTICAL PRE-EMPTION

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & WESTBOUND APPROACHES OF REED ROAD, THE EASTBOUND APPROACH OF PARKWAY AVENUE, AND THE SOUTHBOUND APPROACH OF REDHILL ROAD WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.
  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY, THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLE SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE ARE FLASHING, ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION PHASE 2, 4, 6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 4 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

SCALE
25 0 25

LEGEND

- 24' MAST ARM/ IDENTIFYING LENGTH
- (2) VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- (2) PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- A SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- 12'x6' LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- C.R. CURB RAMP
- UTILITY POLE
- (2) PHASE NUMBER
- INLET

## GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, "PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: DELAWARE
MUNICIPALITY: MARPLE TWP.
INTERSECTION: REED ROAD & PARKWAY DRIVE & REDHILL ROAD

REVIEWED:
DATE
MUNICIPAL OFFICIAL DATE

RECOMMENDED:
MARK L. KRAY 4/20/88
WERNER J. EICHORN 4/20/88
DISTRICT TRAFFIC ENGINEER DATE

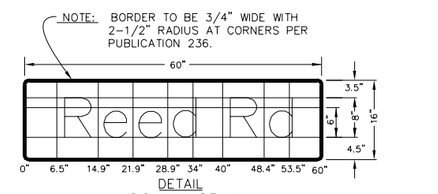
| NO. | REVISION | REV. BY | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | o2 TIMING | TZM | 5/22/85 | MLK | 5/22/85 | DMW | 5/26/85 |
| 2 | ADD EMERGENCY PRE-EMPTION | JJH | 6/18/91 | LJ72 | 6/18/91 | LBS | 6/17/91 |
| 3 | ADD REMOTE PRE-EMPTION DETECTOR | JJH | 8/24/11 | [illegible] | [illegible] | [illegible] | [illegible] |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 63-2496 | FILE # 2496

| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R10–12 | 30"x36" | LEFT TURN YIELD ON GREEN ● |
| B | R3–7L | 30"x30" | LEFT LANE MUST TURN LEFT |
| C | R3–7R | 30"x30" | RIGHT LANE MUST TURN RIGHT |
| D | W3–3 | 36"x36" | SIGNAL AHEAD |
| E | R4–7 | 24"x30" | KEEP RIGHT |
| F | R10–11a | 24"x30" | NO TURN ON RED |
| G | R10–11a | 30"x36" | NO TURN ON RED |
| J | D3–4 | 16"x60" | REED ROAD |
| K | D3–4 | 16"x78" | EAGLE ROAD |
| L | R9–3a | 18"x18" | NO PEDESTRIAN CROSSING |
| M | R10–21 | 24"x30" | WAIT FOR GREEN |

| WEEKLY PROGRAM CHART | | | | | | |
|---|---|---|---|---|---|---|
| EVENT | DAY* | HOUR | MINUTE | SECOND | PROGRAM NUMBER | REMARK |
| 1 | 1–5 | 6 | 30 | 0 | 1 | AM PEAK |
| 2 | 1–5 | 9 | 30 | 0 | VOLUME– | OFF–PEAK |
| 3 | 1–5 | 15 | 30 | 0 | 2 | PM PEAK |
| 4 | 1–7 | 18 | 30 | 0 | VOLUME– | OFF–PEAK |
| 5 | 6,7 | 6 | 30 | 0 | VOLUME– | OFF–PEAK |
| | | | | | | |
| | | | | | | |

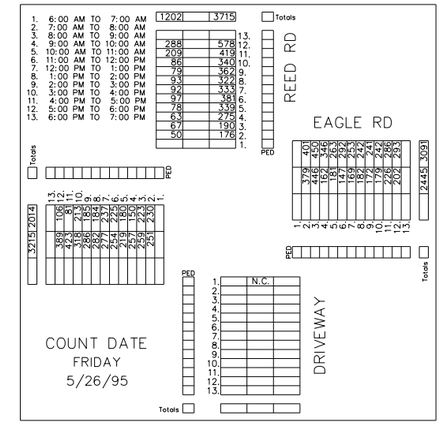
* DAY 1 = MONDAY

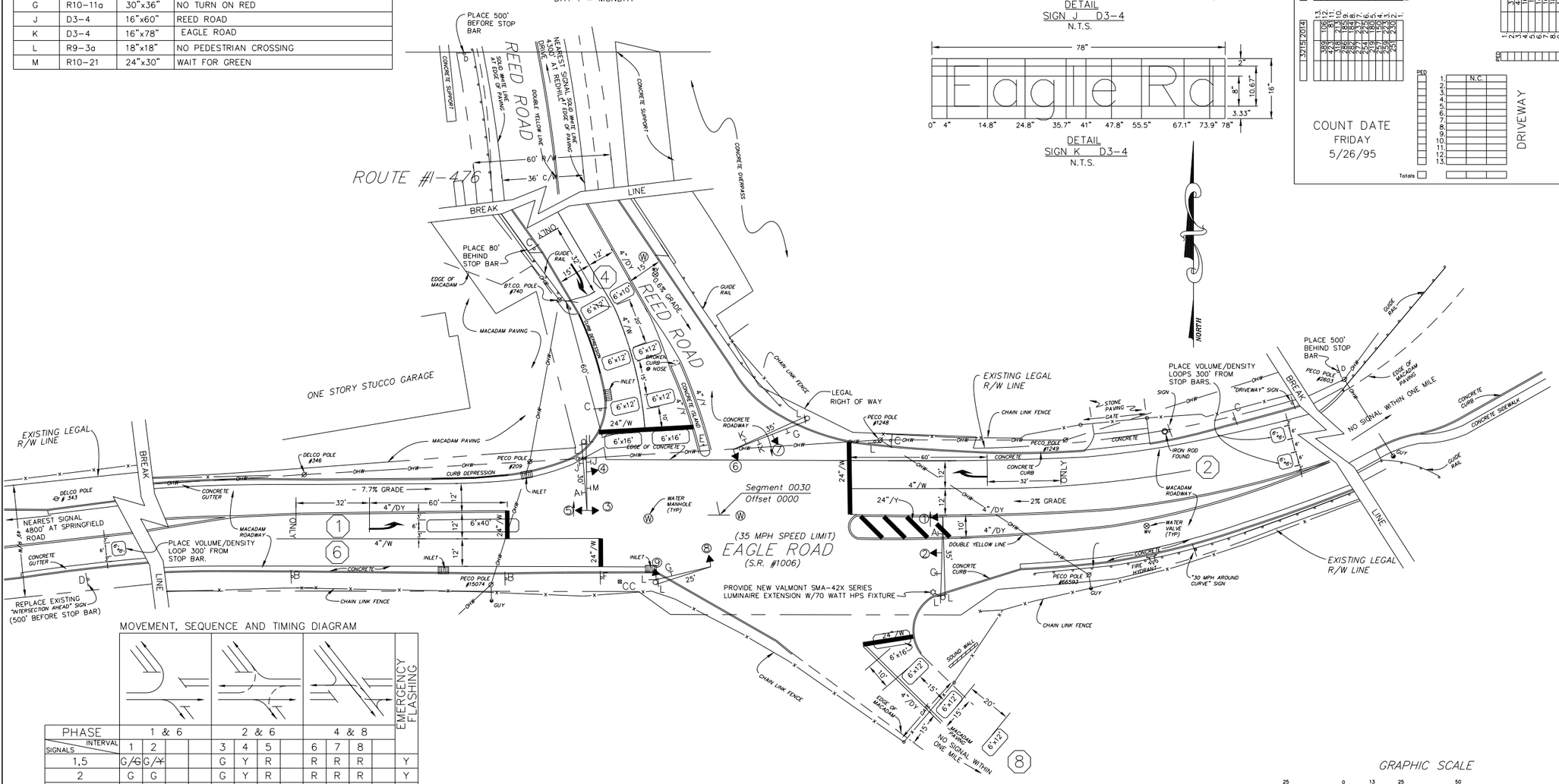



DETAIL
SIGN J D3–4
N.T.S.




DETAIL
SIGN K D3–4
N.T.S.



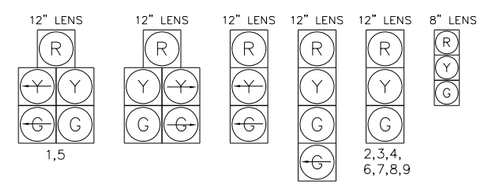

MOVEMENT, SEQUENCE AND TIMING DIAGRAM




| PHASE | 1 & 6 | | | | 2 & 6 | | | | 4 & 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNALS | 1 | 2 | | | 3 | 4 | 5 | | 6 | 7 | 8 | | |
| 1,5 | G/~~G~~ | G/~~Y~~ | | | G | Y | R | | R | R | R | | Y |
| 2 | G | G | | | G | Y | R | | R | R | R | | Y |
| 3,4 | R | R | | | G | Y | R | | R | R | R | | Y |
| 6,7 | R | R | | | R | R | R | | G | Y | R | | R |
| 8,9 | R | R | | | R | R | R | | G | Y | R | | R |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FIXED | | 3 | | | | 5 | 2 | | | 3 | 2 | | |
| MINIMUM | 3 | | | | 15 | | | | 5 | | | | |
| SECONDS/ACTUATION | – | | | | 2 | | | | – | | | | |
| MAX. INITIAL | – | | | | 32 | | | | – | | | | |
| PASSAGE | 3 | | | | 4.5 | | | | 3 | | | | |
| TIME BEFORE REDUCTION | – | | | | 32 | | | | – | | | | |
| TIME TO REDUCE | – | | | | 15 | | | | – | | | | |
| MIN. GAP | – | | | | 2.5 | | | | – | | | | |
| MAX. I | 10 | | | | 47 | | | | 25 | | | | |
| MEMORY | NL | | | | MR | | | | NL | | | | |
| PROGRAM 1 | 10 | 3 | | | 22 | 5 | 2 | | 13 | 3 | 2 | | 60 SEC. CYCLE |
| PROGRAM 2 | 7 | 3 | | | 13 | 5 | 2 | | 25 | 3 | 2 | | 60 SEC. CYCLE |

SIGNAL INDICATIONS




SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1, 2, 3, 4, 6, 7

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS _____

GRAPHIC SCALE

25 0 13 25 50 100

( IN FEET )
1 inch = 25 ft.

LEGEND

- 20' — MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- A — SIGN/IDENTIFYING LETTER
- 12'x6' — LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION DEVICE
- CURB CUT RAMP
- UTILITY POLE
- 2 — PHASE NUMBER

# GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 38, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 12, 1991.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAT 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC–7800 SERIES.

VOLUME/DENSITY LOOP PLACEMENT BASED ON 45 M.P.H. 85th PERCENTILE SPEED ON S.R. 1006 (EAGLE ROAD).

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEER DISTRICT 6–0

COUNTY: DELAWARE

MUNICIPALITY: SPRINGFIELD TOWNSHIP

INTERSECTION: EAGLE ROAD (S.R. 1006) AND REED ROAD

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

DATE

DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./ REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 1 OF 1 | PERMIT # 63–2851 | FILE # 2851

BVE File #: 79–2729–002 DRAWING #: PADOT–01

***TOWNSHIP***

8 Controller Data Entry - Sproul Rd (SR 0320) & Lawrence Rd

**Coordinator Data**

Offset Ref: 26

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | C/O/S | 111 | Offset | 48 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 28 | Phase 2 | 49 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 77 | Phase 7 | 0 | Phase 8 | 33 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | COS | 211 | Offset | 84 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 27 | Phase 2 | 48 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 75 | Phase 7 | 0 | Phase 8 | 35 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 311 | Offset | 98 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 38 | Phase 2 | 47 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 85 | Phase 7 | 0 | Phase 8 | 35 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

8 Controller Data Entry - Sproul Rd (SR 0320) & Lawrence Rd

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 80 | COS | 411 | Offset | 11 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 17 | Phase 2 | 32 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 49 | Phase 7 | 0 | Phase 8 | 31 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 511 | Offset | 27 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 31 | Phase 2 | 55 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 86 | Phase 7 | 0 | Phase 8 | 34 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Sproul Rd (SR 0320) & Lawrence Rd**

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

9 Controller Data Entry - Sproul Rd (SR 0320) & Williamsburg Dr/Shopping Ctr

**Coordinator Data**

Offset Ref: 26-

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | C/O/S | 111 | Offset | 101 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 13 | Phase 2 | 70 | Phase 3 | 0 | Phase 4 | 27 |
| Phase 5 | 10 | Phase 6 | 73 | Phase 7 | 0 | Phase 8 | 27 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | COS | 211 | Offset | 11 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 20 | Phase 2 | 47 | Phase 3 | 0 | Phase 4 | 43 |
| Phase 5 | 10 | Phase 6 | 57 | Phase 7 | 0 | Phase 8 | 43 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 311 | Offset | 13 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 19 | Phase 2 | 61 | Phase 3 | 0 | Phase 4 | 40 |
| Phase 5 | 10 | Phase 6 | 70 | Phase 7 | 0 | Phase 8 | 40 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

9 Controller Data Entry - Sproul Rd (SR 0320) & Williamsburg Dr/Shopping Ctr

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 80 | COS | 411 | Offset | 33 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 16 | Phase 2 | 33 | Phase 3 | 0 | Phase 4 | 31 |
| Phase 5 | 10 | Phase 6 | 39 | Phase 7 | 0 | Phase 8 | 31 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 511 | Offset | 66 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 22 | Phase 2 | 52 | Phase 3 | 0 | Phase 4 | 46 |
| Phase 5 | 10 | Phase 6 | 64 | Phase 7 | 0 | Phase 8 | 46 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Sproul Rd (SR 0320) & Williamsburg Dr/Shopping Ctr**

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

10 Controller Data Entry - Sproul Rd (SR 0320) & Reed Rd

**Coordinator Data**

Offset Ref: 26

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | C/O/S | 111 | Offset | 16 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 23 | Phase 2 | 63 | Phase 3 | 0 | Phase 4 | 24 |
| Phase 5 | 0 | Phase 6 | 86 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 110 | COS | 211 | Offset | 14 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 28 | Phase 2 | 51 | Phase 3 | 0 | Phase 4 | 31 |
| Phase 5 | 0 | Phase 6 | 79 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 311 | Offset | 84 |
| Vehicle Permissive Period 1 | 0 | Vehicle Permissive Period 2 | 0 | | |
| Vehicle Permissive 2 Displacement | 0 | Phase Reservice | 0 | | |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 31 | Phase 2 | 51 | Phase 3 | 0 | Phase 4 | 38 |
| Phase 5 | 0 | Phase 6 | 82 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

## 10 Controller Data Entry - Sproul Rd (SR 0320) & Reed Rd

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 80 | COS | 411 | Offset | 46 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 19 | Phase 2 | 39 | Phase 3 | 0 | Phase 4 | 22 |
| Phase 5 | 0 | Phase 6 | 58 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 511 | Offset | 19 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 29 | Phase 2 | 58 | Phase 3 | 0 | Phase 4 | 33 |
| Phase 5 | 0 | Phase 6 | 87 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

### Sproul Rd (SR 0320) & Reed Rd

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## 11 Controller Data Entry - Sproul Rd (SR 0320) & Springfield Rd

**Coordinator Data**

Offset Ref: 26-

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | C/O/S | 111 | Offset | 39 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 68 | Phase 3 | 0 | Phase 4 | 52 |
| Phase 5 | 0 | Phase 6 | 68 | Phase 7 | 0 | Phase 8 | 52 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 211 | Offset | 69 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 38 | Phase 3 | 0 | Phase 4 | 32 |
| Phase 5 | 0 | Phase 6 | 38 | Phase 7 | 0 | Phase 8 | 32 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 75 | COS | 311 | Offset | 70 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 36 | Phase 3 | 0 | Phase 4 | 39 |
| Phase 5 | 0 | Phase 6 | 36 | Phase 7 | 0 | Phase 8 | 39 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

## 11 Controller Data Entry - Sproul Rd (SR 0320) & Springfield Rd

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 411 | Offset | 61 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 37 | Phase 3 | 0 | Phase 4 | 33 |
| Phase 5 | 0 | Phase 6 | 37 | Phase 7 | 0 | Phase 8 | 33 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 26-

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 511 | Offset | 6 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 37 | Phase 3 | 0 | Phase 4 | 33 |
| Phase 5 | 0 | Phase 6 | 37 | Phase 7 | 0 | Phase 8 | 33 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

### Sproul Rd (SR 0320) & Springfield Rd

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## 12 Controller Data Entry - Sproul Rd (SR 0320) & Old Marple Rd

**Coordinator Data**

Offset Ref: 26+

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | C/O/S | 111 | Offset | 52 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 74 | Phase 3 | 0 | Phase 4 | 46 |
| Phase 5 | 0 | Phase 6 | 74 | Phase 7 | 0 | Phase 8 | 46 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 211 | Offset | 10 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 41 | Phase 3 | 0 | Phase 4 | 29 |
| Phase 5 | 0 | Phase 6 | 41 | Phase 7 | 0 | Phase 8 | 29 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 75 | COS | 311 | Offset | 4 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 47 | Phase 3 | 0 | Phase 4 | 28 |
| Phase 5 | 0 | Phase 6 | 47 | Phase 7 | 0 | Phase 8 | 28 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

## 12 Controller Data Entry - Sproul Rd (SR 0320) & Old Marple Rd

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 411 | Offset | 69 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 40 | Phase 3 | 0 | Phase 4 | 30 |
| Phase 5 | 0 | Phase 6 | 40 | Phase 7 | 0 | Phase 8 | 30 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 511 | Offset | 13 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0 | Phase 2 | 40 | Phase 3 | 0 | Phase 4 | 30 |
| Phase 5 | 0 | Phase 6 | 40 | Phase 7 | 0 | Phase 8 | 30 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

### Sproul Rd (SR 0320) & Old Marple Rd

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

101 Controller Data Entry - Springfield Rd & Eagle Rd

**Coordinator Data**

Offset Ref: 1

Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 60 | C/O/S | 111 | Offset | 59 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 27 | Phase 2 | 33 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 0 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 1

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 211 | Offset | 16 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 37 | Phase 2 | 33 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 0 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

**Coordinator Data**

Offset Ref: 1

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 75 | COS | 311 | Offset | 13 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 42 | Phase 2 | 33 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 0 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | | 3&4 | ☐ | | 5&6 | ☐ | | 7&8 | ☐ | |

101 Controller Data Entry - Springfield Rd & Eagle Rd

**Coordinator Data**

Offset Ref: 1

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 411 | Offset | 5 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 37 | Phase 2 | 33 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 0 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Coordinator Data**

Offset Ref: 1

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 70 | COS | 511 | Offset | 10 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 38 | Phase 2 | 32 | Phase 3 | 0 | Phase 4 | 0 |
| Phase 5 | 0 | Phase 6 | 0 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Seq to Lead/Lag | 1&2 | ☐ | 3&4 | ☐ | 5&6 | ☐ | 7&8 | ☐ | | | | |

**Springfield Rd & Eagle Rd**

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override | |
|---|---|---|---|---|---|
| 1 | 1 | 0000 | 4 | No | < Consider running Free at this Time period |
| 2 | 1 | 0630 | 1 | No | |
| 3 | 1 | 0900 | 2 | No | |
| 4 | 1 | 1430 | 3 | No | |
| 5 | 1 | 1900 | 4 | No | |
| 6 | 1 | 2100 | 4 | No | < Consider running Free at this Time period |
| 7 | 2 | 0000 | 4 | No | |
| 8 | 2 | 0800 | 5 | No | |
| 9 | 2 | 2000 | 4 | No | < Consider running Free at this Time period |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

13 Controller Data Entry - Sproul Rd (SR 0320) & SR 0001

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 111 | Offset | 0.39 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0.34 | Phase 2 | 0.24 | Phase 3 | 0.21 | Phase 4 | 0.21 |
| Phase 5 | 0.08 | Phase 6 | 0.5 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 140 | COS | 211 | Offset | 0.51 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0.23 | Phase 2 | 0.29 | Phase 3 | 0.24 | Phase 4 | 0.24 |
| Phase 5 | 0.09 | Phase 6 | 0.43 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 150 | COS | 311 | Offset | 0.98 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0.18 | Phase 2 | 0.32 | Phase 3 | 0.29 | Phase 4 | 0.21 |
| Phase 5 | 0.09 | Phase 6 | 0.41 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

## 13 Controller Data Entry - Sproul Rd (SR 0320) & SR 0001

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 140 | COS | 411 | Offset | 0.45 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0.23 | Phase 2 | 0.28 | Phase 3 | 0.25 | Phase 4 | 0.24 |
| Phase 5 | 0.08 | Phase 6 | 0.43 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 140 | COS | 511 | Offset | 0.01 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 0.23 | Phase 2 | 0.28 | Phase 3 | 0.25 | Phase 4 | 0.24 |
| Phase 5 | 0.1 | Phase 6 | 0.41 | Phase 7 | 0 | Phase 8 | 0 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Sproul Rd (SR 0320) & SR 0001**

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override |
|---|---|---|---|---|
| 1 | 1 | 0000 | 0 | No |
| 2 | 1 | 0630 | 1 | No |
| 3 | 1 | 0900 | 2 | No |
| 4 | 1 | 1430 | 3 | No |
| 5 | 1 | 1900 | 4 | No |
| 6 | 1 | 2100 | 0 | No |
| 7 | 2 | 0000 | 0 | No |
| 8 | 2 | 0800 | 5 | No |
| 9 | 2 | 2000 | 0 | No |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

203 Controller Data Entry - W. Springfield Rd & SR 0001

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 1

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 111 | Offset | 24 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 11 | Phase 2 | 49 | Phase 3 | 29 | Phase 4 | 31 |
| Phase 5 | 14 | Phase 6 | 46 | Phase 7 | 10 | Phase 8 | 50 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 2

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 211 | Offset | 0 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 11 | Phase 2 | 55 | Phase 3 | 21 | Phase 4 | 33 |
| Phase 5 | 11 | Phase 6 | 55 | Phase 7 | 10 | Phase 8 | 44 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 3

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 311 | Offset | 113 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 11 | Phase 2 | 52 | Phase 3 | 25 | Phase 4 | 32 |
| Phase 5 | 14 | Phase 6 | 49 | Phase 7 | 18 | Phase 8 | 39 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

203 Controller Data Entry - W. Springfield Rd & SR 0001

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 4

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 90 | COS | 411 | Offset | 36 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 11 | Phase 2 | 37 | Phase 3 | 11 | Phase 4 | 31 |
| Phase 5 | 11 | Phase 6 | 37 | Phase 7 | 10 | Phase 8 | 32 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

**Coordinator Data**

Offset Ref: 26+

Select Coordinator Pattern: Pattern 5

| | | | | | |
|---|---|---|---|---|---|
| Cycle Length | 120 | COS | 511 | Offset | 119 |
| Vehicle Permissive Period 1 | 0 | | | Vehicle Permissive Period 2 | 0 |
| Vehicle Permissive 2 Displacement | 0 | | | Phase Reservice | 0 |

Splits

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 1 | 11 | Phase 2 | 56 | Phase 3 | 21 | Phase 4 | 32 |
| Phase 5 | 12 | Phase 6 | 55 | Phase 7 | 11 | Phase 8 | 42 |
| Phase 9 | 0 | Phase 10 | 0 | Phase 12 | 0 | Phase 12 | 0 |

Split Sum:

| Split Extension/Ring | | Split Demand Pattern | | Crossing Artery Pattern |
|---|---|---|---|---|
| 1) 0 | 2) 0 | 1) 0 | 2) 0 | 0 |

| Phases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coordinated Phases | ☐ | ☑ | ☐ | ☐ | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Vehicle Max Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pedestrian Recall | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phase Omit | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Alternate Sequence | A: ☐ | | B: ☐ | | C: ☐ | | D: ☐ | | E: ☐ | | F: ☐ | |

## W. Springfield Rd & SR 0001

**NIC/TOD Weekly Programs**

| Weekley Program | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sunday | 2 | 1 | 1 | 1 |
| Monday | 1 | 1 | 1 | 1 |
| Tuesday | 1 | 1 | 1 | 1 |
| Wednesday | 1 | 1 | 1 | 1 |
| Thursday | 1 | 1 | 1 | 1 |
| Friday | 1 | 1 | 1 | 1 |
| Saturday | 2 | 1 | 1 | 1 |

**NIC Program Steps**

| Step | Program | Step Begins | Pattern | Override |
|---|---|---|---|---|
| 1 | 1 | 0000 | 0 | No |
| 2 | 1 | 0630 | 1 | No |
| 3 | 1 | 0900 | 2 | No |
| 4 | 1 | 1430 | 3 | No |
| 5 | 1 | 1900 | 4 | No |
| 6 | 1 | 2100 | 0 | No |
| 7 | 2 | 0000 | 0 | No |
| 8 | 2 | 0800 | 5 | No |
| 9 | 2 | 2000 | 0 | No |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# APPENDIX L

***AUXILIARY TURN LANE WARRANT ANALYSIS***

# *SPROUL ROAD & RI/RO DRIVEWAY (CONVENIENCE MARKET)*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIRO (CM) Driveway - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1721 | 4.0% | 1756 |
| | Right | - | 150 | 2.0% | 152 |

| | |
|---|---|
| Advancing Volume: | 1908 |
| Right Turn Volume: | 152 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 152 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

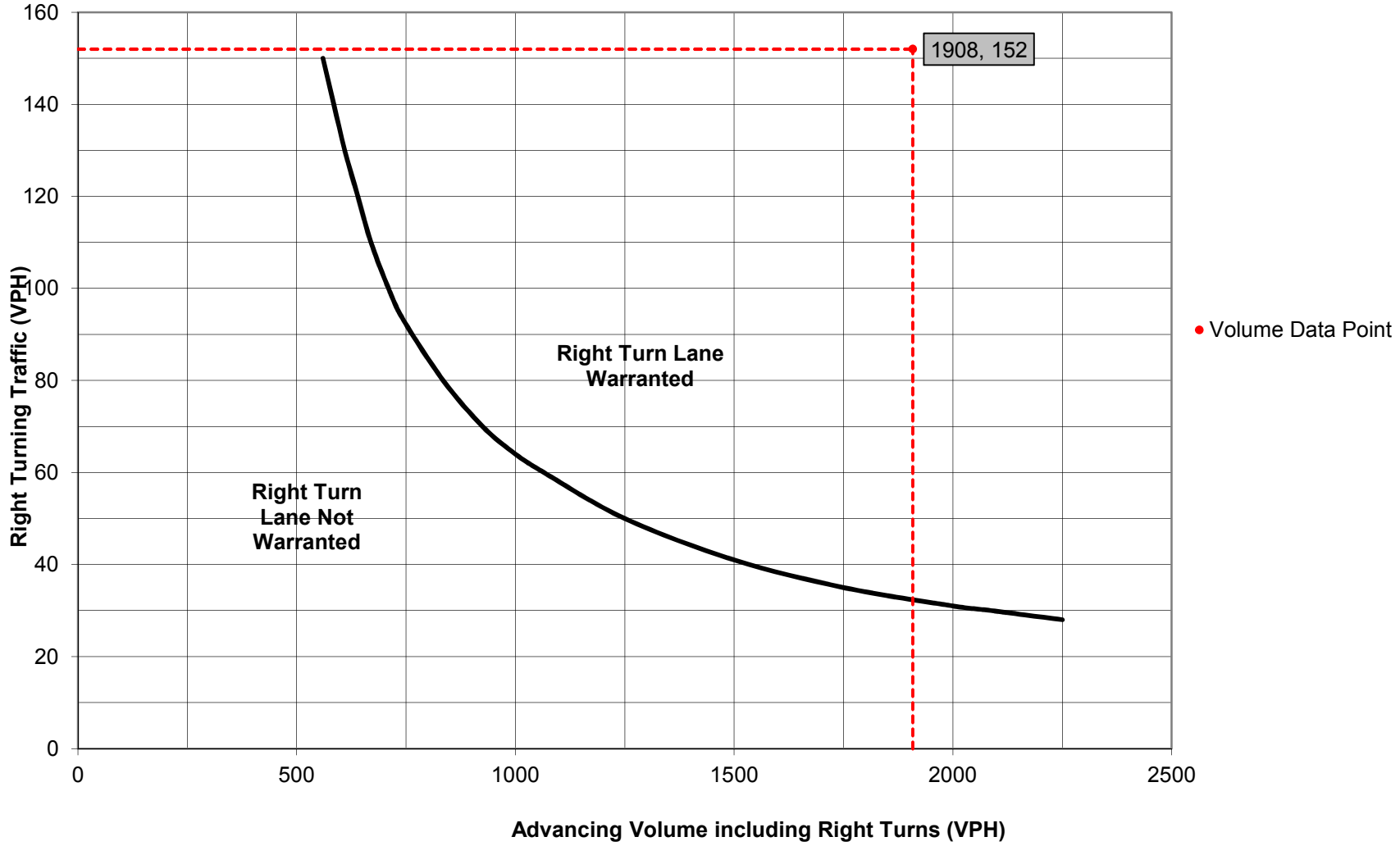
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 211 | Feet |
| Required Right Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIRO (CM) Driveway - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1671 | 1.0% | 1680 |
| | Right | - | 117 | 2.0% | 119 |

| | |
|---|---|
| Advancing Volume: | 1799 |
| Right Turn Volume: | 119 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 119 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

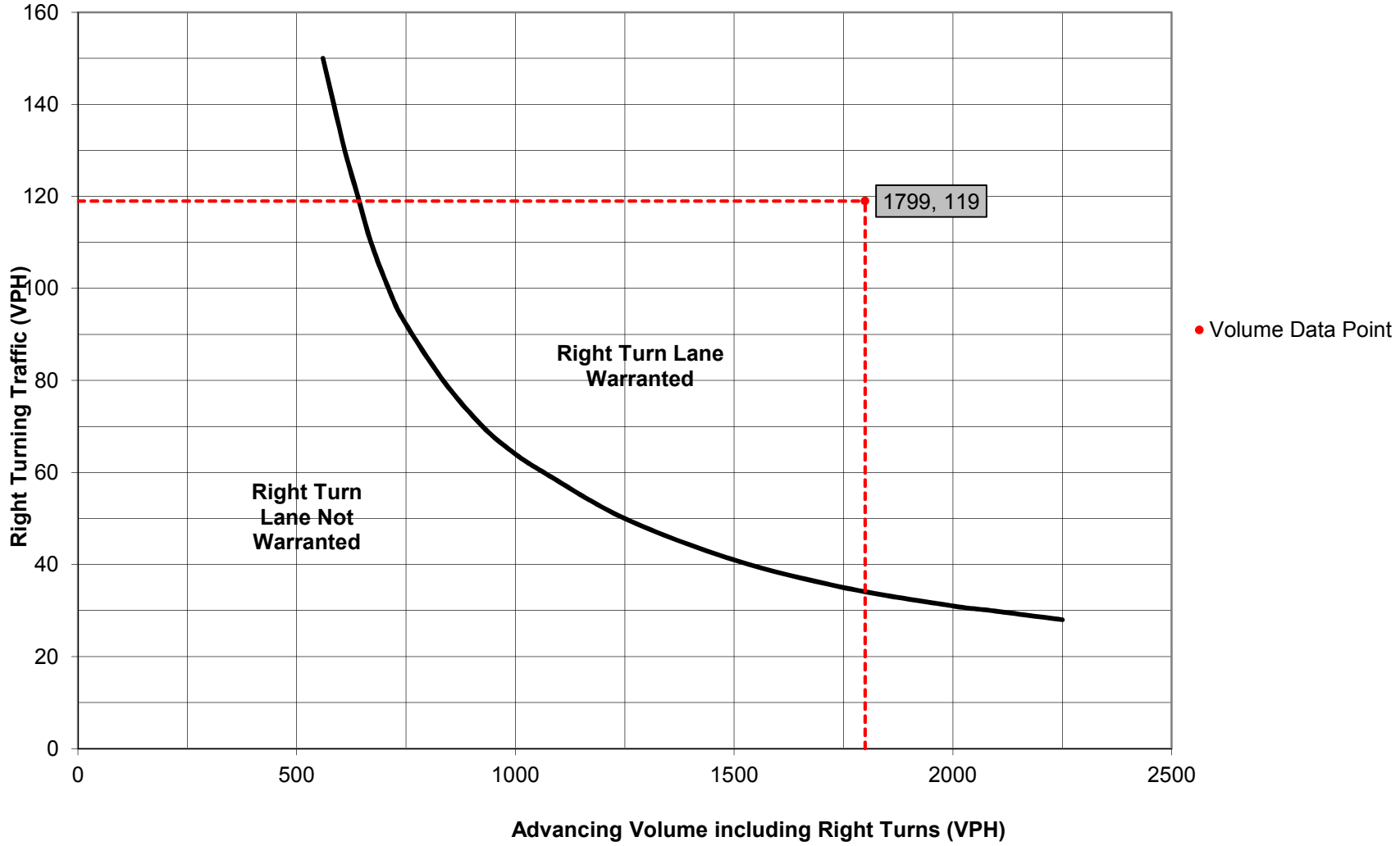
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 161 | Feet |
| Required Right Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIRO Driveway (CM) - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2029 | 1.0% | 2040 |
| | Right | - | 72 | 2.0% | 73 |

| | |
|---|---|
| Advancing Volume: | 2113 |
| Right Turn Volume: | 73 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 73 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

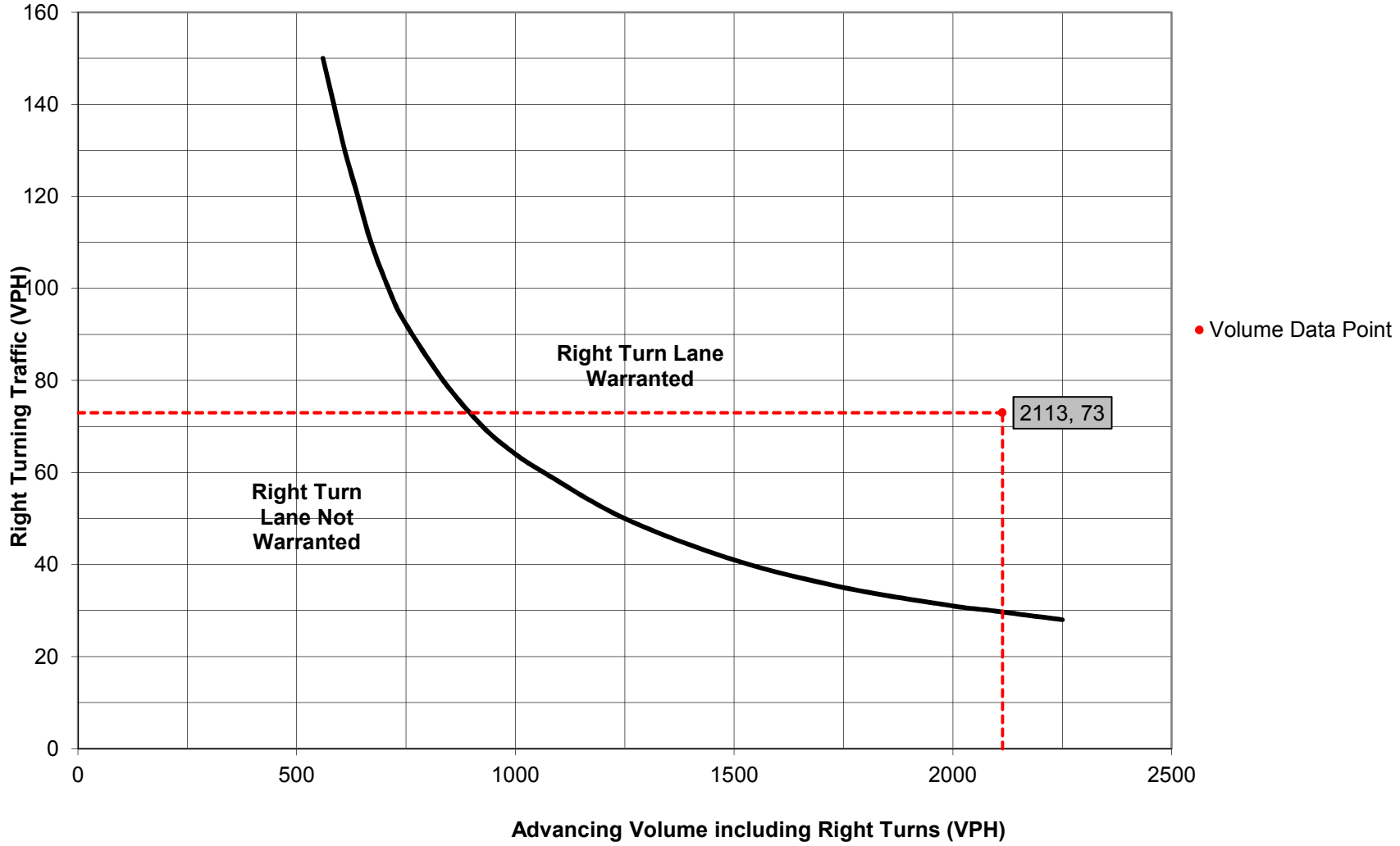
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 136 | Feet |
| Required Right Turn Lane Storage Length: | 150 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# *SPROUL ROAD & CRUM CREEK ROAD/ REALIGNED REED ROAD*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 57 | 4.0% | 59 |
| | Through | - | 1981 | 2.0% | 2001 |
| | Right | Yes | 302 | 2.0% | 306 |
| Opposing | Left | No | 443 | 0.0% | N/A |
| | Through | - | 1716 | 1.0% | 1725 |
| | Right | Yes | 52 | 2.0% | 53 |

| | |
|---|---|
| Advancing Volume: | 2366 |
| Opposing Volume: | 1778 |
| Left Turn Volume: | 59 |
| % Left Turns in Advancing Volume: | 2.49% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 443 | 0.0% | N/A |
| | Through | - | 1716 | 1.0% | N/A |
| | Right | - | 52 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 59 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Left Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)

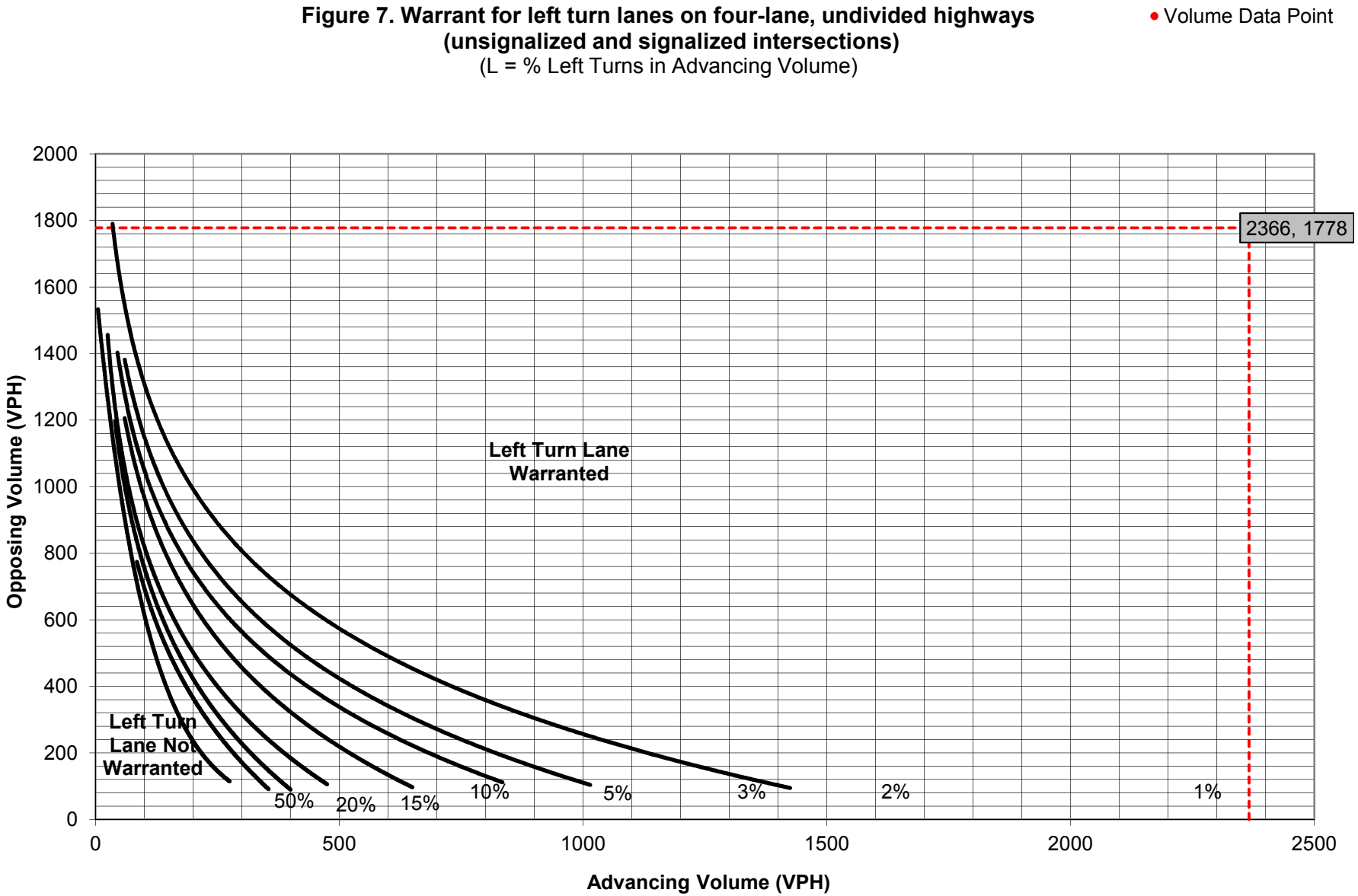
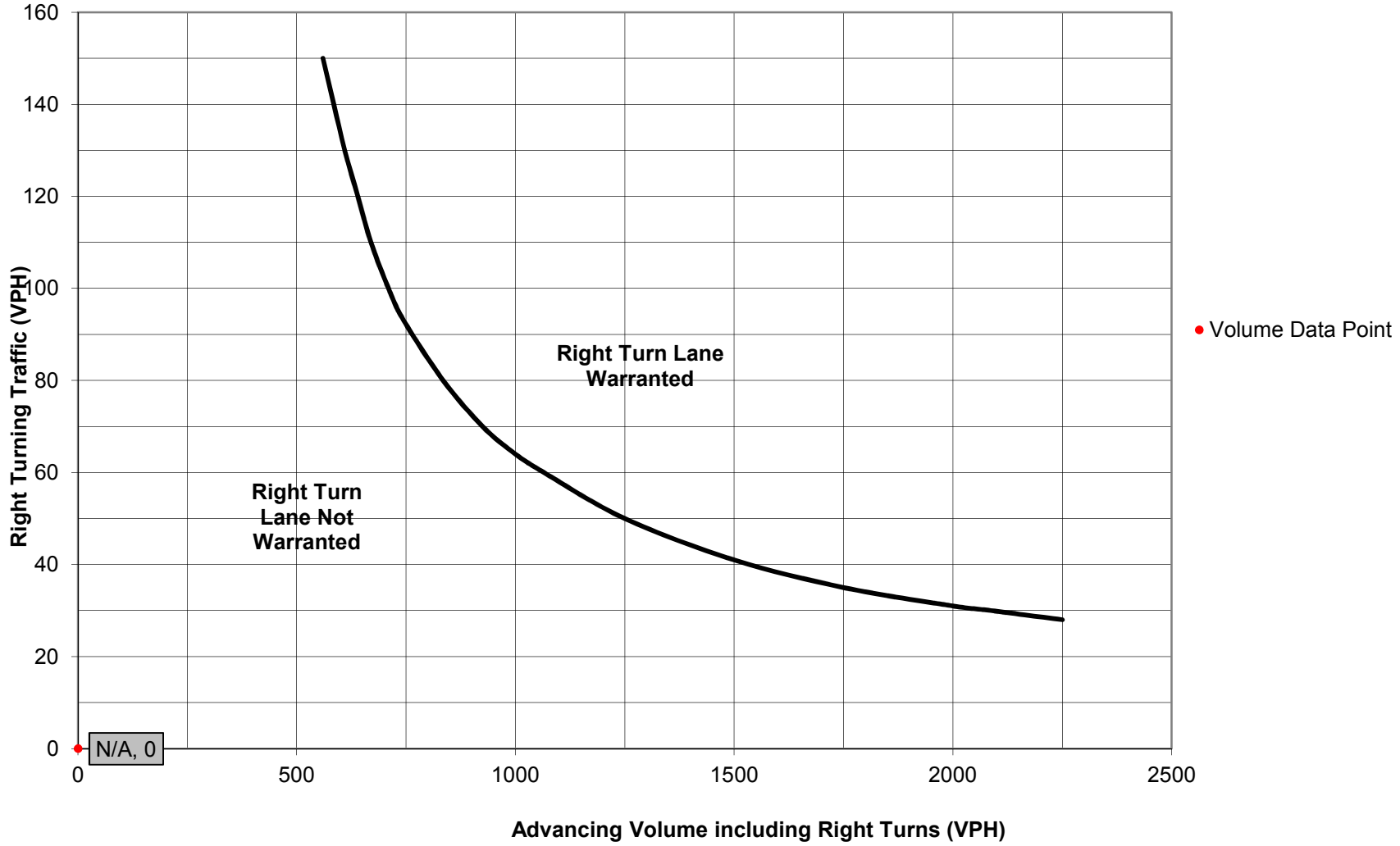


**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 443 | 0.0% | N/A |
| | Through | - | 1716 | 1.0% | N/A |
| | Right | Yes | 52 | 2.0% | N/A |
| Opposing | Left | No | 57 | 4.0% | N/A |
| | Through | - | 1981 | 2.0% | N/A |
| | Right | Yes | 302 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 57 | 4.0% | 59 |
| | Through | - | 1981 | 2.0% | 2001 |
| | Right | - | 302 | 2.0% | 306 |

| | |
|---|---|
| Advancing Volume: | 2366 |
| Right Turn Volume: | 306 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 306 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 10.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

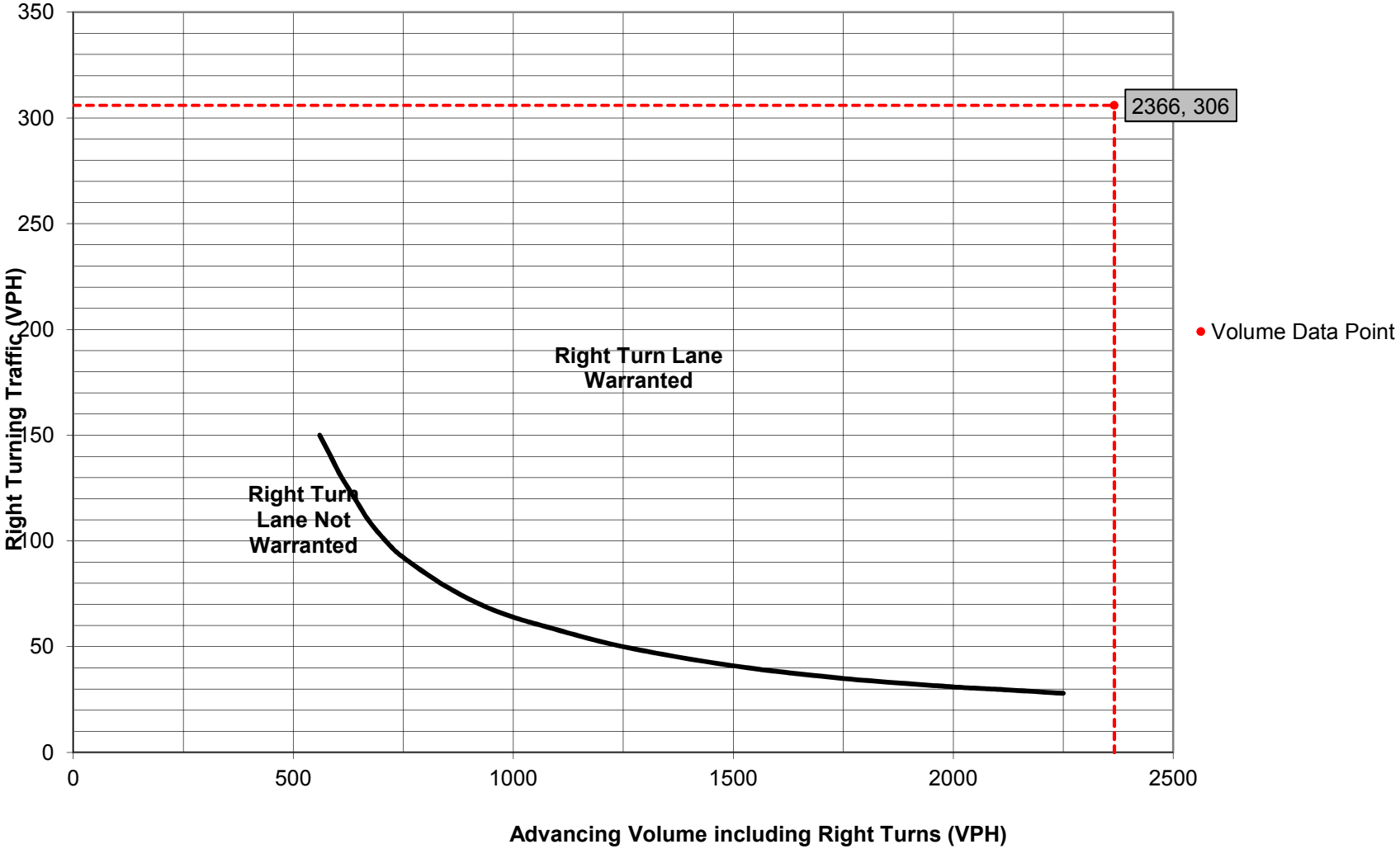
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | **N/A** | Feet |
| Condition B: | **75** | Feet |
| Condition C: | **436** | Feet |
| Required Right Turn Lane Storage Length: | **450** | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 443 | 0.0% | 443 |
| | Through | - | 1716 | 1.0% | 1725 |
| | Right | Yes | 52 | 2.0% | 53 |
| Opposing | Left | No | 57 | 4.0% | N/A |
| | Through | - | 1981 | 2.0% | 2001 |
| | Right | Yes | 302 | 2.0% | 306 |

| | |
|---|---|
| Advancing Volume: | 2221 |
| Opposing Volume: | 2307 |
| Left Turn Volume: | 443 |
| % Left Turns in Advancing Volume: | 19.95% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 57 | 4.0% | N/A |
| | Through | - | 1981 | 2.0% | N/A |
| | Right | - | 302 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 443 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 15.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

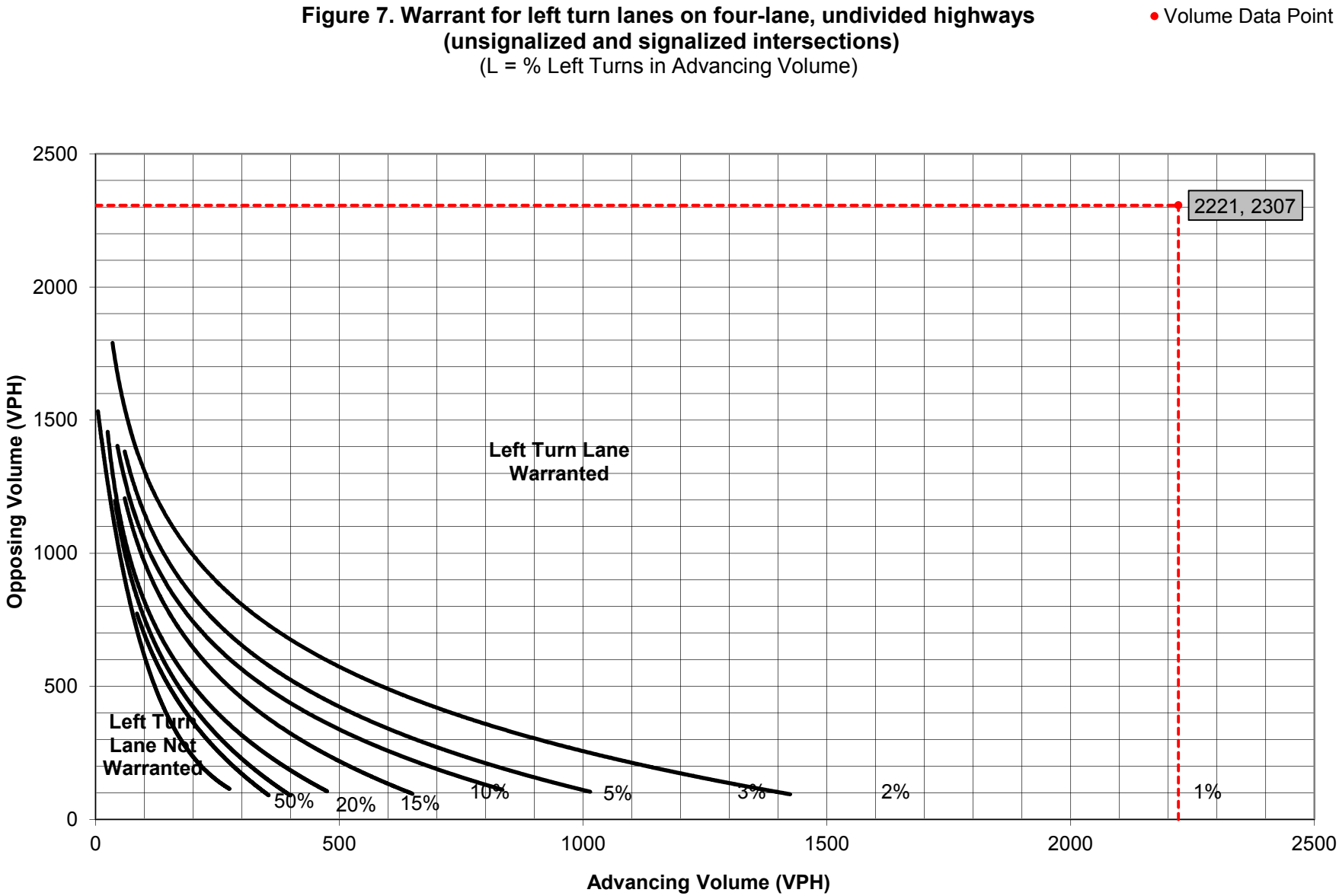
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 586 | Feet |
| Required Left Turn Lane Storage Length: | 600 | Feet |

Additional Findings:

Consider Dual Left Turn Lanes and Operational Analyses

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 57 | 4.0% | N/A |
| | Through | - | 1981 | 2.0% | N/A |
| | Right | Yes | 302 | 2.0% | N/A |
| Opposing | Left | No | 443 | 0.0% | N/A |
| | Through | - | 1716 | 1.0% | N/A |
| | Right | Yes | 52 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 443 | 0.0% | 443 |
| | Through | - | 1716 | 1.0% | 1725 |
| | Right | - | 52 | 2.0% | 53 |

| | |
|---|---|
| Advancing Volume: | 2221 |
| Right Turn Volume: | 53 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 53 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

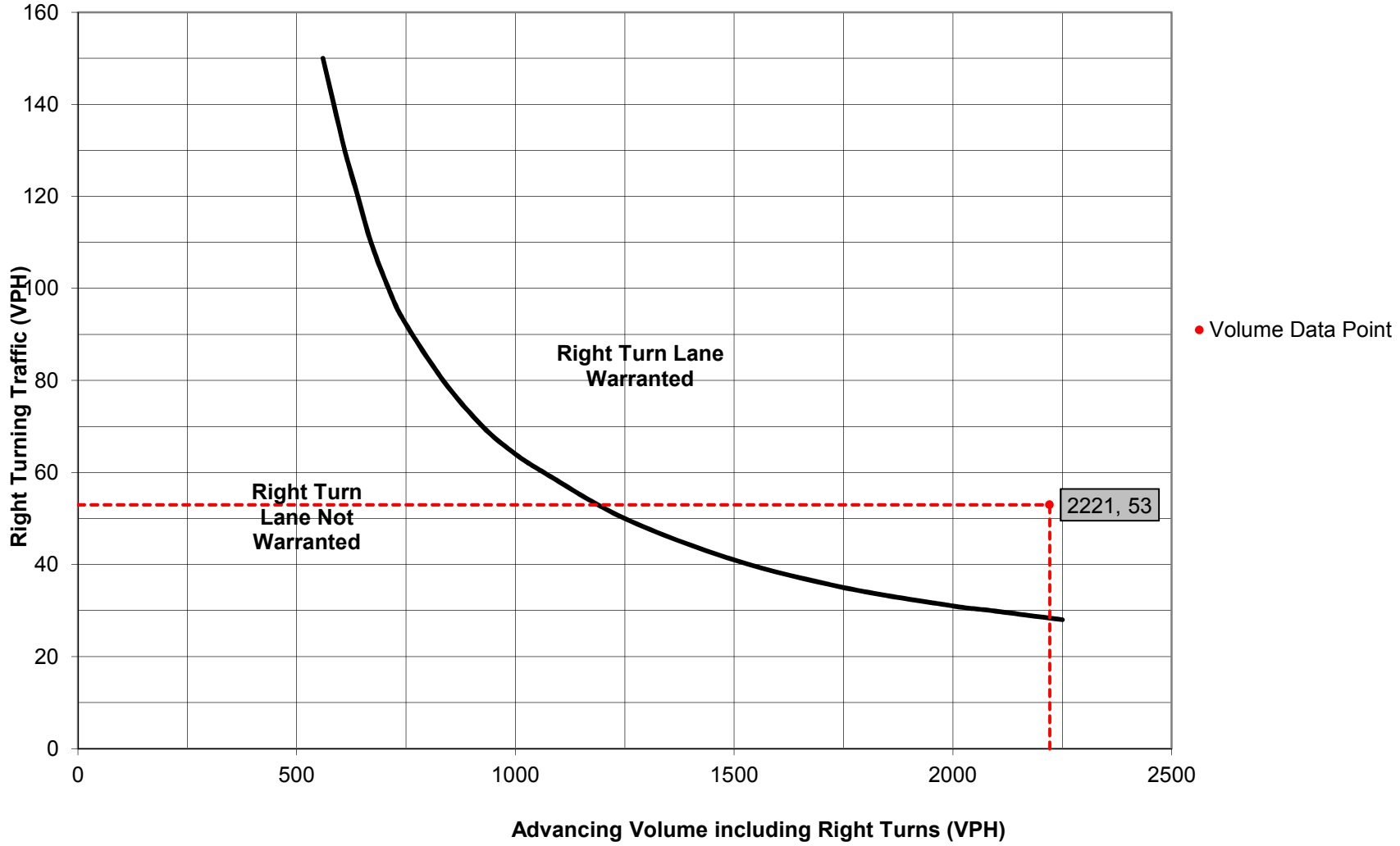
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Right Turn Lane Storage Length: | 175 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 60 | 3.0% | 61 |
| | Through | - | 2052 | 7.0% | 2124 |
| | Right | Yes | 293 | 2.0% | 296 |
| Opposing | Left | Yes | 249 | 2.0% | 252 |
| | Through | - | 1061 | 4.0% | 1083 |
| | Right | Yes | 29 | 3.0% | 30 |

| | |
|---|---|
| Advancing Volume: | 2481 |
| Opposing Volume: | 1365 |
| Left Turn Volume: | 61 |
| % Left Turns in Advancing Volume: | 2.46% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 249 | 2.0% | N/A |
| | Through | - | 1061 | 4.0% | N/A |
| | Right | - | 29 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 61 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 2.0 |

PennDOT Publication 46, Exhibit 11-6

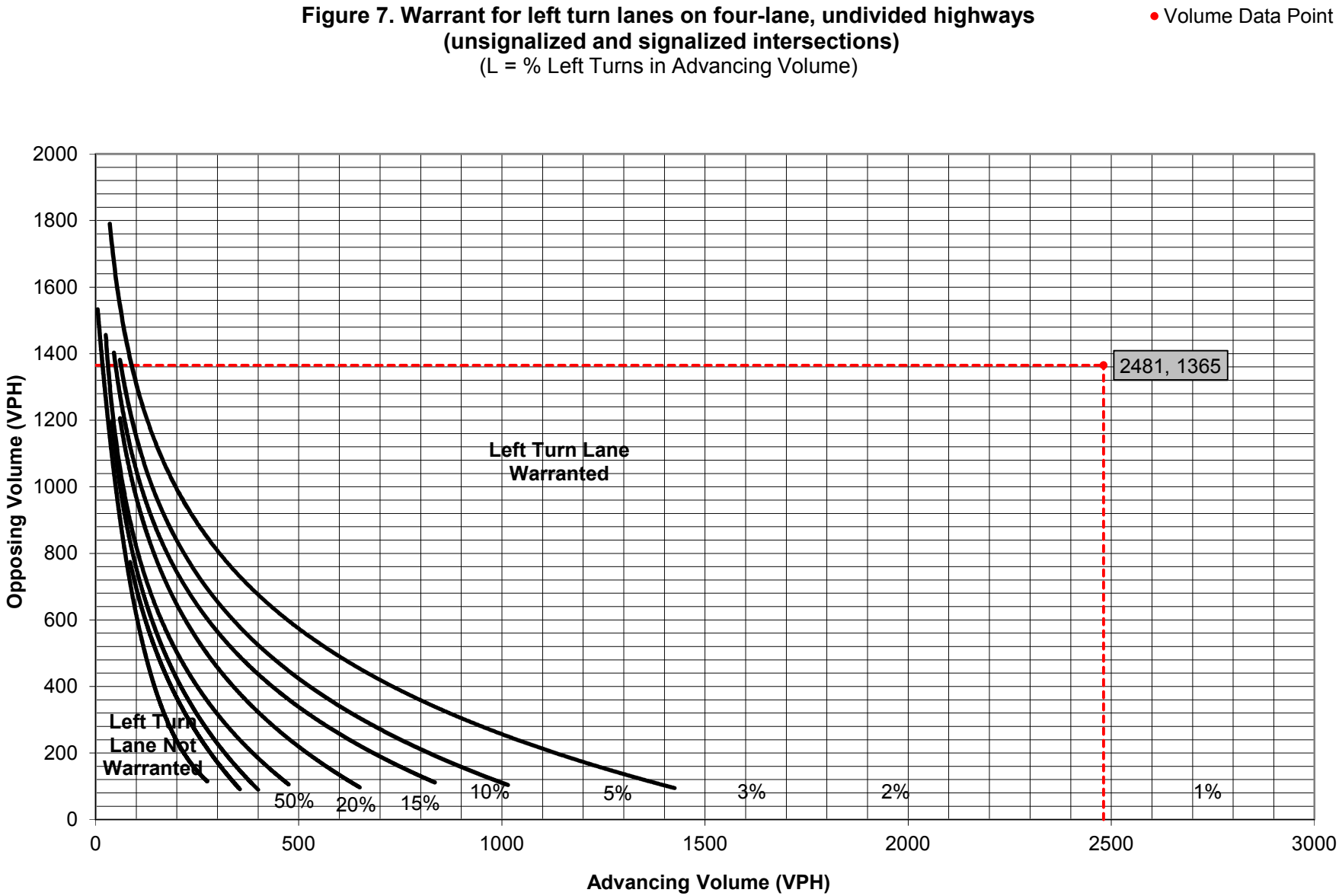
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Left Turn Lane Storage Length: | 175 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 249 | 2.0% | N/A |
| | Through | - | 1061 | 4.0% | N/A |
| | Right | Yes | 29 | 3.0% | N/A |
| Opposing | Left | Yes | 60 | 3.0% | N/A |
| | Through | - | 2052 | 7.0% | N/A |
| | Right | Yes | 293 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 60 | 3.0% | N/A |
| | Through | - | 2052 | 7.0% | 2124 |
| | Right | - | 293 | 2.0% | 296 |

| | |
|---|---|
| Advancing Volume: | 2420 |
| Right Turn Volume: | 296 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 296 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 10.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

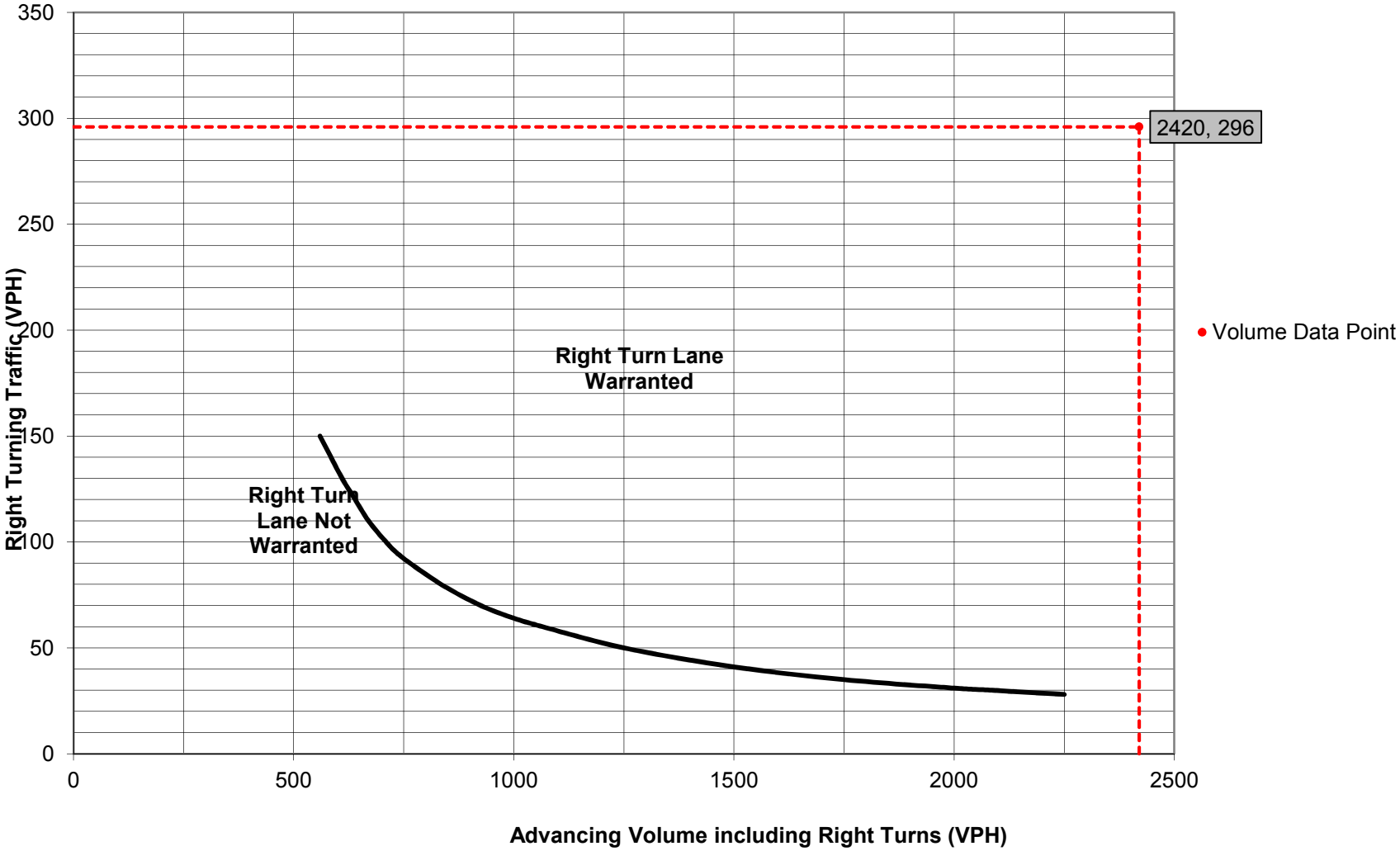
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 436 | Feet |
| Required Right Turn Lane Storage Length: | 450 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 249 | 2.0% | 252 |
| | Through | - | 1061 | 4.0% | 1083 |
| | Right | Yes | 29 | 3.0% | 30 |
| Opposing | Left | Yes | 60 | 3.0% | 61 |
| | Through | - | 2052 | 7.0% | 2124 |
| | Right | Yes | 293 | 2.0% | 296 |

| | |
|---|---|
| Advancing Volume: | 1365 |
| Opposing Volume: | 2481 |
| Left Turn Volume: | 252 |
| % Left Turns in Advancing Volume: | 18.46% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 60 | 3.0% | N/A |
| | Through | - | 2052 | 7.0% | N/A |
| | Right | - | 293 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 252 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 8.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

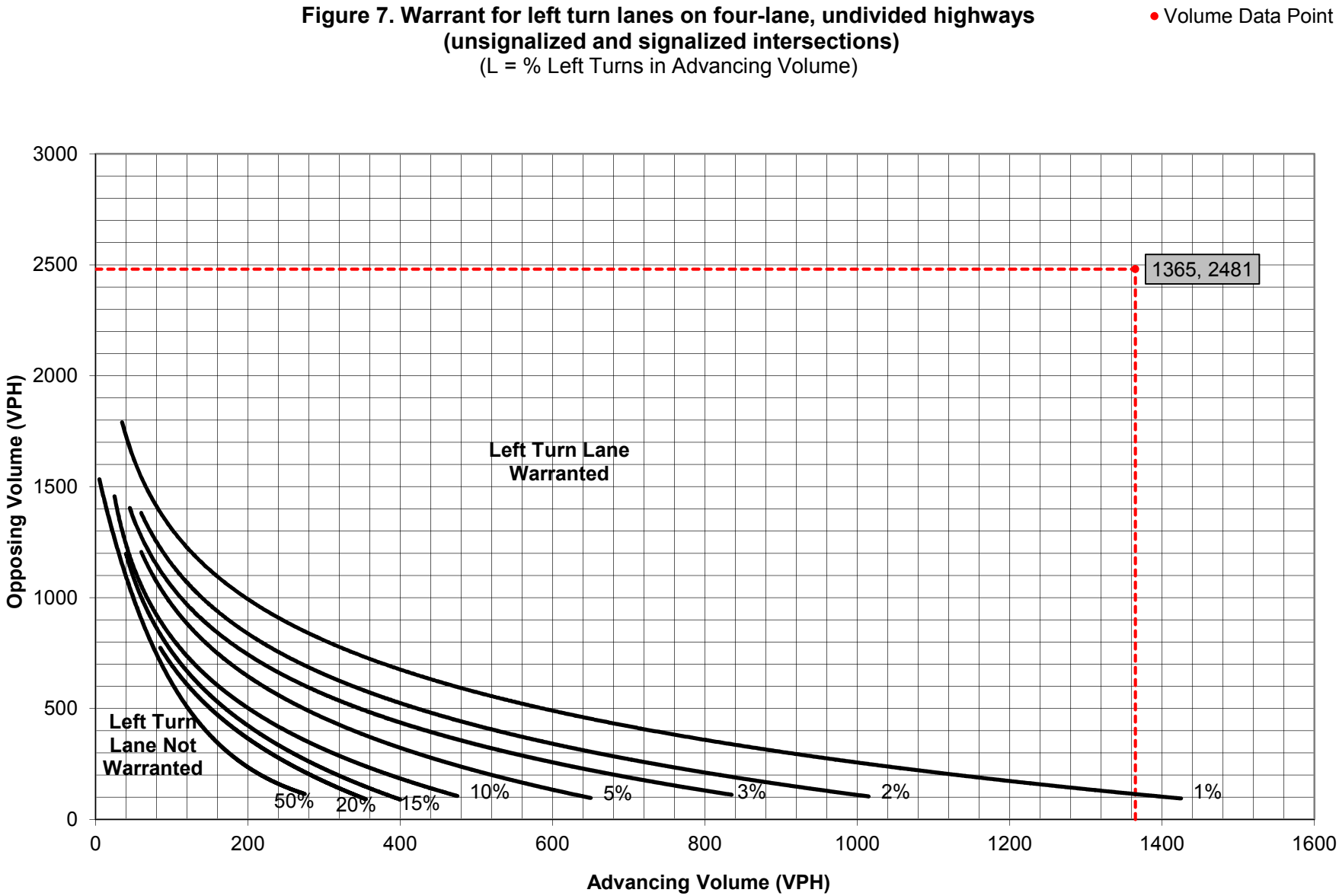
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 386 | Feet |
| Required Left Turn Lane Storage Length: | 400 | Feet |

Additional Findings:

Consider Dual Left Turn Lanes and Operational Analyses

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 60 | 3.0% | N/A |
| | Through | - | 2052 | 7.0% | N/A |
| | Right | Yes | 293 | 2.0% | N/A |
| Opposing | Left | Yes | 249 | 2.0% | N/A |
| | Through | - | 1061 | 4.0% | N/A |
| | Right | Yes | 29 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 249 | 2.0% | N/A |
| | Through | - | 1061 | 4.0% | 1083 |
| | Right | - | 29 | 3.0% | 30 |

| | |
|---|---|
| Advancing Volume: | 1113 |
| Right Turn Volume: | 30 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 30 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

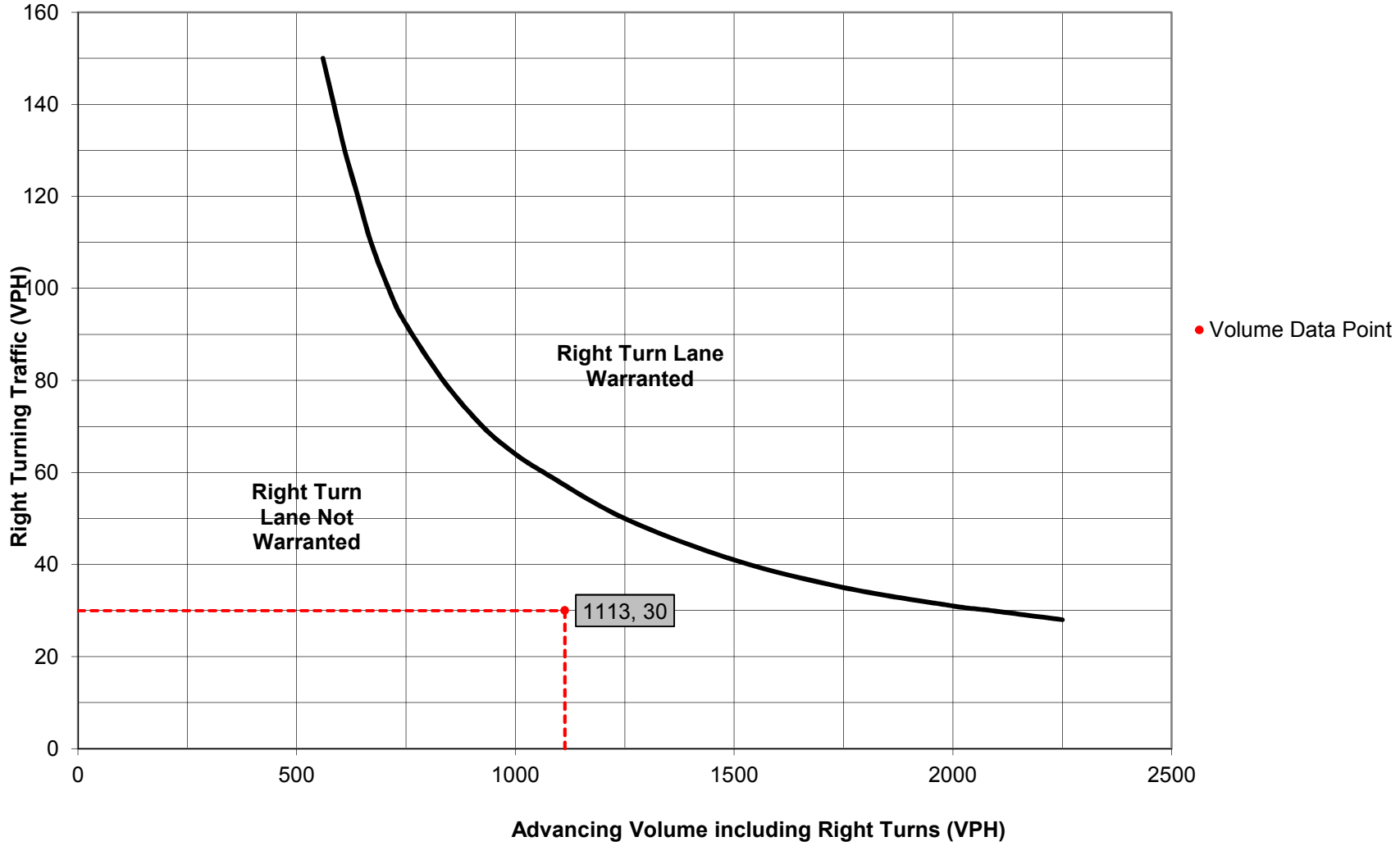
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 3.0% | 50 |
| | Through | - | 1471 | 7.0% | 1523 |
| | Right | Yes | 274 | 2.0% | 277 |
| Opposing | Left | No | 426 | 2.0% | N/A |
| | Through | - | 2235 | 4.0% | 2280 |
| | Right | Yes | 96 | 3.0% | 98 |

| | |
|---|---|
| Advancing Volume: | 1850 |
| Opposing Volume: | 2378 |
| Left Turn Volume: | 50 |
| % Left Turns in Advancing Volume: | 2.70% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 426 | 2.0% | N/A |
| | Through | - | 2235 | 4.0% | N/A |
| | Right | - | 96 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 50 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 2.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

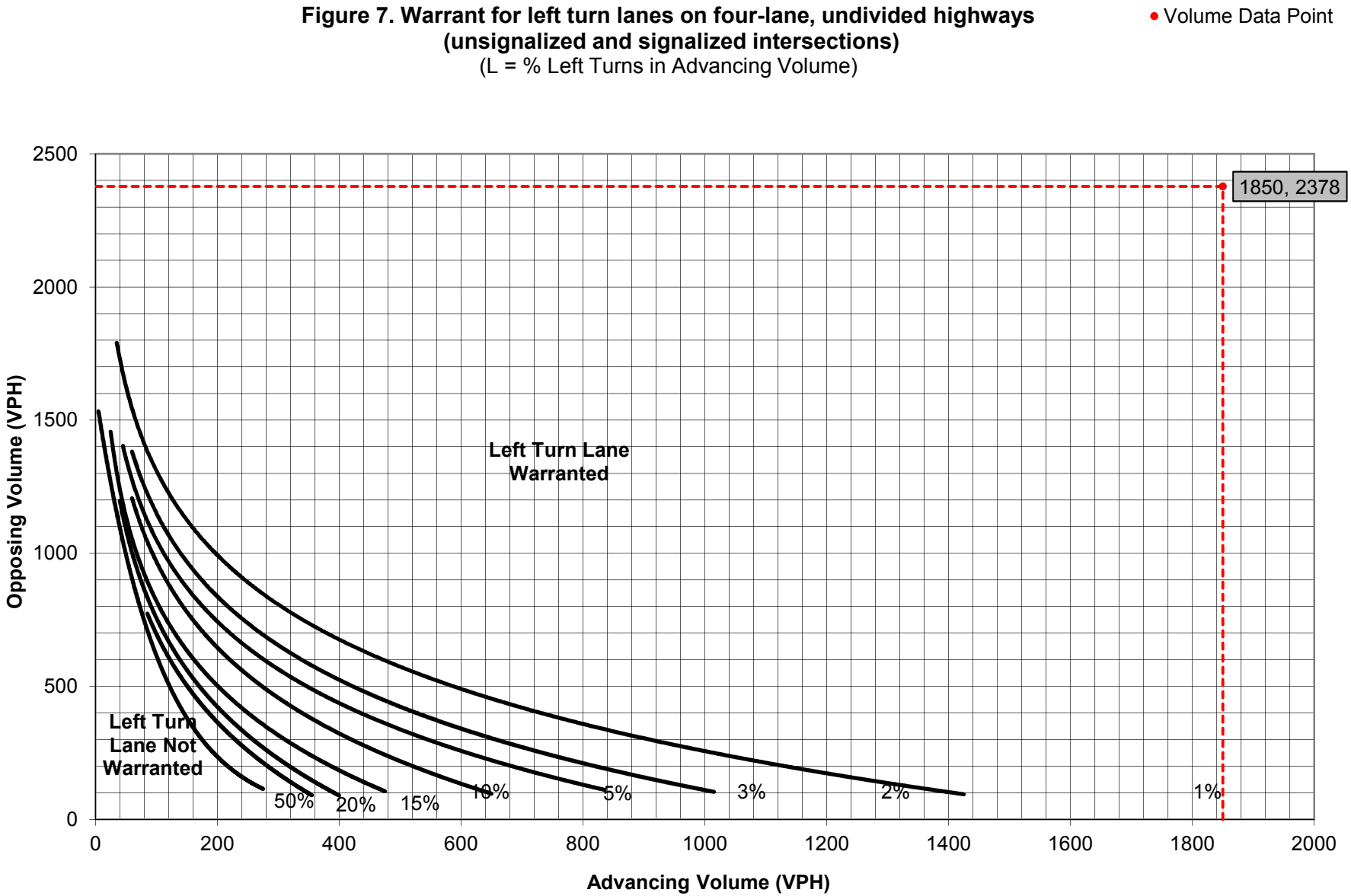
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Left Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 426 | 2.0% | N/A |
| | Through | - | 2235 | 4.0% | N/A |
| | Right | Yes | 96 | 3.0% | N/A |
| Opposing | Left | No | 49 | 3.0% | N/A |
| | Through | - | 1471 | 7.0% | N/A |
| | Right | Yes | 274 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 3.0% | 50 |
| | Through | - | 1471 | 7.0% | 1523 |
| | Right | - | 274 | 2.0% | 277 |

| | |
|---|---|
| Advancing Volume: | 1850 |
| Right Turn Volume: | 277 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 277 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 9.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

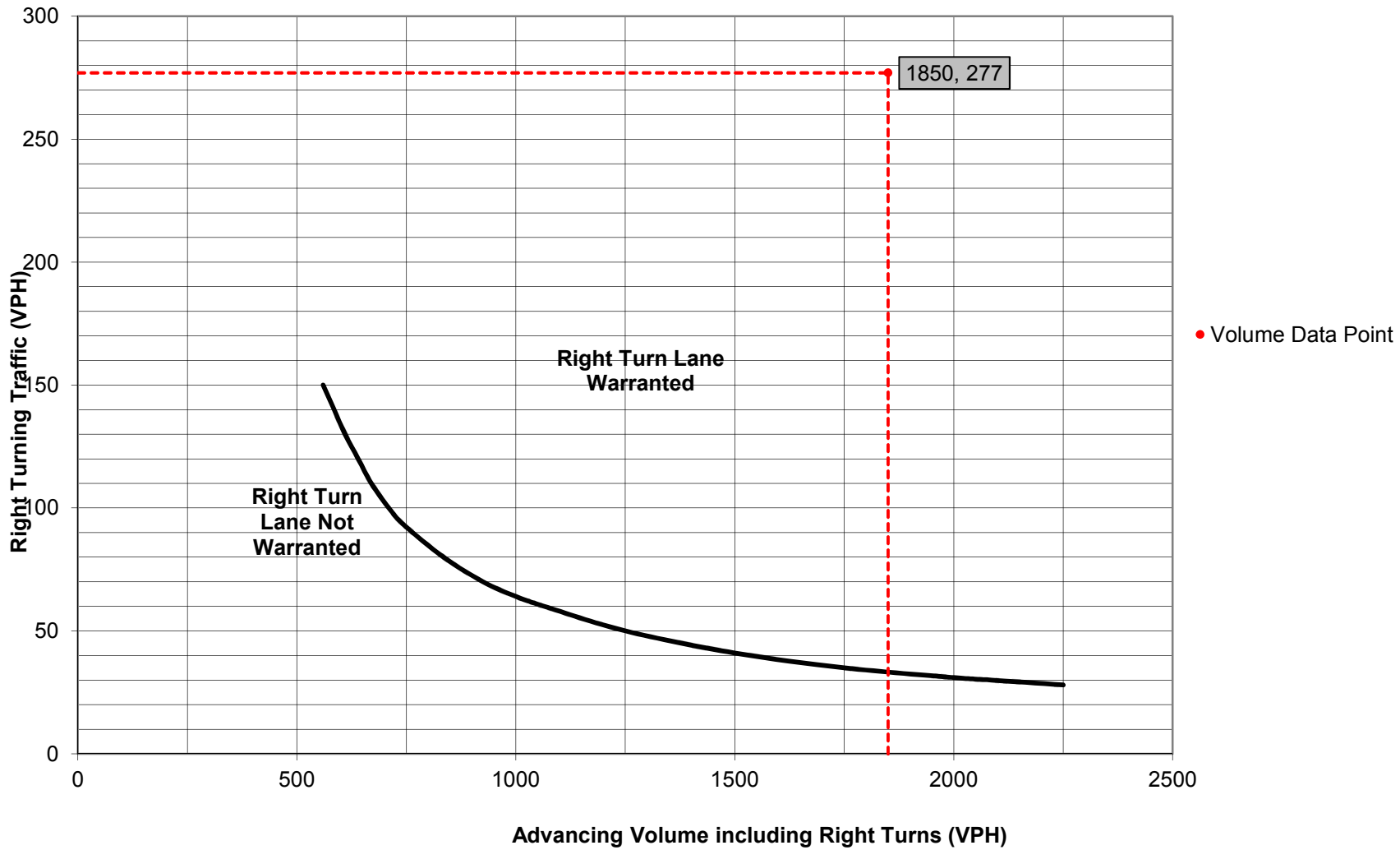
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 411 | Feet |
| Required Right Turn Lane Storage Length: | 425 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 426 | 2.0% | 431 |
| | Through | - | 2235 | 4.0% | 2280 |
| | Right | Yes | 96 | 3.0% | 98 |
| Opposing | Left | No | 49 | 3.0% | N/A |
| | Through | - | 1471 | 7.0% | 1523 |
| | Right | Yes | 274 | 2.0% | 277 |

| | |
|---|---|
| Advancing Volume: | 2809 |
| Opposing Volume: | 1800 |
| Left Turn Volume: | 431 |
| % Left Turns in Advancing Volume: | 15.34% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 3.0% | N/A |
| | Through | - | 1471 | 7.0% | N/A |
| | Right | - | 274 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 431 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 14.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

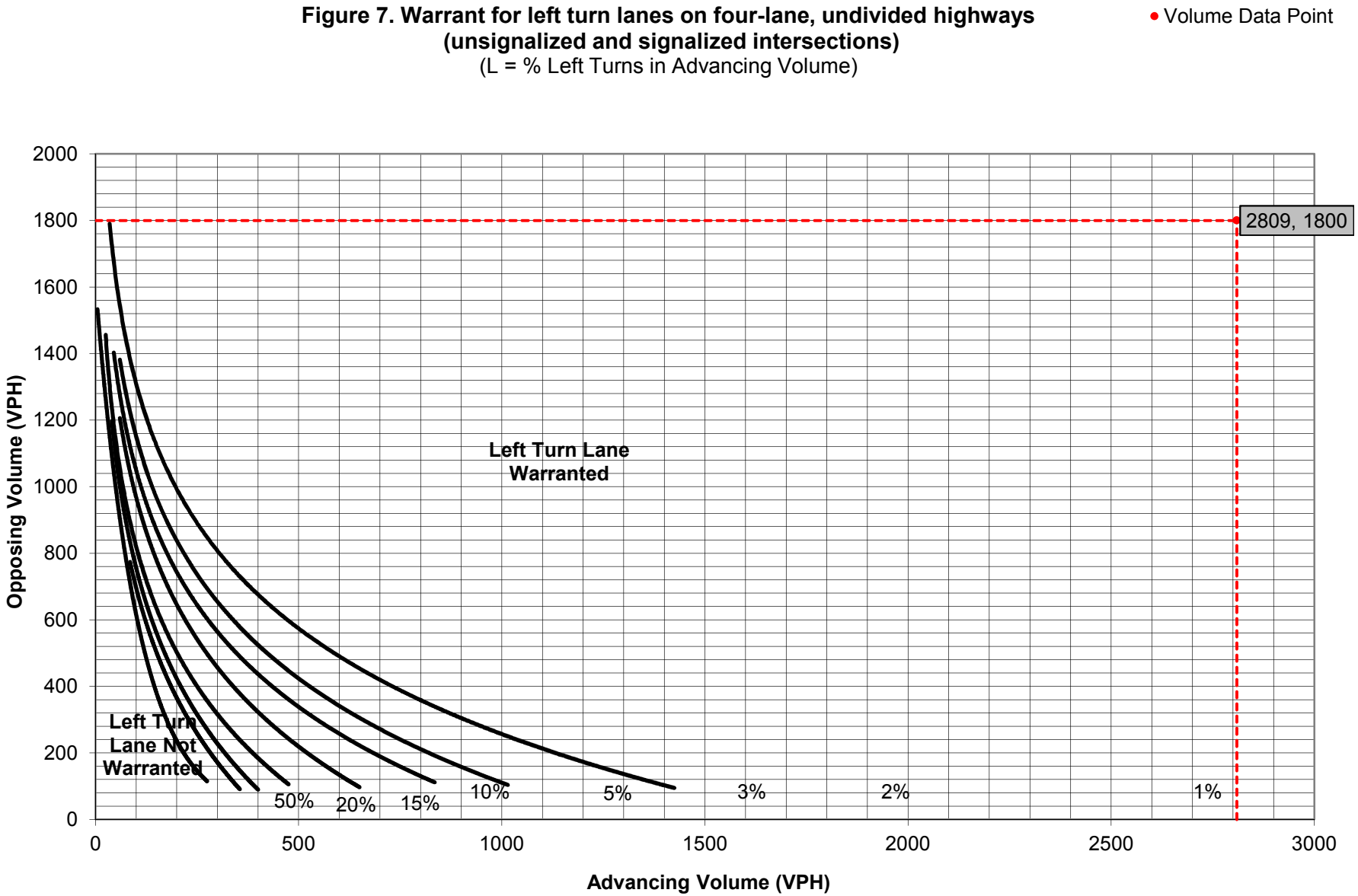
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 561 | Feet |
| Required Left Turn Lane Storage Length: | 575 | Feet |

Additional Findings:

Consider Dual Left Turn Lanes and Operational Analyses

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Reed Road/Crum Creek - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 3.0% | N/A |
| | Through | - | 1471 | 7.0% | N/A |
| | Right | Yes | 274 | 2.0% | N/A |
| Opposing | Left | No | 426 | 2.0% | N/A |
| | Through | - | 2235 | 4.0% | N/A |
| | Right | Yes | 96 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 426 | 2.0% | 431 |
| | Through | - | 2235 | 4.0% | 2280 |
| | Right | - | 96 | 3.0% | 98 |

| | |
|---|---|
| Advancing Volume: | 2809 |
| Right Turn Volume: | 98 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 98 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

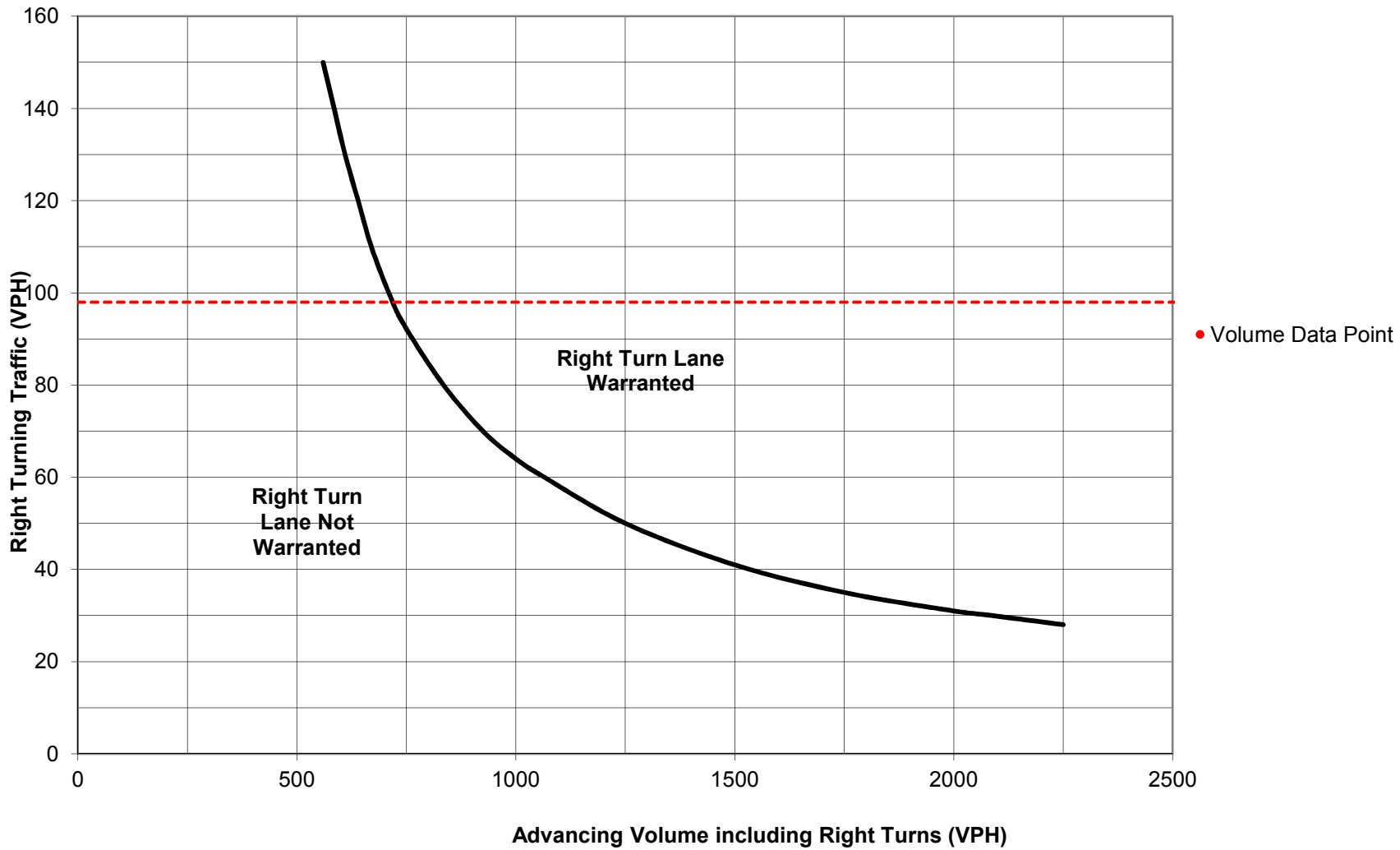
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 211 | Feet |
| Required Right Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# *SPROUL ROAD & RI/RO/LI DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 53 | 2.0% | N/A |
| | Through | - | 1361 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2324 | 4.0% | N/A |
| | Right | Yes | 58 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2324 | 4.0% | 2371 |
| | Right | - | 58 | 2.0% | 59 |

| | |
|---|---|
| Advancing Volume: | 2430 |
| Right Turn Volume: | 59 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 59 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

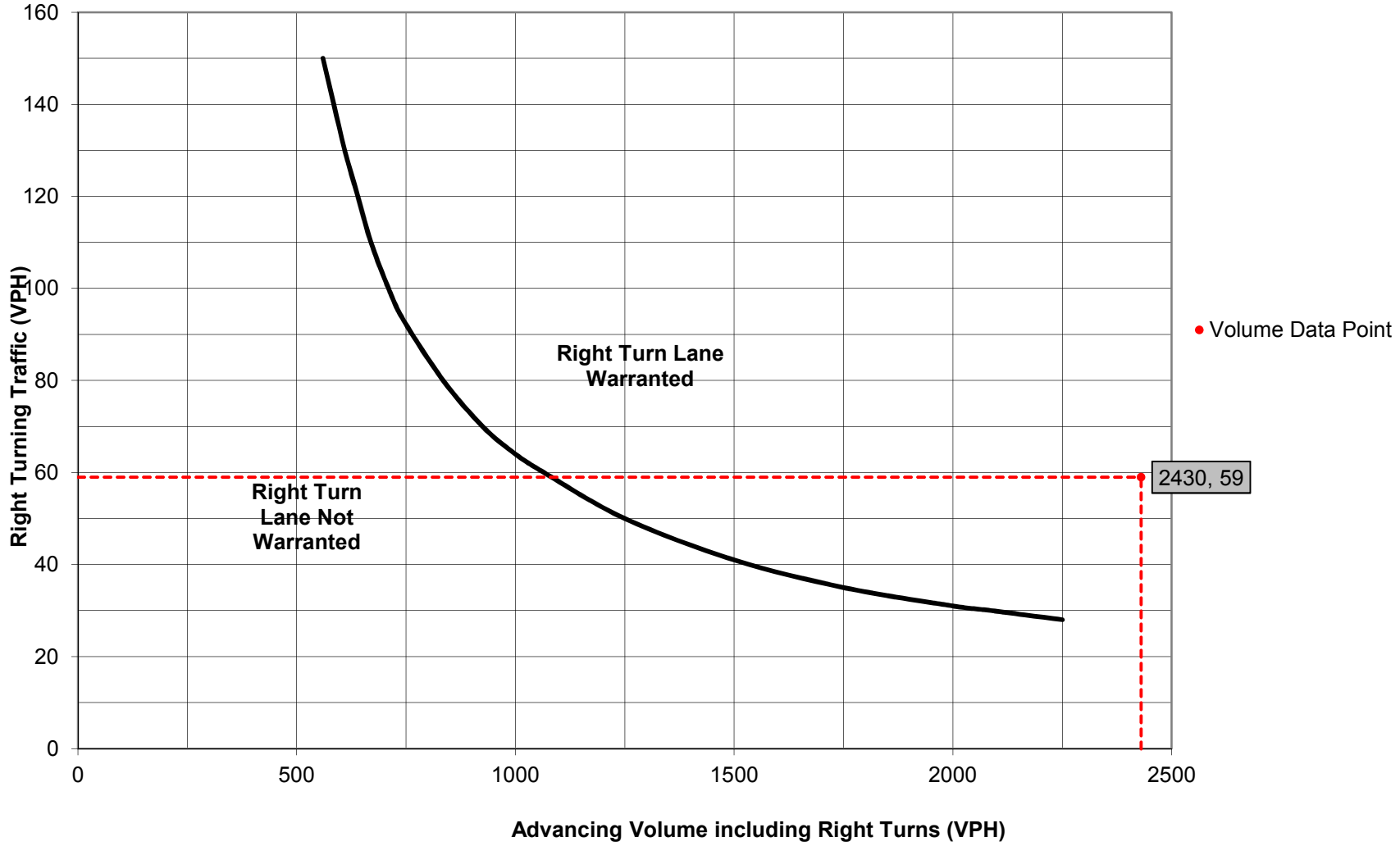
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 136 | Feet |
| Required Right Turn Lane Storage Length: | 150 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 135 | 2.0% | N/A |
| | Through | - | 2536 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1661 | 1.0% | N/A |
| | Right | Yes | 109 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1661 | 1.0% | 1670 |
| | Right | - | 109 | 2.0% | 111 |

| | |
|---|---|
| Advancing Volume: | 1781 |
| Right Turn Volume: | 111 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 111 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

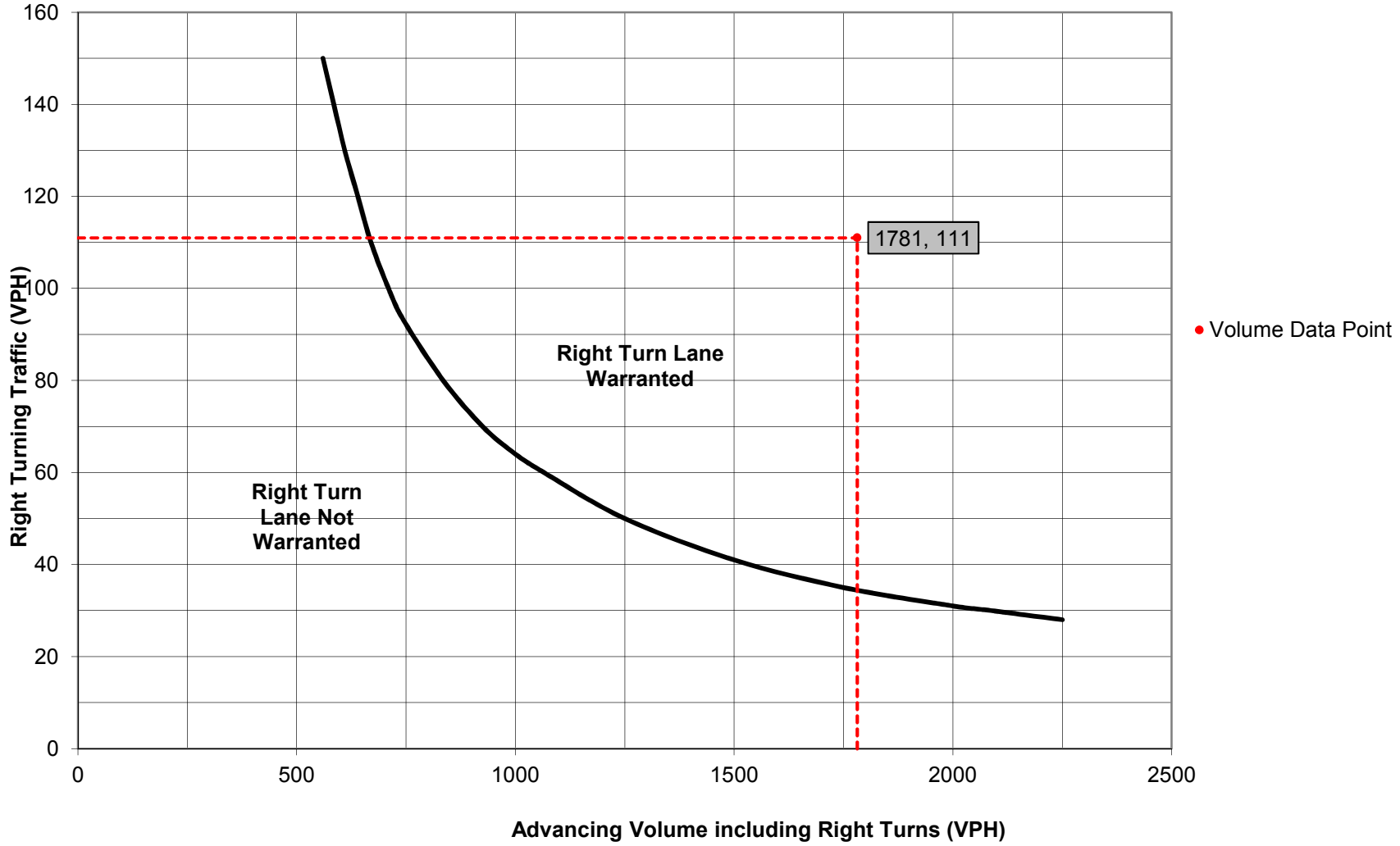
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 161 | Feet |
| Required Right Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 135 | 2.0% | 137 |
| | Through | - | 2536 | 2.0% | 2562 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1661 | 1.0% | 1670 |
| | Right | Yes | 109 | 2.0% | 111 |

| | |
|---|---|
| Advancing Volume: | 2699 |
| Opposing Volume: | 1781 |
| Left Turn Volume: | 137 |
| % Left Turns in Advancing Volume: | 5.08% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1661 | 1.0% | N/A |
| | Right | - | 109 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 137 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

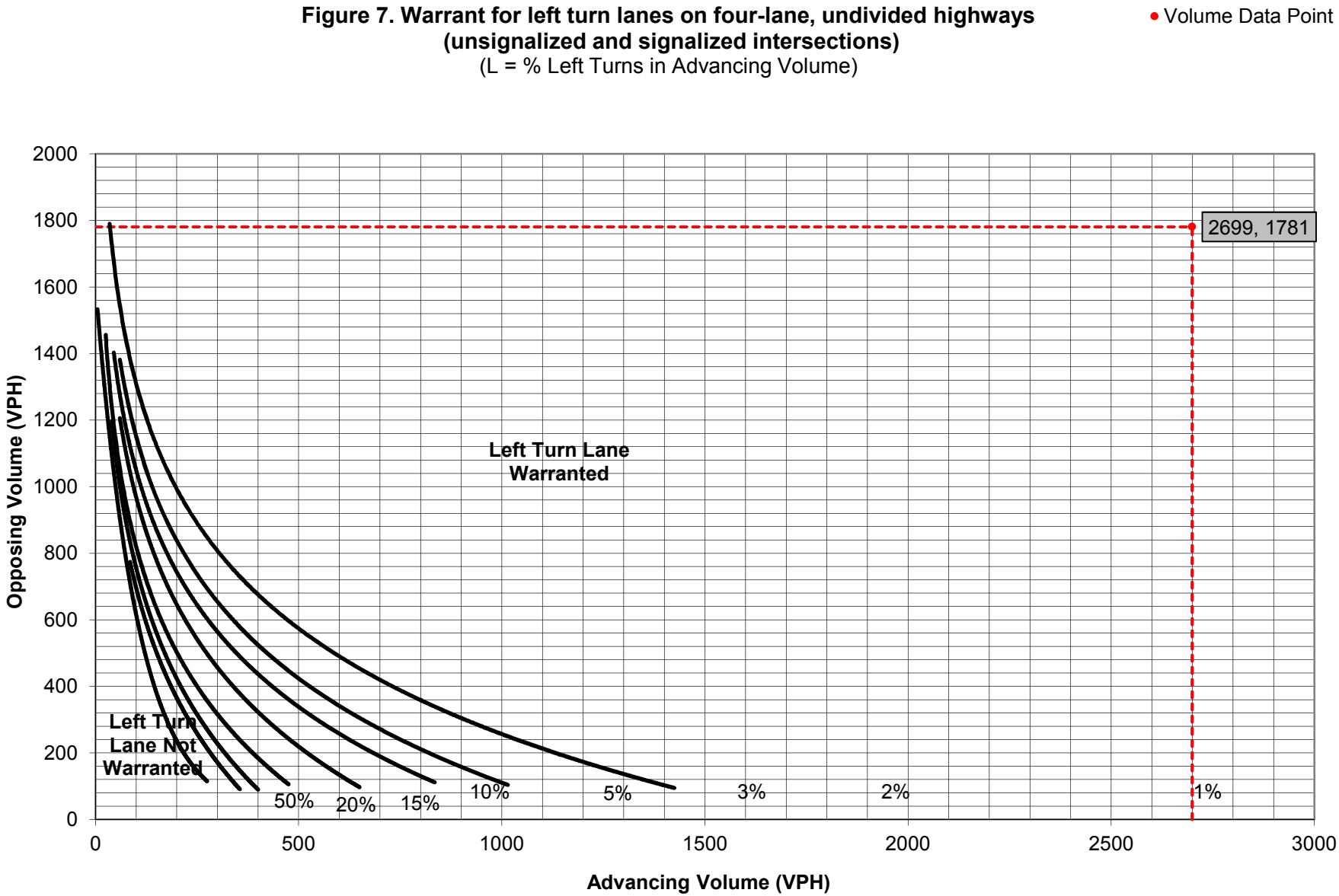
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 172 | 2.0% | N/A |
| | Through | - | 1674 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1614 | 1.0% | N/A |
| | Right | Yes | 179 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1614 | 1.0% | 1623 |
| | Right | - | 179 | 2.0% | 181 |

| | |
|---|---|
| Advancing Volume: | 1804 |
| Right Turn Volume: | 181 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 181 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

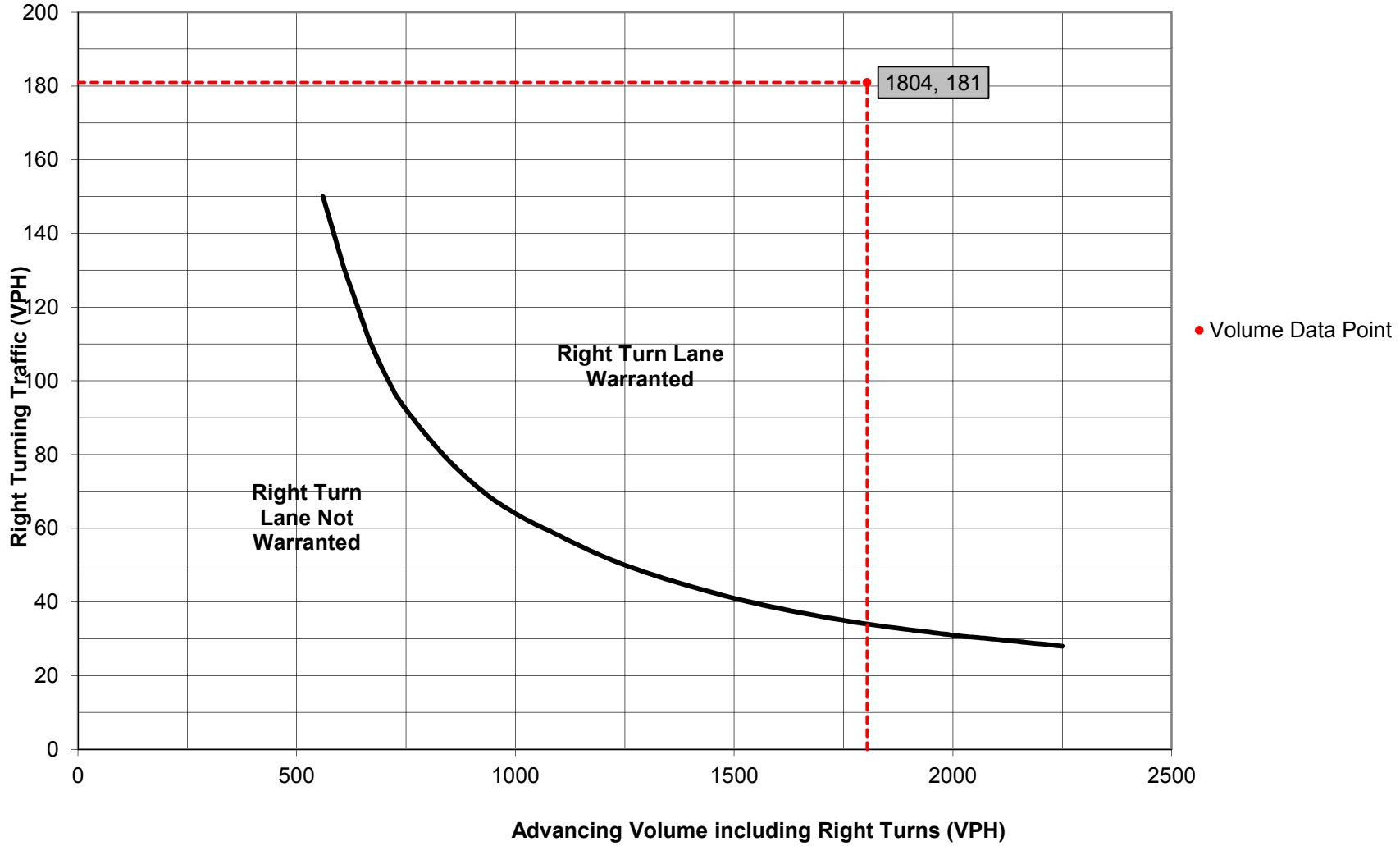
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 211 | Feet |
| Required Right Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 172 | 2.0% | 174 |
| | Through | - | 1674 | 2.0% | 1691 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1614 | 1.0% | 1623 |
| | Right | Yes | 179 | 2.0% | 181 |

| | |
|---|---|
| Advancing Volume: | 1865 |
| Opposing Volume: | 1804 |
| Left Turn Volume: | 174 |
| % Left Turns in Advancing Volume: | 9.33% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1614 | 1.0% | N/A |
| | Right | - | 179 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 174 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

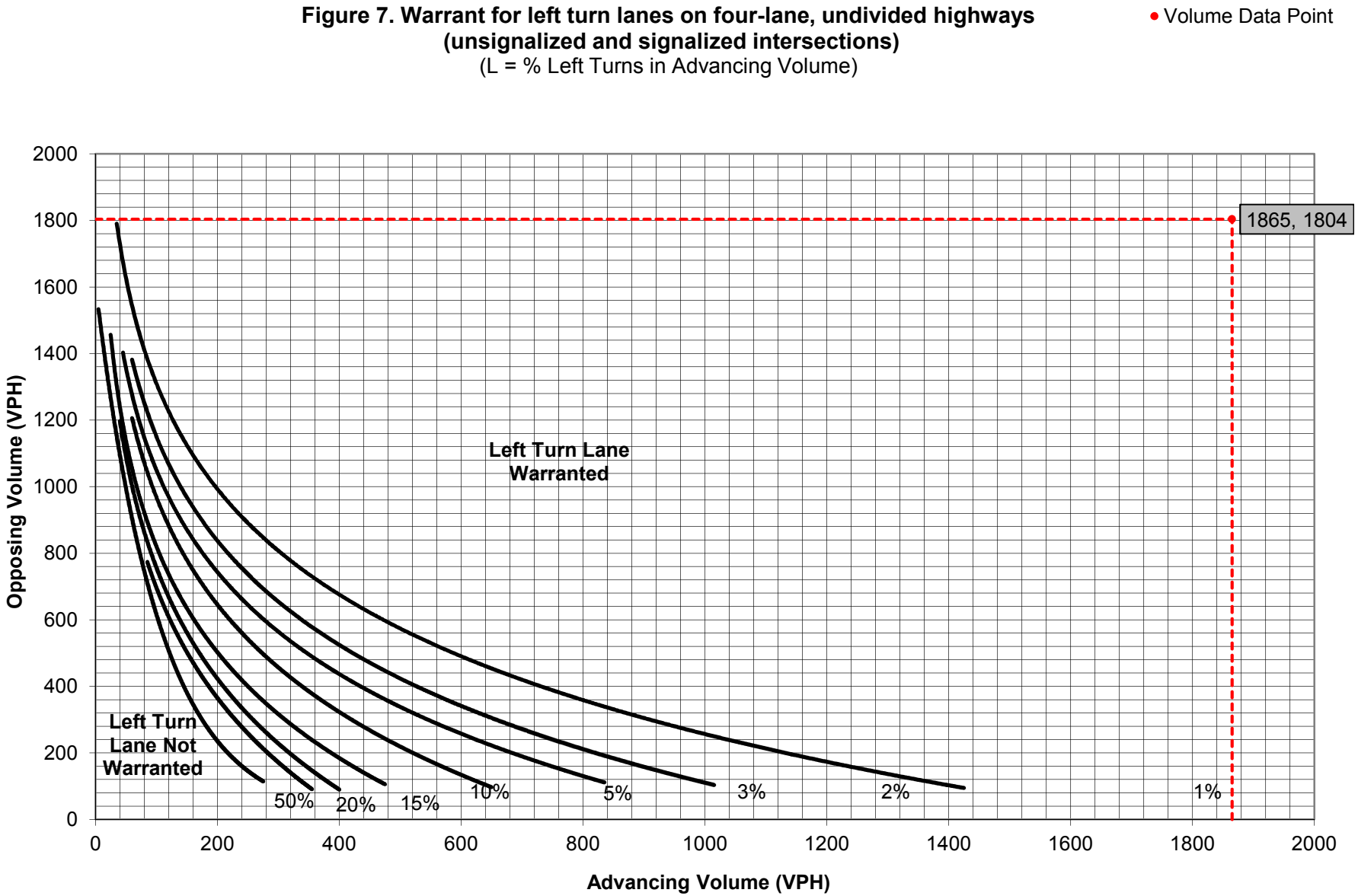
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RIROLI Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 53 | 2.0% | 54 |
| | Through | - | 1361 | 2.0% | 1375 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2324 | 4.0% | 2371 |
| | Right | Yes | 58 | 2.0% | 59 |

| | |
|---|---|
| Advancing Volume: | 1429 |
| Opposing Volume: | 2430 |
| Left Turn Volume: | 54 |
| % Left Turns in Advancing Volume: | 3.78% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2324 | 4.0% | N/A |
| | Right | - | 58 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 54 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)

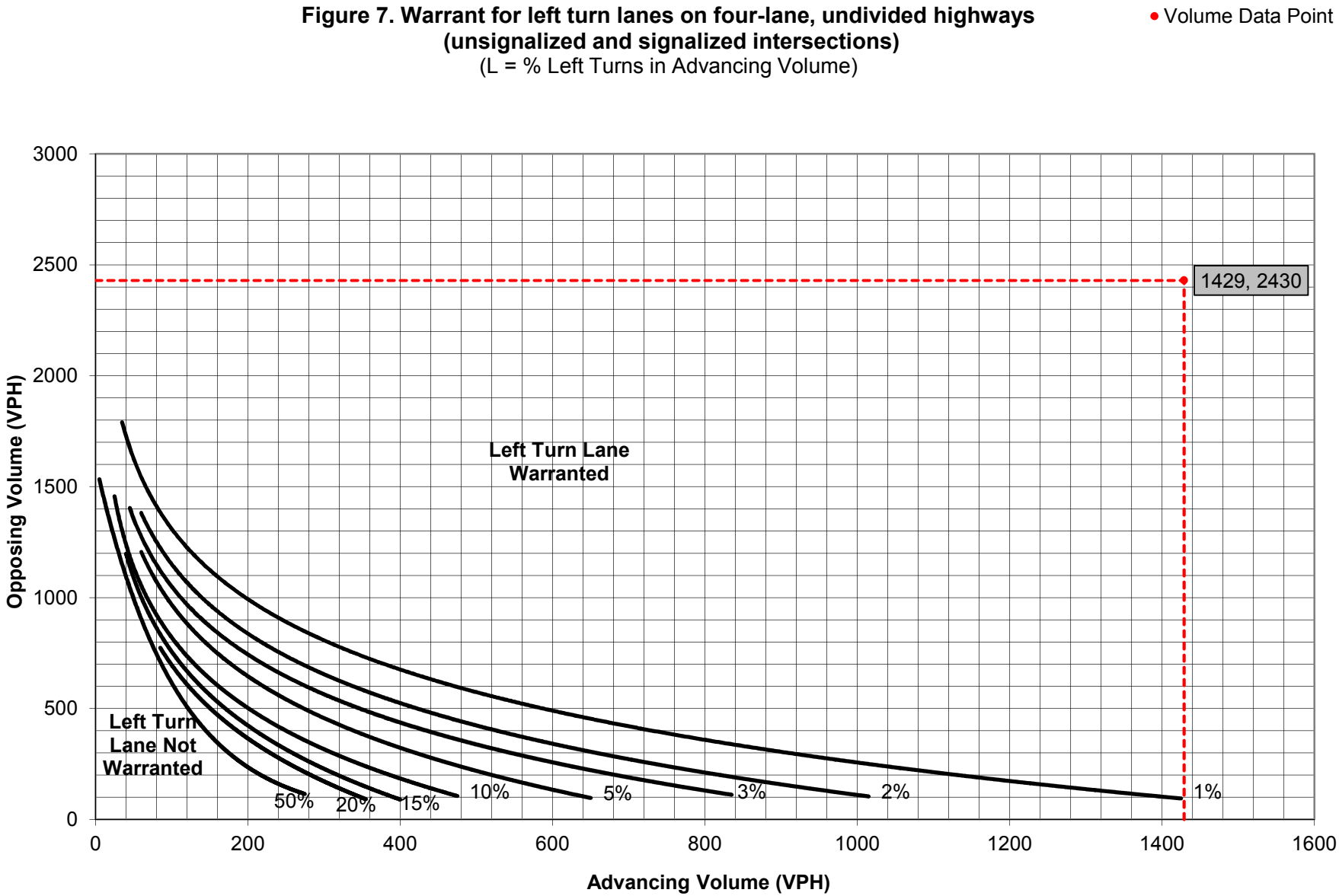
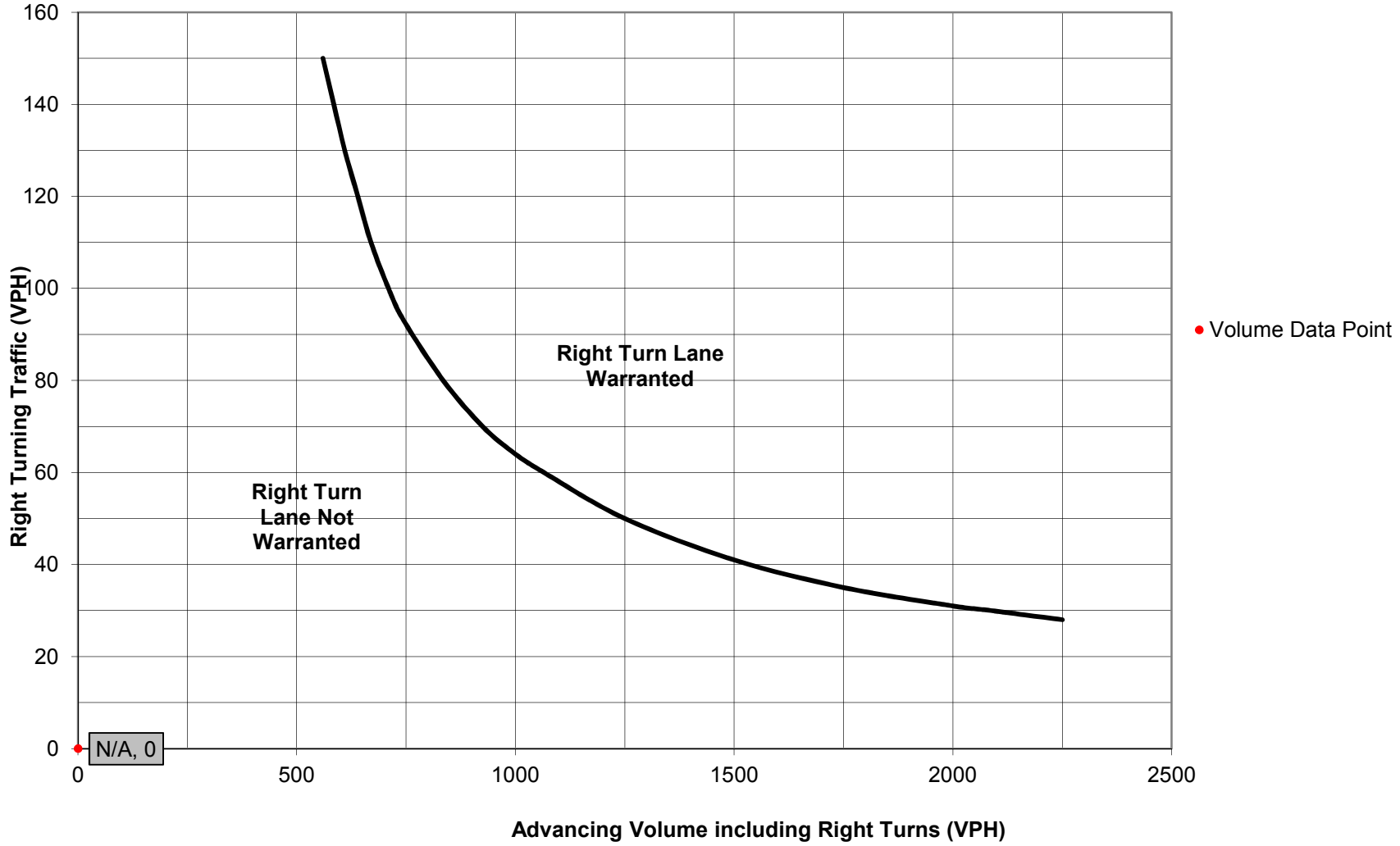


**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



## *SPROUL ROAD & MAIN SITE DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 75 | 2.0% | N/A |
| | Through | - | 1283 | 5.0% | N/A |
| | Right | Yes | 2 | 50.0% | N/A |
| Opposing | Left | Yes | 18 | 6.0% | N/A |
| | Through | - | 2337 | 4.0% | N/A |
| | Right | Yes | 111 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 18 | 6.0% | 19 |
| | Through | - | 2337 | 4.0% | 2384 |
| | Right | - | 111 | 2.0% | 113 |

| | |
|---|---|
| Advancing Volume: | 2516 |
| Right Turn Volume: | 113 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 113 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 4.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

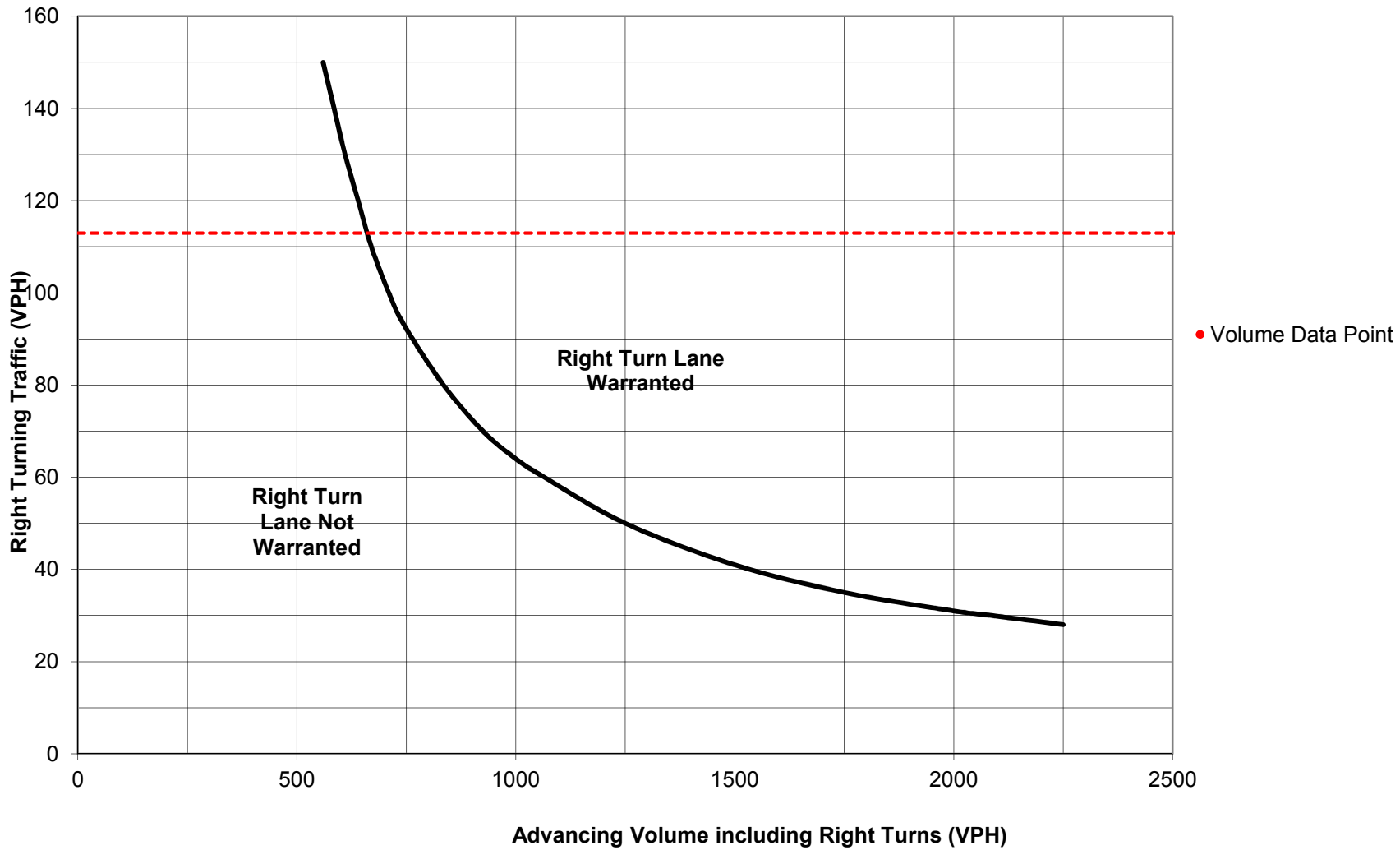
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 236 | Feet |
| Required Right Turn Lane Storage Length: | 250 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 75 | 2.0% | 76 |
| | Through | - | 1283 | 5.0% | 1316 |
| | Right | Yes | 2 | 50.0% | 3 |
| Opposing | Left | Yes | 18 | 6.0% | 19 |
| | Through | - | 2337 | 4.0% | 2384 |
| | Right | Yes | 111 | 2.0% | 113 |

| | |
|---|---|
| Advancing Volume: | 1395 |
| Opposing Volume: | 2516 |
| Left Turn Volume: | 76 |
| % Left Turns in Advancing Volume: | 5.45% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 18 | 6.0% | N/A |
| | Through | - | 2337 | 4.0% | N/A |
| | Right | - | 111 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 76 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

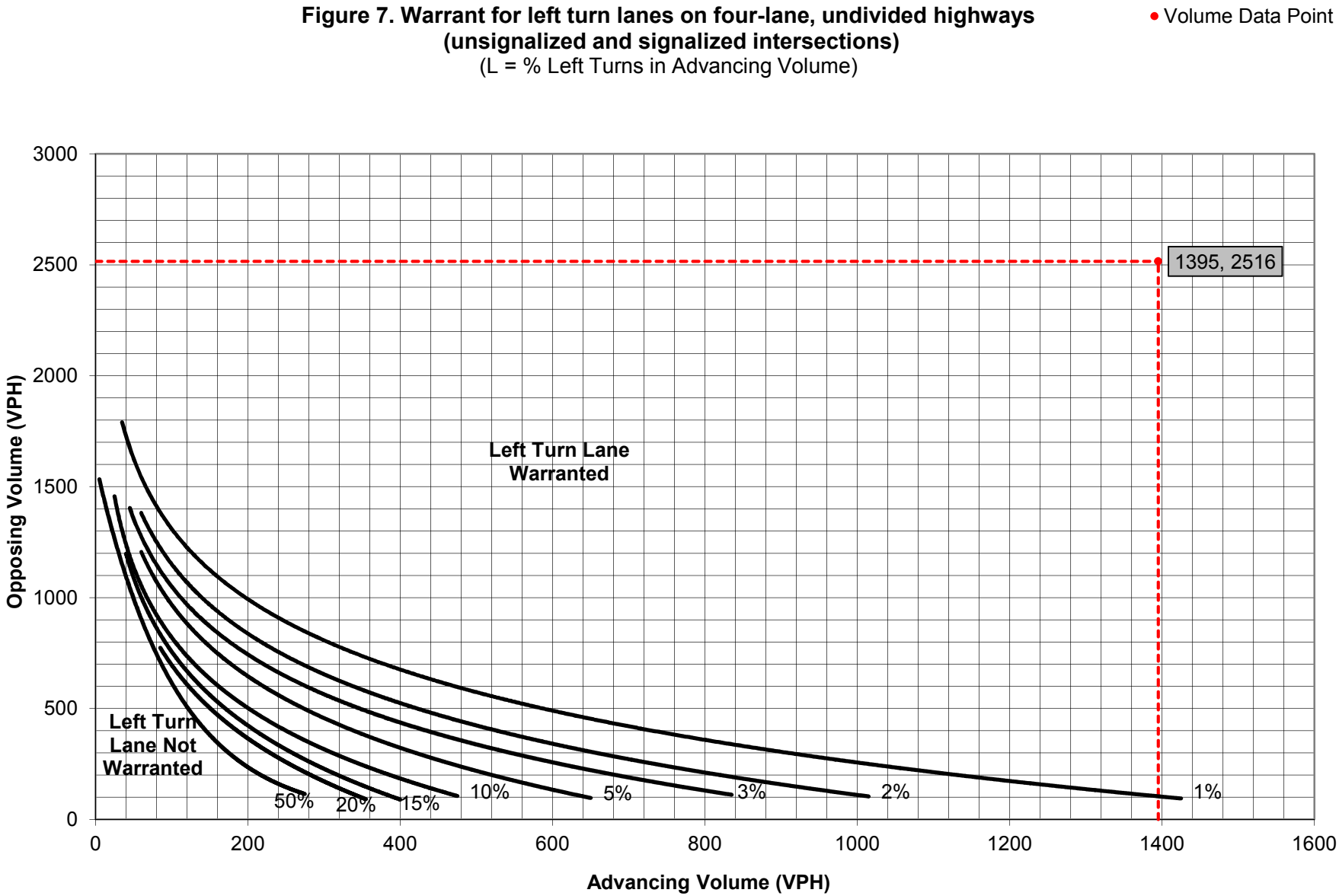
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 211 | Feet |
| Required Left Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 203 | 2.0% | N/A |
| | Through | - | 2333 | 1.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |
| Opposing | Left | Yes | 1 | 0.0% | N/A |
| | Through | - | 1578 | 1.0% | N/A |
| | Right | Yes | 220 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 1 | 0.0% | 1 |
| | Through | - | 1578 | 1.0% | 1586 |
| | Right | - | 220 | 2.0% | 223 |

| | |
|---|---|
| Advancing Volume: | 1810 |
| Right Turn Volume: | 223 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 223 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 7.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

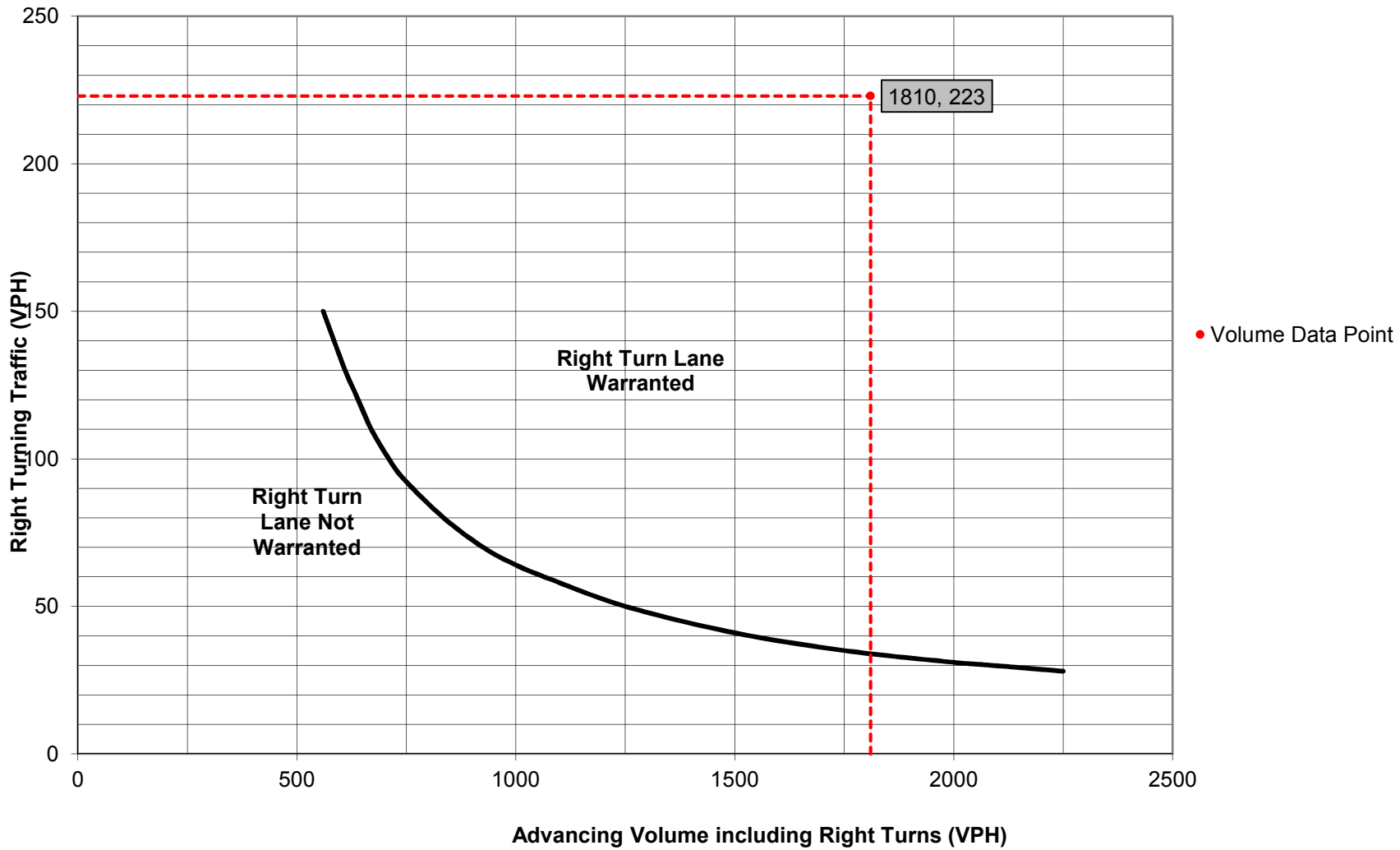
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 336 | Feet |
| Required Right Turn Lane Storage Length: | 350 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 203 | 2.0% | 206 |
| | Through | - | 2333 | 1.0% | 2345 |
| | Right | Yes | 0 | 0.0% | 0 |
| Opposing | Left | Yes | 1 | 0.0% | 1 |
| | Through | - | 1578 | 1.0% | 1586 |
| | Right | Yes | 220 | 2.0% | 223 |

| | |
|---|---|
| Advancing Volume: | 2551 |
| Opposing Volume: | 1810 |
| Left Turn Volume: | 206 |
| % Left Turns in Advancing Volume: | 8.08% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 1 | 0.0% | N/A |
| | Through | - | 1578 | 1.0% | N/A |
| | Right | - | 220 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 206 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 7.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

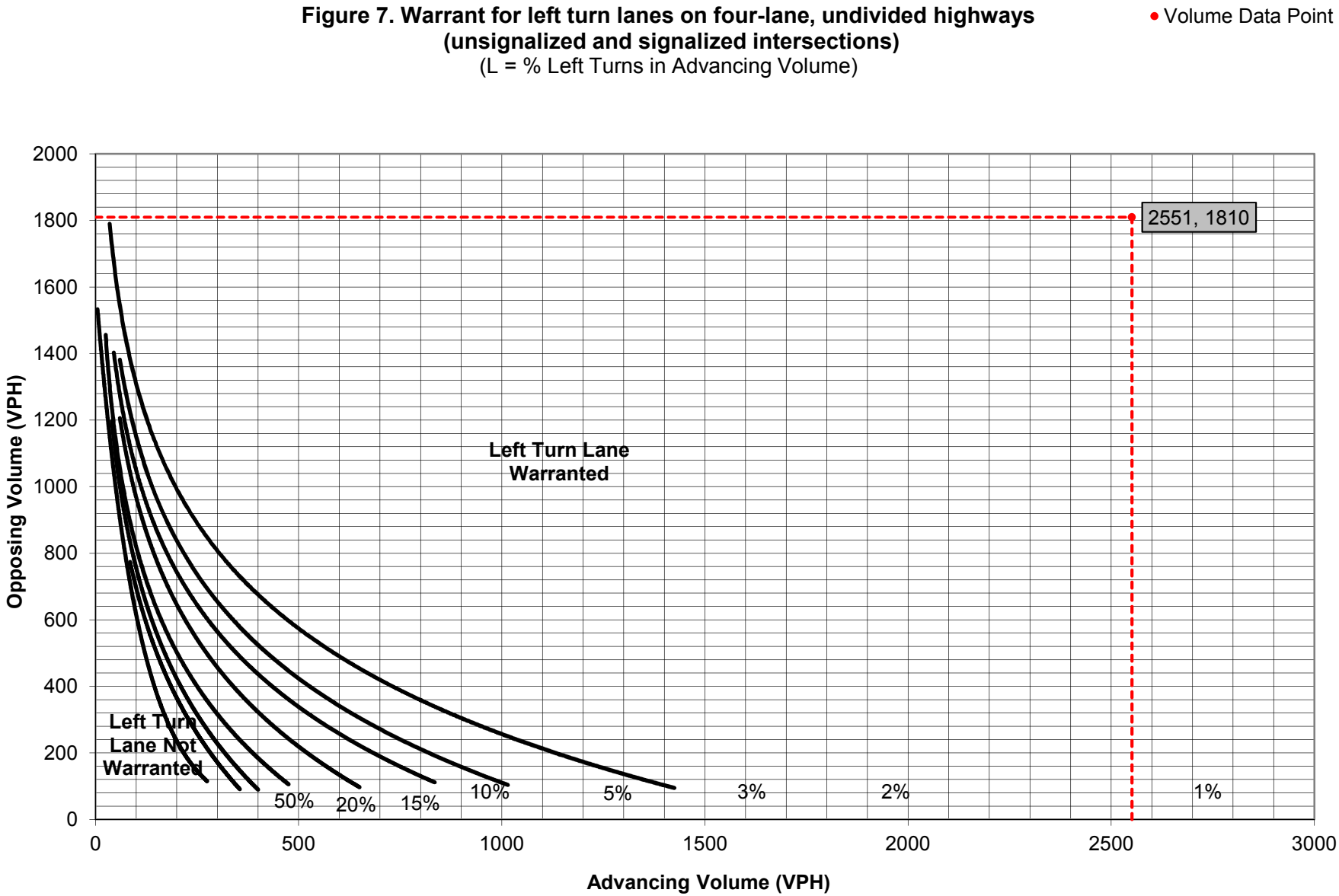
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 336 | Feet |
| Required Left Turn Lane Storage Length: | 350 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 260 | 2.0% | N/A |
| | Through | - | 1413 | 1.0% | N/A |
| | Right | No | 1 | 0.0% | N/A |
| Opposing | Left | No | 30 | 0.0% | N/A |
| | Through | - | 1546 | 1.0% | N/A |
| | Right | Yes | 344 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 30 | 0.0% | N/A |
| | Through | - | 1546 | 1.0% | 1554 |
| | Right | - | 344 | 2.0% | 348 |

| | |
|---|---|
| Advancing Volume: | 1902 |
| Right Turn Volume: | 348 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 348 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 12.0

PennDOT Publication 46, Exhibit 11-6

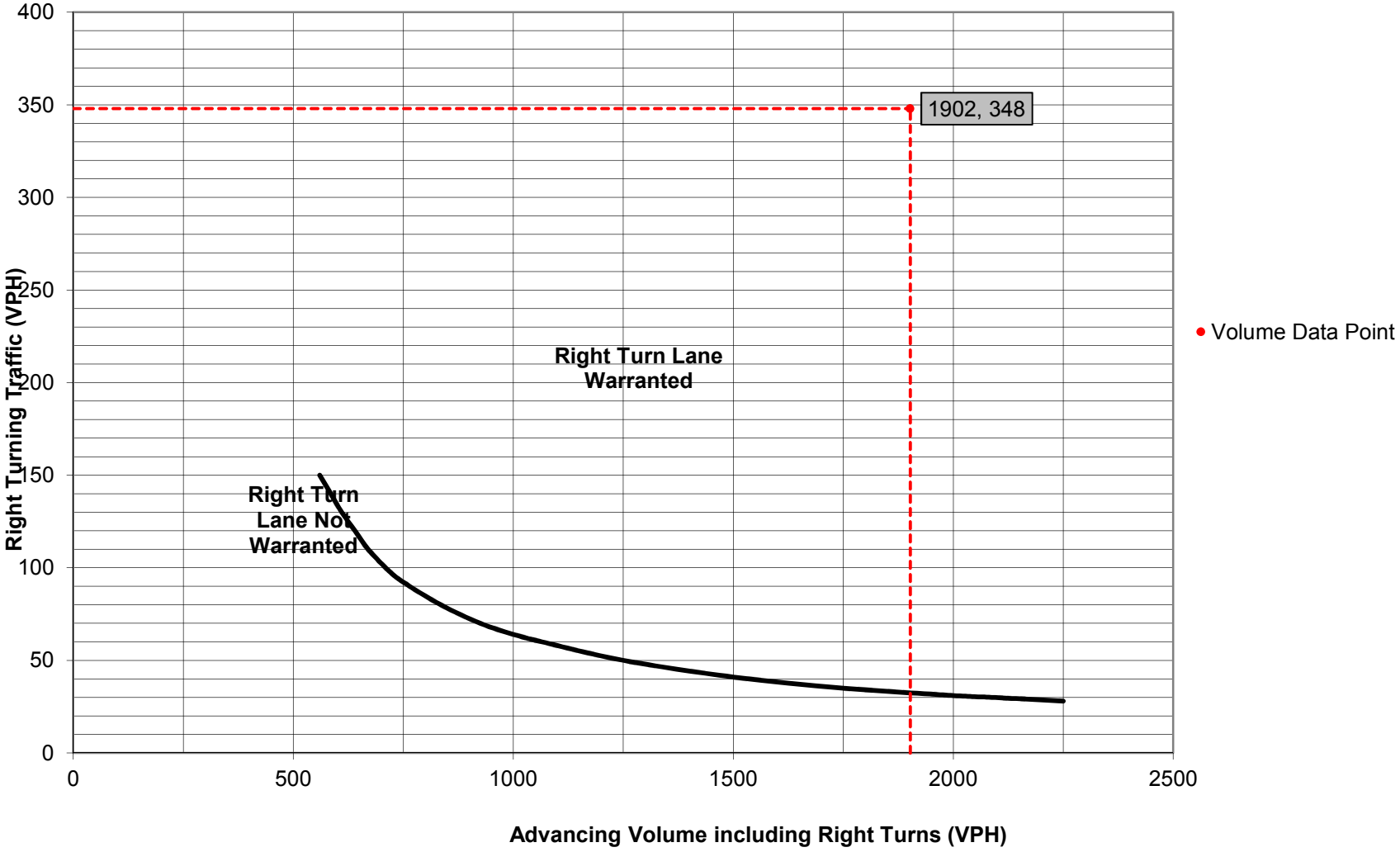
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | **N/A** | Feet |
| Condition B: | **75** | Feet |
| Condition C: | **511** | Feet |
| Required Right Turn Lane Storage Length: | **525** | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Main Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 260 | 2.0% | 263 |
| | Through | - | 1413 | 1.0% | 1421 |
| | Right | No | 1 | 0.0% | N/A |
| Opposing | Left | No | 30 | 0.0% | N/A |
| | Through | - | 1546 | 1.0% | 1554 |
| | Right | Yes | 344 | 2.0% | 348 |

| | |
|---|---|
| Advancing Volume: | 1684 |
| Opposing Volume: | 1902 |
| Left Turn Volume: | 263 |
| % Left Turns in Advancing Volume: | 15.62% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 30 | 0.0% | N/A |
| | Through | - | 1546 | 1.0% | N/A |
| | Right | - | 344 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 263 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 9.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

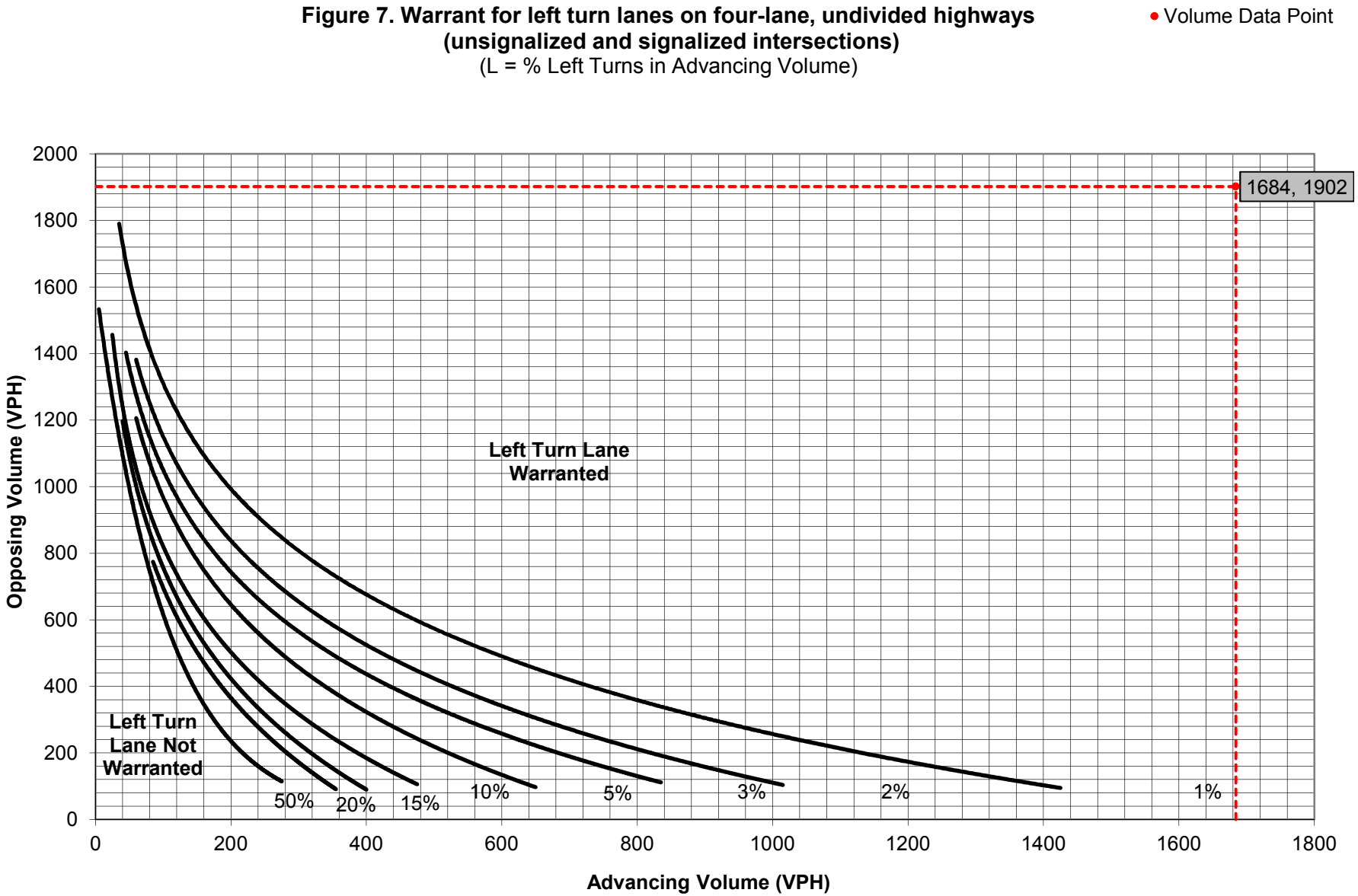
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 411 | Feet |
| Required Left Turn Lane Storage Length: | 425 | Feet |

Additional Findings:

Consider Dual Left Turn Lanes and Operational Analyses

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# *SPROUL ROAD & RI DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RI Driveway - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2487 | 4.0% | 2537 |
| | Right | - | 58 | 2.0% | 59 |

| | |
|---|---|
| Advancing Volume: | 2596 |
| Right Turn Volume: | 59 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 59 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

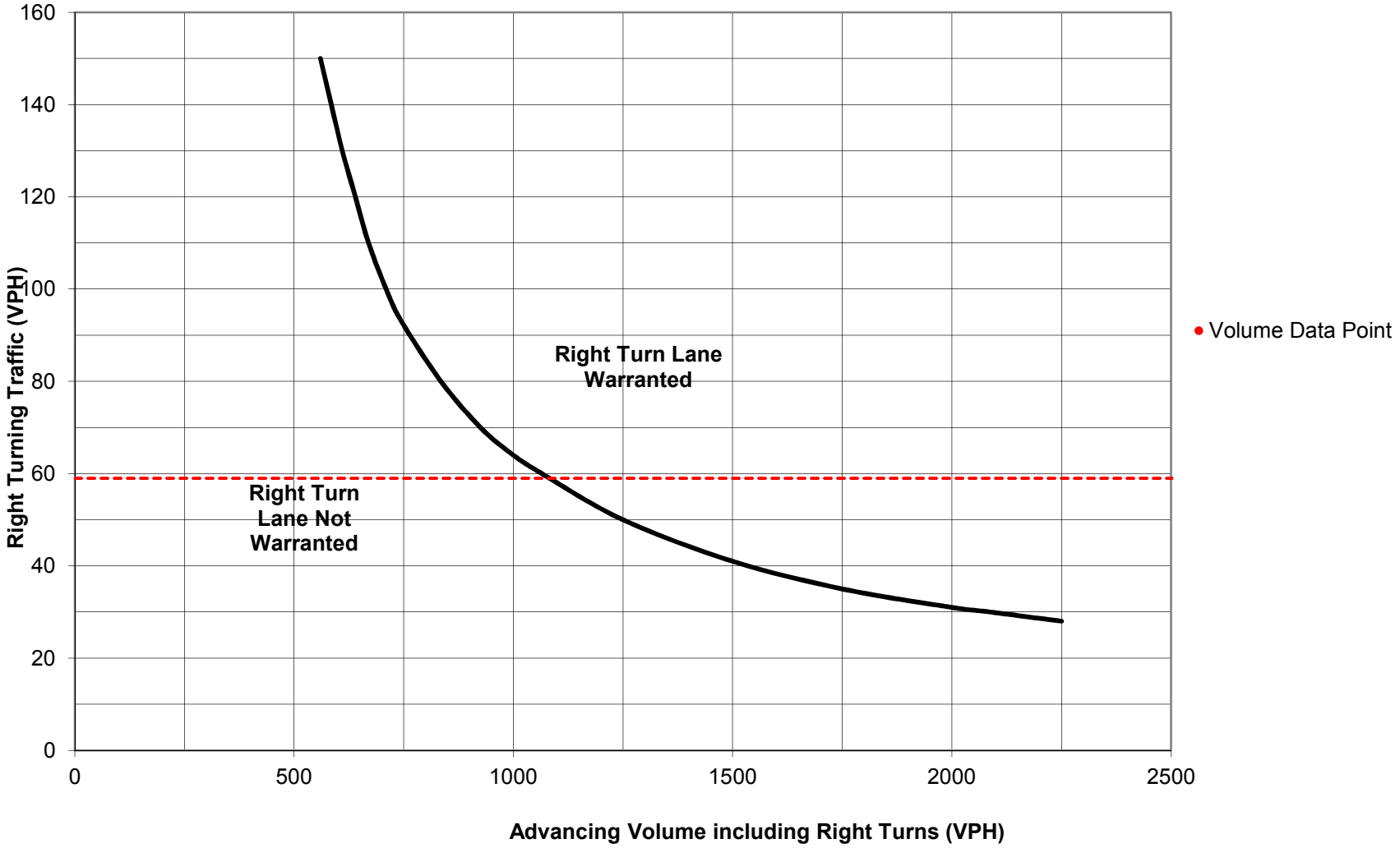
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 136 | Feet |
| Required Right Turn Lane Storage Length: | 150 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RI Driveway - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1783 | 1.0% | 1792 |
| | Right | - | 109 | 2.0% | 111 |

| | |
|---|---|
| Advancing Volume: | 1903 |
| Right Turn Volume: | 111 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 111 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

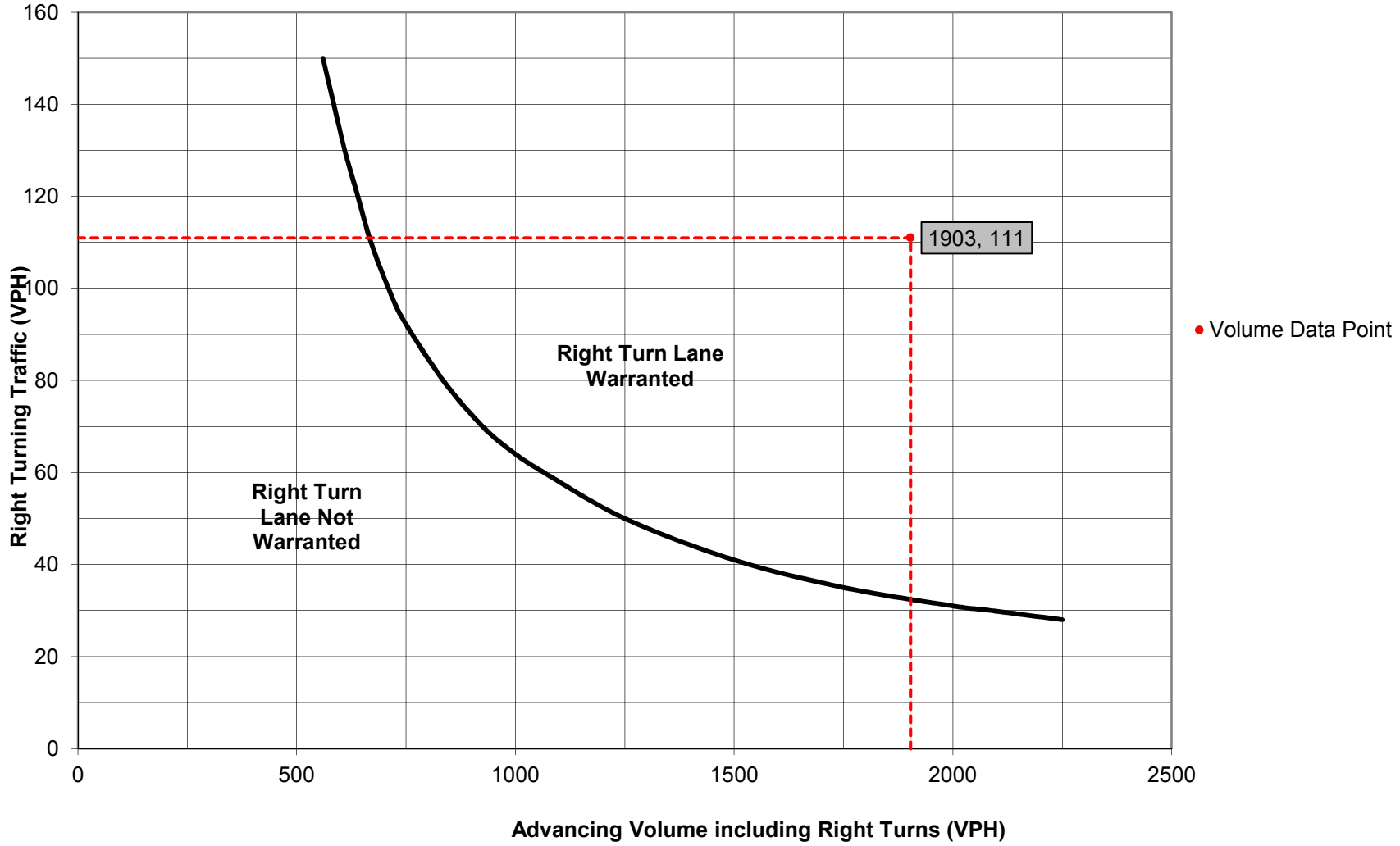
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 161 | Feet |
| Required Right Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed RI Driveway - NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1917 | 1.0% | 1927 |
| | Right | - | 168 | 2.0% | 170 |

| | |
|---|---|
| Advancing Volume: | 2097 |
| Right Turn Volume: | 170 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 170 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

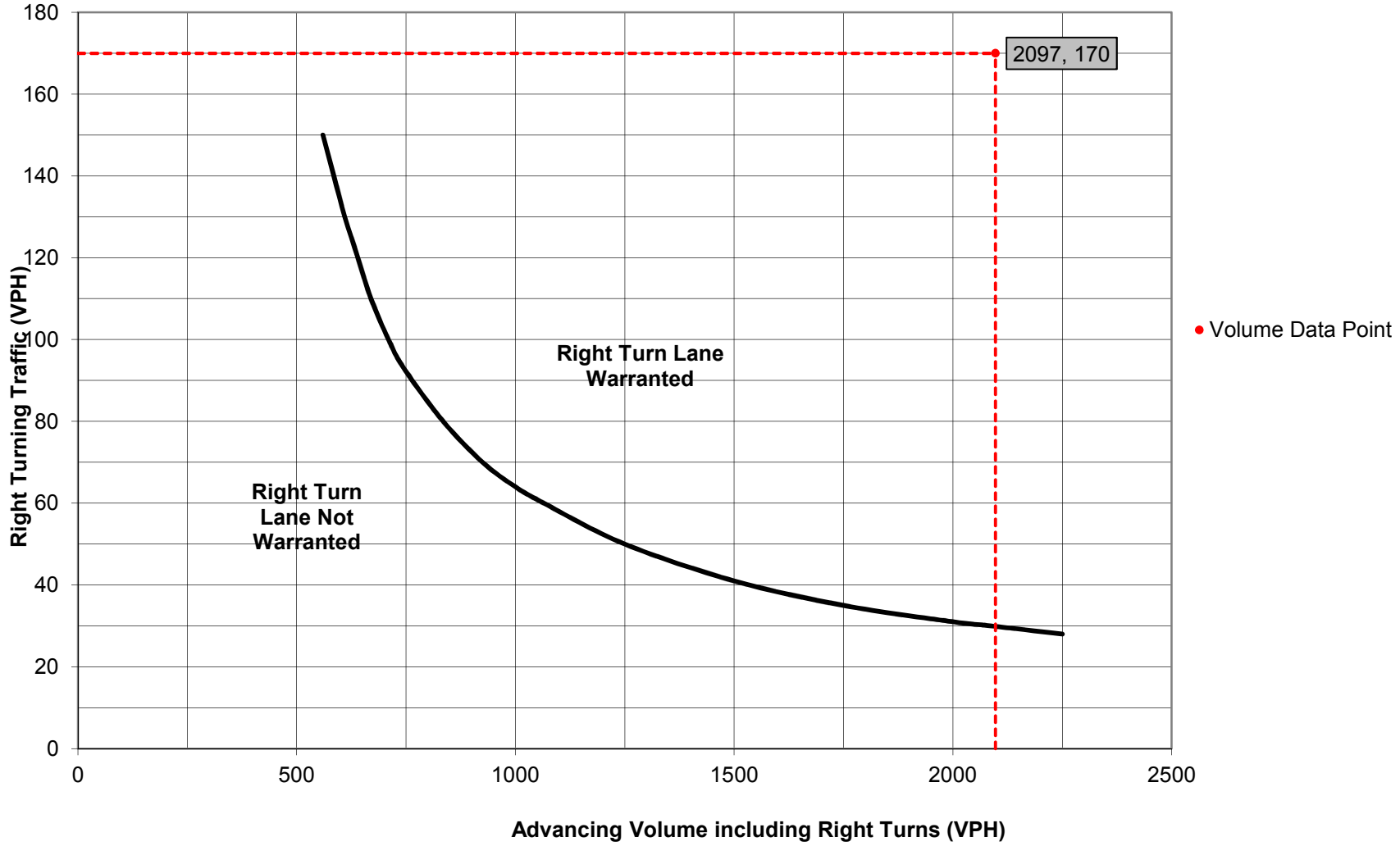
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | 211 | Feet |
| Required Right Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



## *SPROUL ROAD & SOUTHERN SITE DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 128 | 2.0% | N/A |
| | Through | - | 1857 | 1.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |
| Opposing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 2091 | 1.0% | N/A |
| | Right | Yes | 122 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 2091 | 1.0% | 2102 |
| | Right | - | 122 | 2.0% | 124 |

| | |
|---|---|
| Advancing Volume: | 2226 |
| Right Turn Volume: | 124 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 124 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 4.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

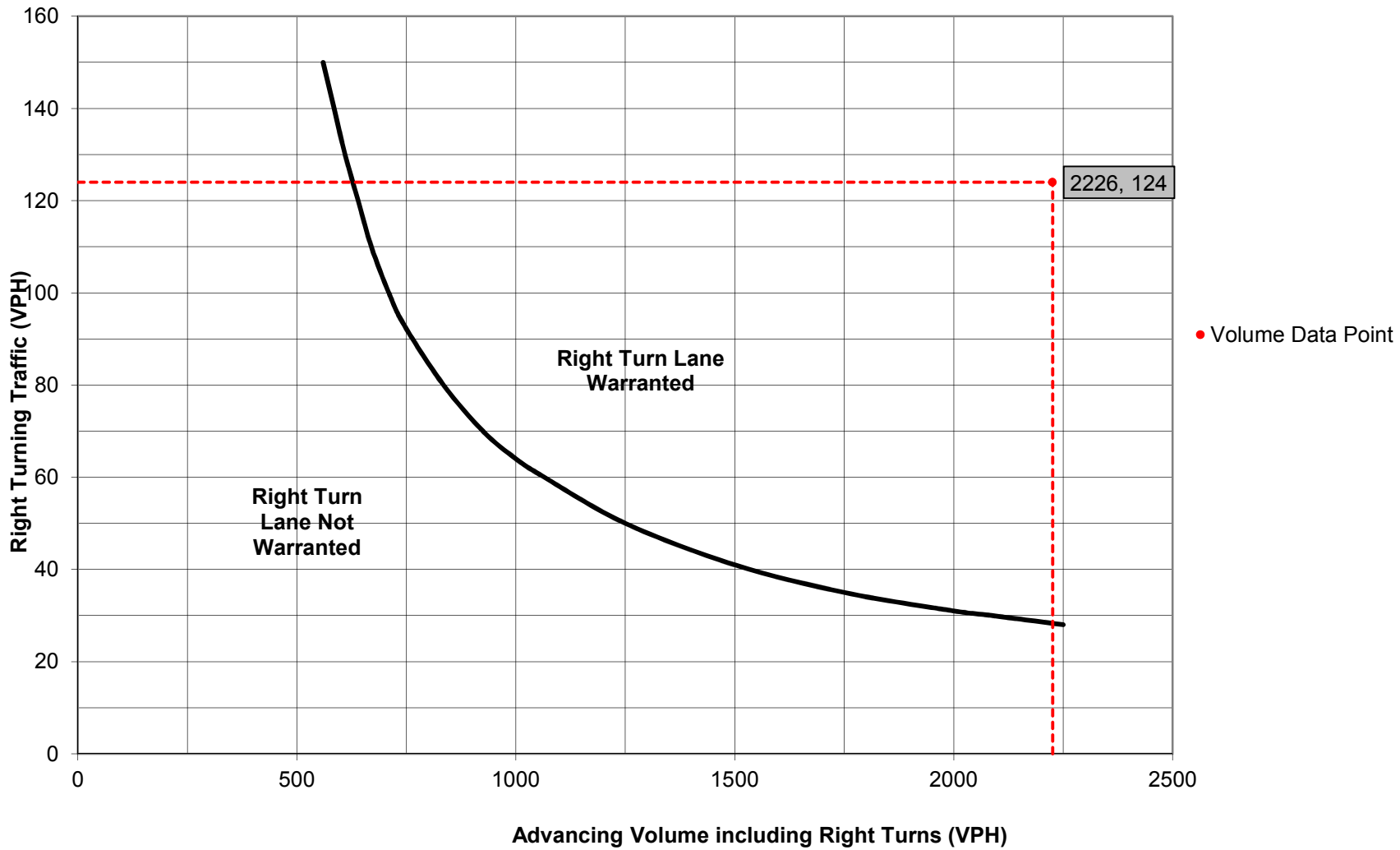
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 236 | Feet |
| Required Right Turn Lane Storage Length: | 250 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 128 | 2.0% | 130 |
| | Through | - | 1857 | 1.0% | 1867 |
| | Right | Yes | 0 | 0.0% | 0 |
| Opposing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 2091 | 1.0% | 2102 |
| | Right | Yes | 122 | 2.0% | 124 |

| | |
|---|---|
| Advancing Volume: | 1997 |
| Opposing Volume: | 2226 |
| Left Turn Volume: | 130 |
| % Left Turns in Advancing Volume: | 6.51% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 2091 | 1.0% | N/A |
| | Right | - | 122 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 130 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 4.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

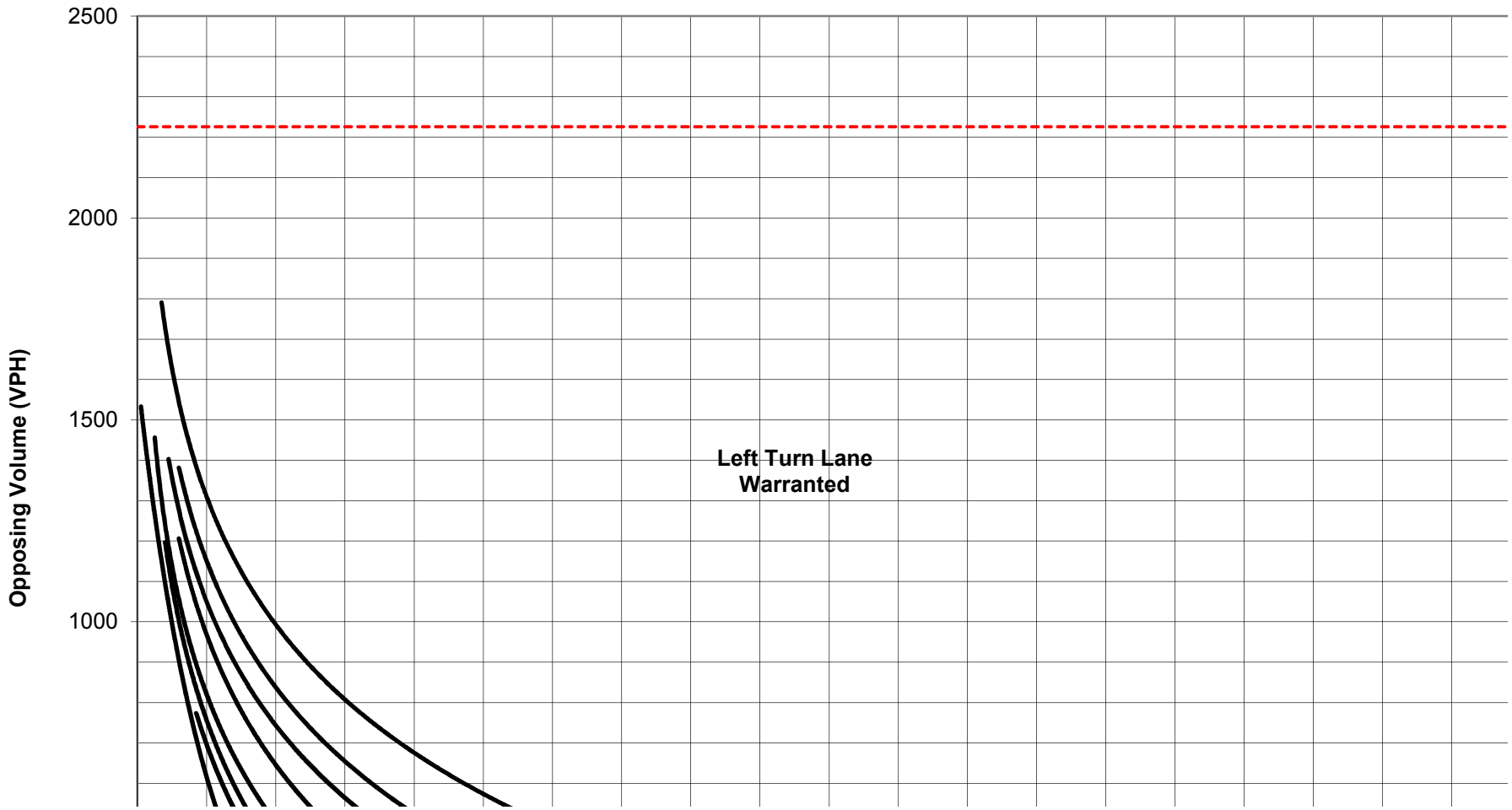
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 236 | Feet |
| Required Left Turn Lane Storage Length: | 250 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 51 | 2.0% | N/A |
| | Through | - | 1488 | 6.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |
| Opposing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 2378 | 4.0% | N/A |
| | Right | Yes | 51 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 2378 | 4.0% | 2426 |
| | Right | - | 51 | 2.0% | 52 |

| | |
|---|---|
| Advancing Volume: | 2478 |
| Right Turn Volume: | 52 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 52 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

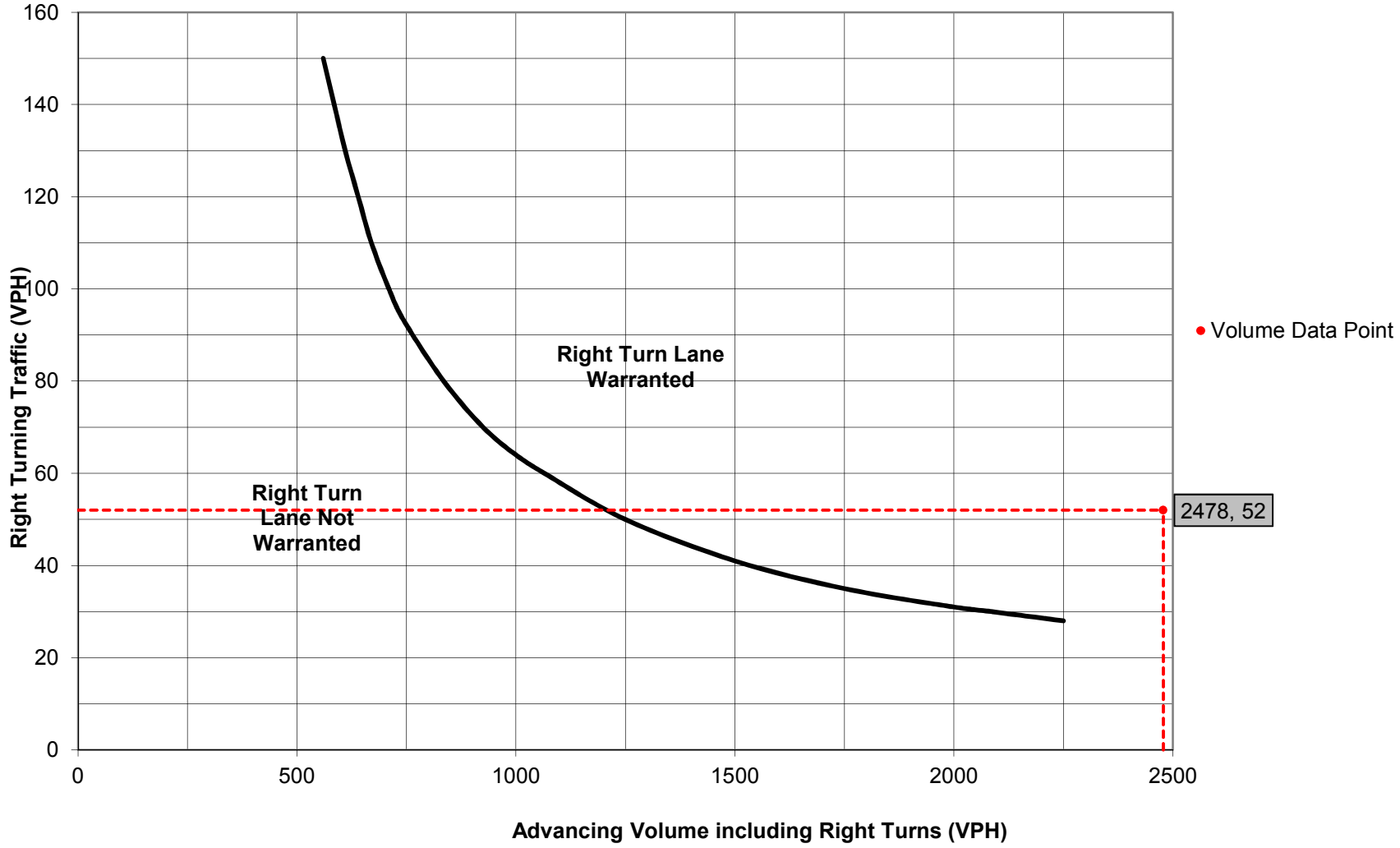
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Right Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 51 | 2.0% | 52 |
| | Through | - | 1488 | 6.0% | 1533 |
| | Right | Yes | 0 | 0.0% | 0 |
| Opposing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 2378 | 4.0% | 2426 |
| | Right | Yes | 51 | 2.0% | 52 |

| | |
|---|---|
| Advancing Volume: | 1585 |
| Opposing Volume: | 2478 |
| Left Turn Volume: | 52 |
| % Left Turns in Advancing Volume: | 3.28% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 2378 | 4.0% | N/A |
| | Right | - | 51 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 52 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 2.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

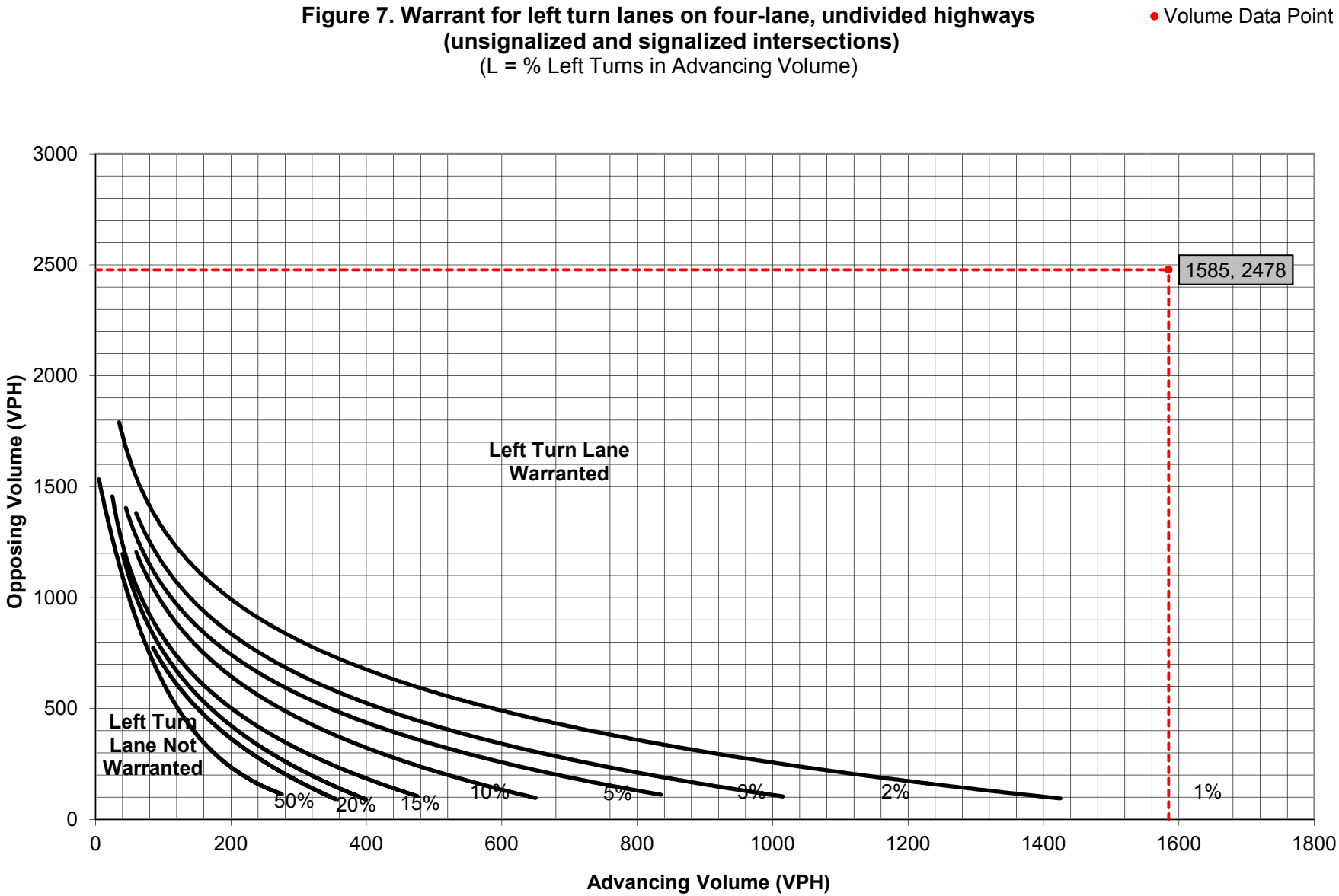
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 161 | Feet |
| Required Left Turn Lane Storage Length: | 175 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 90 | 2.0% | N/A |
| | Through | - | 2608 | 1.0% | N/A |
| | Right | Yes | 0 | 0.0% | N/A |
| Opposing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 1836 | 1.0% | N/A |
| | Right | Yes | 93 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 1836 | 1.0% | 1846 |
| | Right | - | 93 | 2.0% | 94 |

| | |
|---|---|
| Advancing Volume: | 1940 |
| Right Turn Volume: | 94 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 94 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

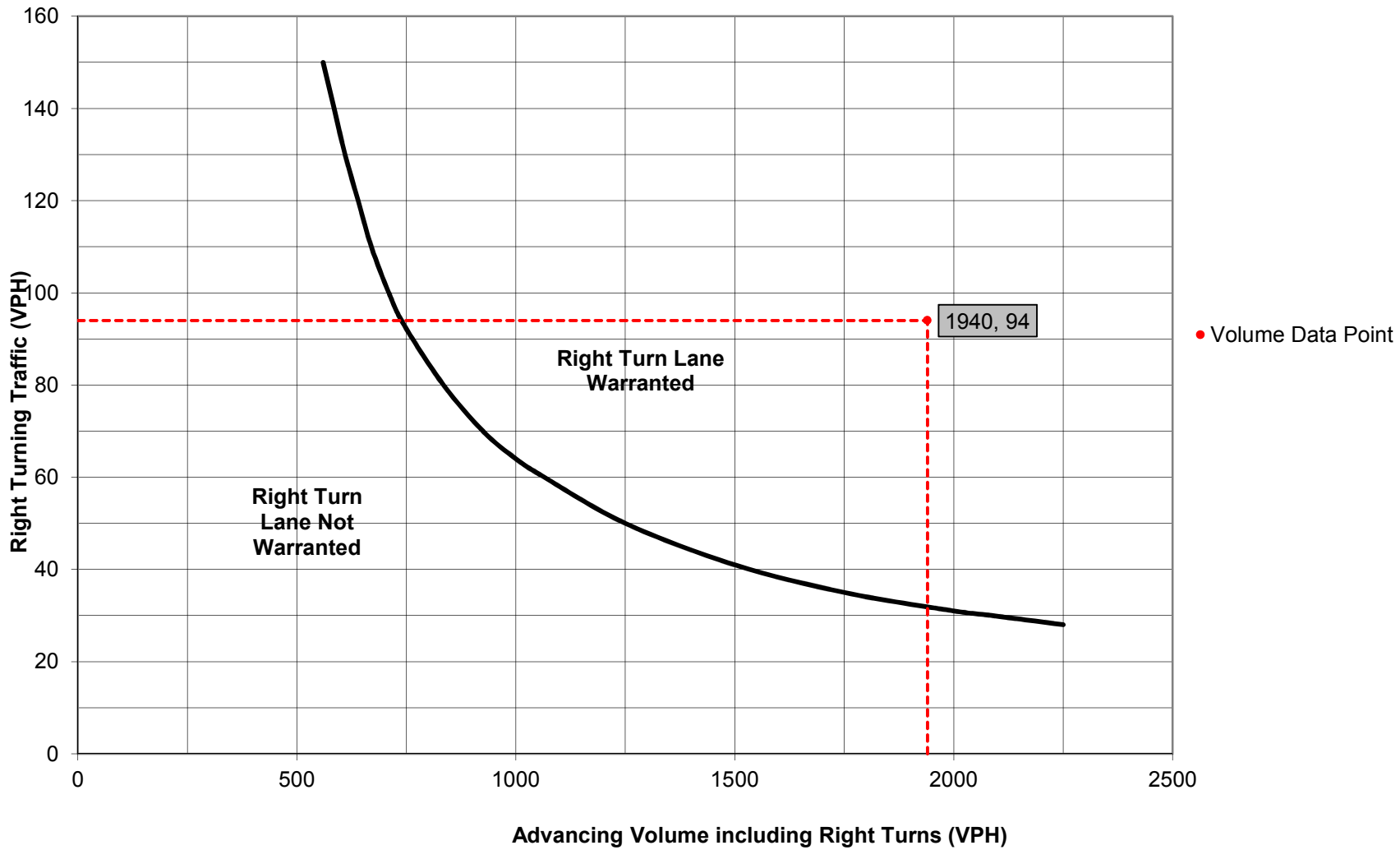
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 211 | Feet |
| Required Right Turn Lane Storage Length: | 225 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Proposed Southern Driveway - SBL/NBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 90 | 2.0% | 91 |
| | Through | - | 2608 | 1.0% | 2622 |
| | Right | Yes | 0 | 0.0% | 0 |
| Opposing | Left | Yes | 0 | 0.0% | 0 |
| | Through | - | 1836 | 1.0% | 1846 |
| | Right | Yes | 93 | 2.0% | 94 |

| | |
|---|---|
| Advancing Volume: | 2713 |
| Opposing Volume: | 1940 |
| Left Turn Volume: | 91 |
| % Left Turns in Advancing Volume: | 3.35% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 0 | 0.0% | N/A |
| | Through | - | 1836 | 1.0% | N/A |
| | Right | - | 93 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 91 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 30 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

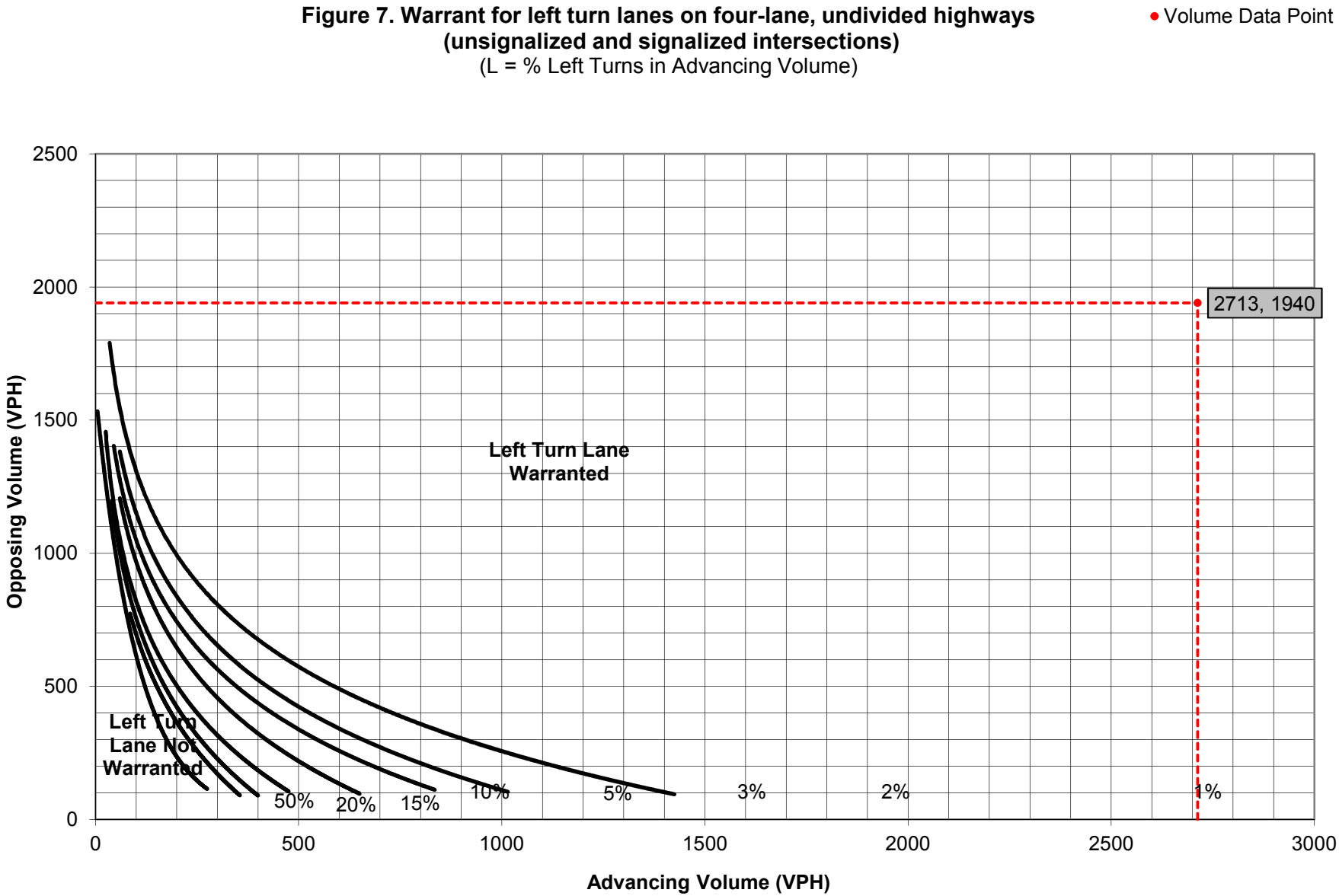
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 211 | Feet |
| Required Left Turn Lane Storage Length: | 225 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



## *SPROUL ROAD & HS DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & HS Driveway - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 52 | 6.0% | 54 |
| | Through | - | 1342 | 2.0% | 1356 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2494 | 1.0% | 2507 |
| | Right | Yes | 57 | 0.0% | 57 |

| | |
|---|---|
| Advancing Volume: | 1410 |
| Opposing Volume: | 2564 |
| Left Turn Volume: | 54 |
| % Left Turns in Advancing Volume: | 3.83% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 54 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

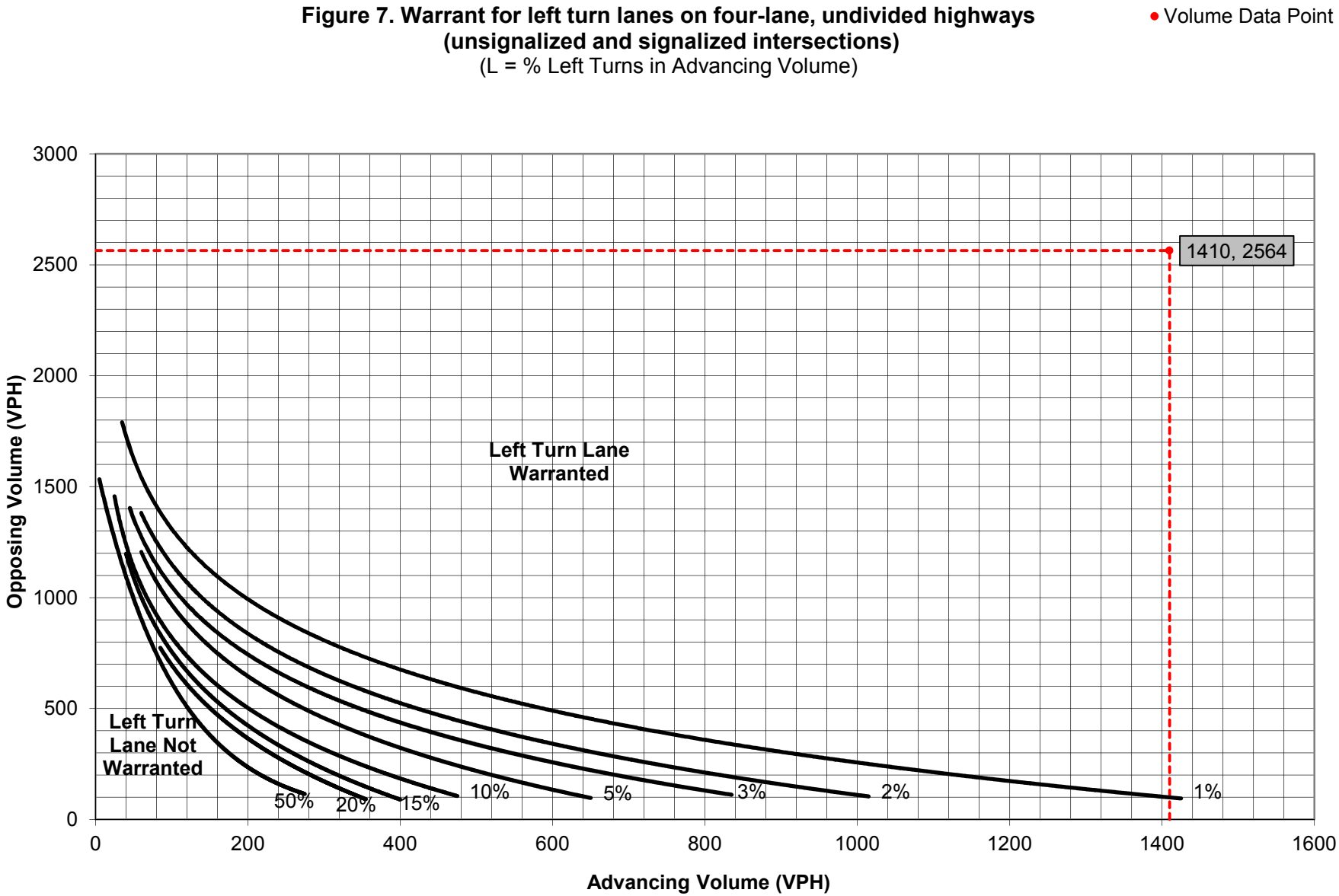
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & HS Driveway - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 56 | 0.0% | 56 |
| | Through | - | 2932 | 1.0% | 2947 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 1861 | 1.0% | 1871 |
| | Right | Yes | 3 | 0.0% | 3 |

| | |
|---|---|
| Advancing Volume: | 3003 |
| Opposing Volume: | 1874 |
| Left Turn Volume: | 56 |
| % Left Turns in Advancing Volume: | 1.86% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 56 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

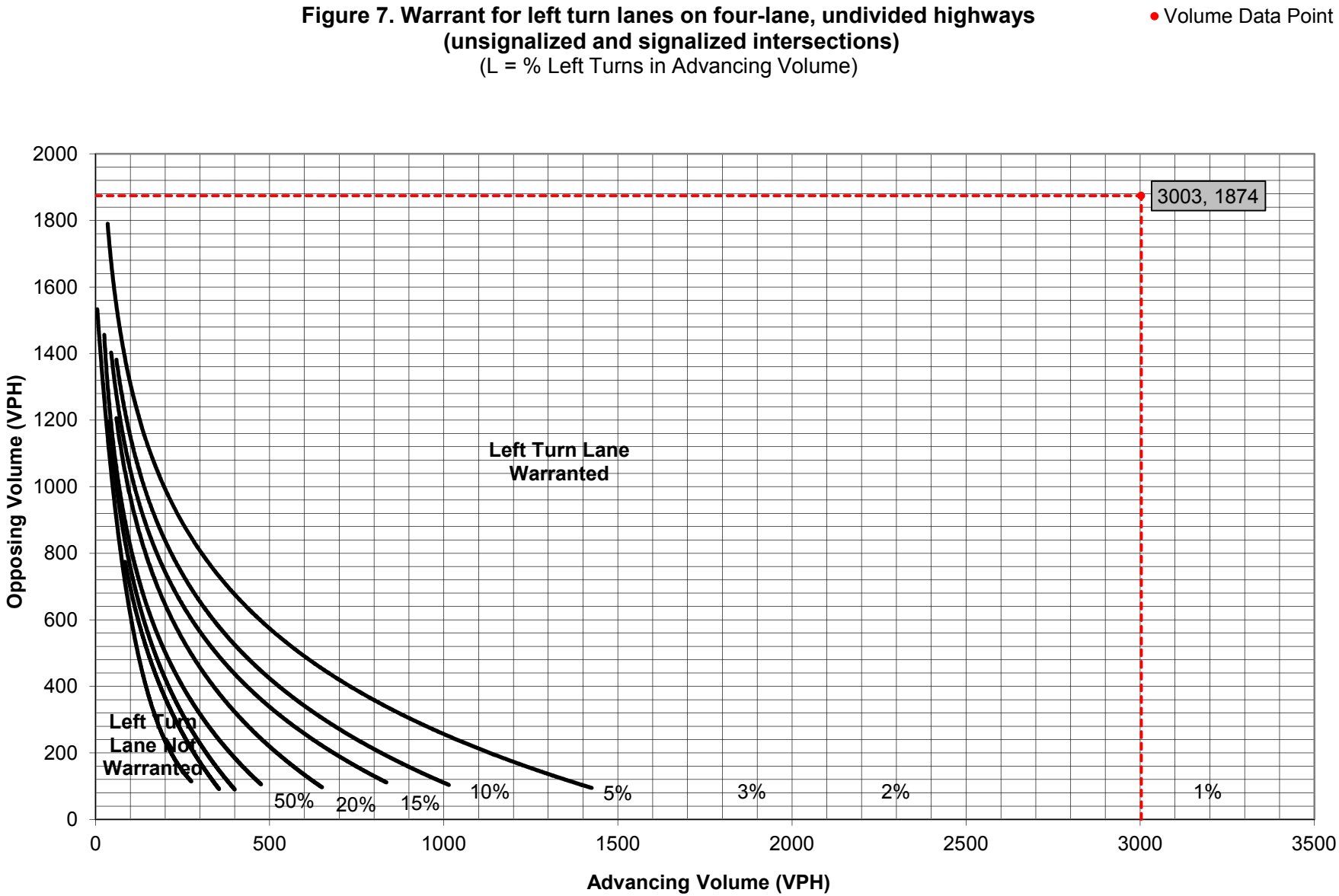
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & HS Driveway - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 19 | 0.0% | 19 |
| | Through | - | 2164 | 1.0% | 2175 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 2224 | 1.0% | 2236 |
| | Right | Yes | 5 | 0.0% | 5 |

| | |
|---|---|
| Advancing Volume: | 2194 |
| Opposing Volume: | 2241 |
| Left Turn Volume: | 19 |
| % Left Turns in Advancing Volume: | 0.87% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 19 |
| Cycles Per Hour (Assumed): | 60 |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

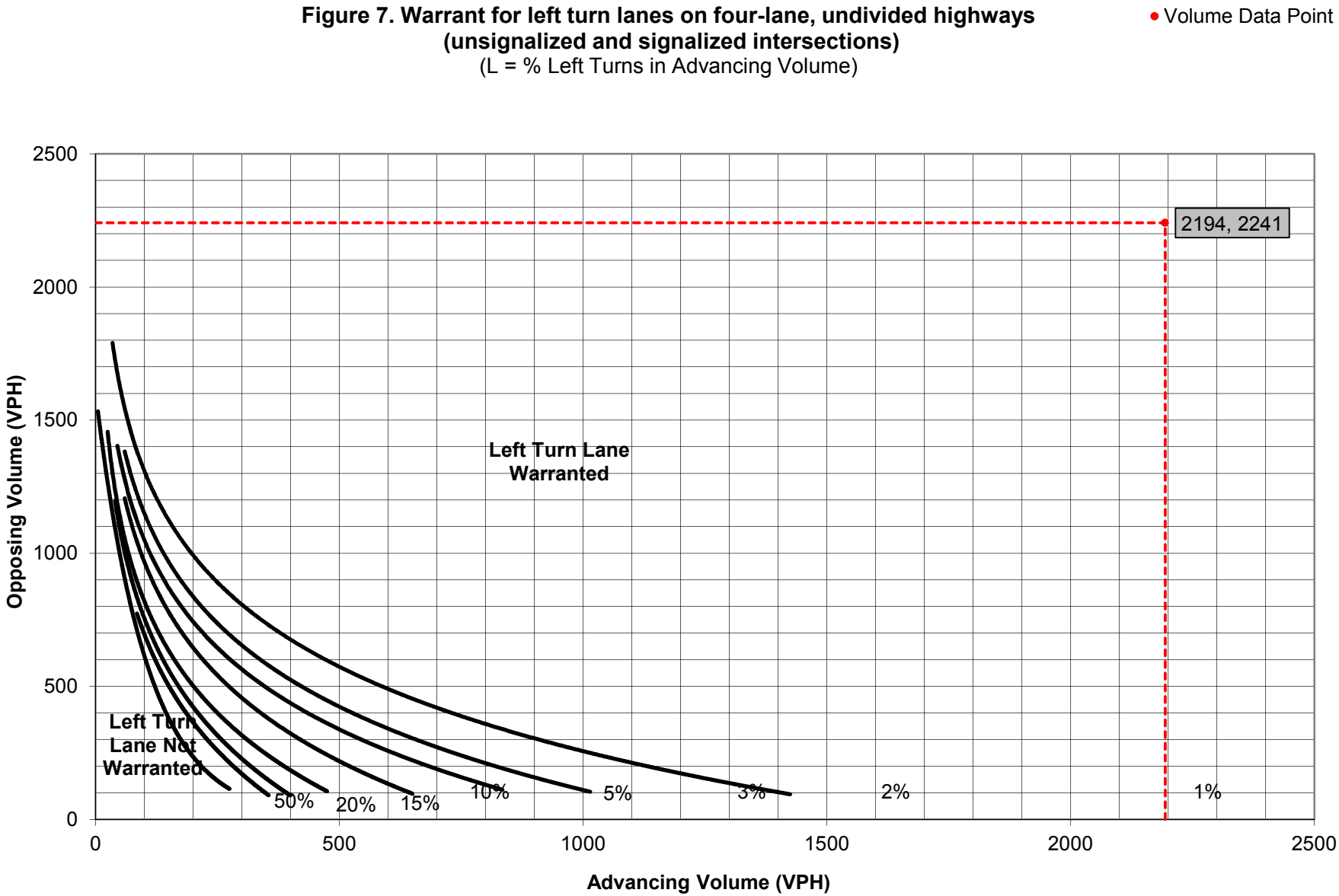
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



## *SPROUL ROAD & OLD MARPLE ROAD*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - EBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 138 | 5.0% | 142 |
| | Through | - | 76 | 6.0% | 79 |
| | Right | - | 39 | 3.0% | 40 |

| | |
|---|---|
| Advancing Volume: | 261 |
| Right Turn Volume: | 40 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 40 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

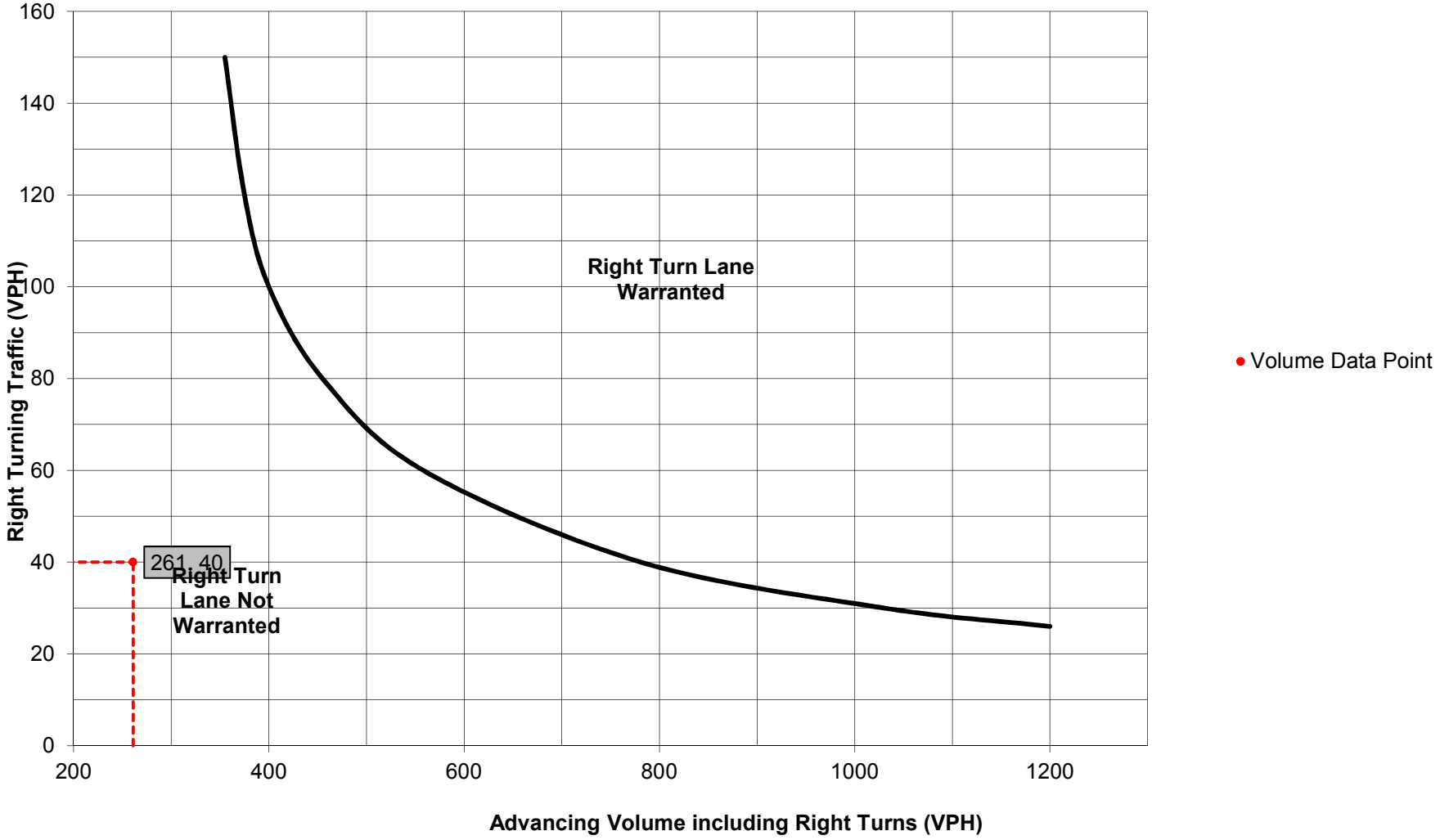
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - EBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 210 | 0.0% | 210 |
| | Through | - | 170 | 1.0% | 171 |
| | Right | - | 56 | 0.0% | 56 |

| | |
|---|---|
| Advancing Volume: | 437 |
| Right Turn Volume: | 56 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 56 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

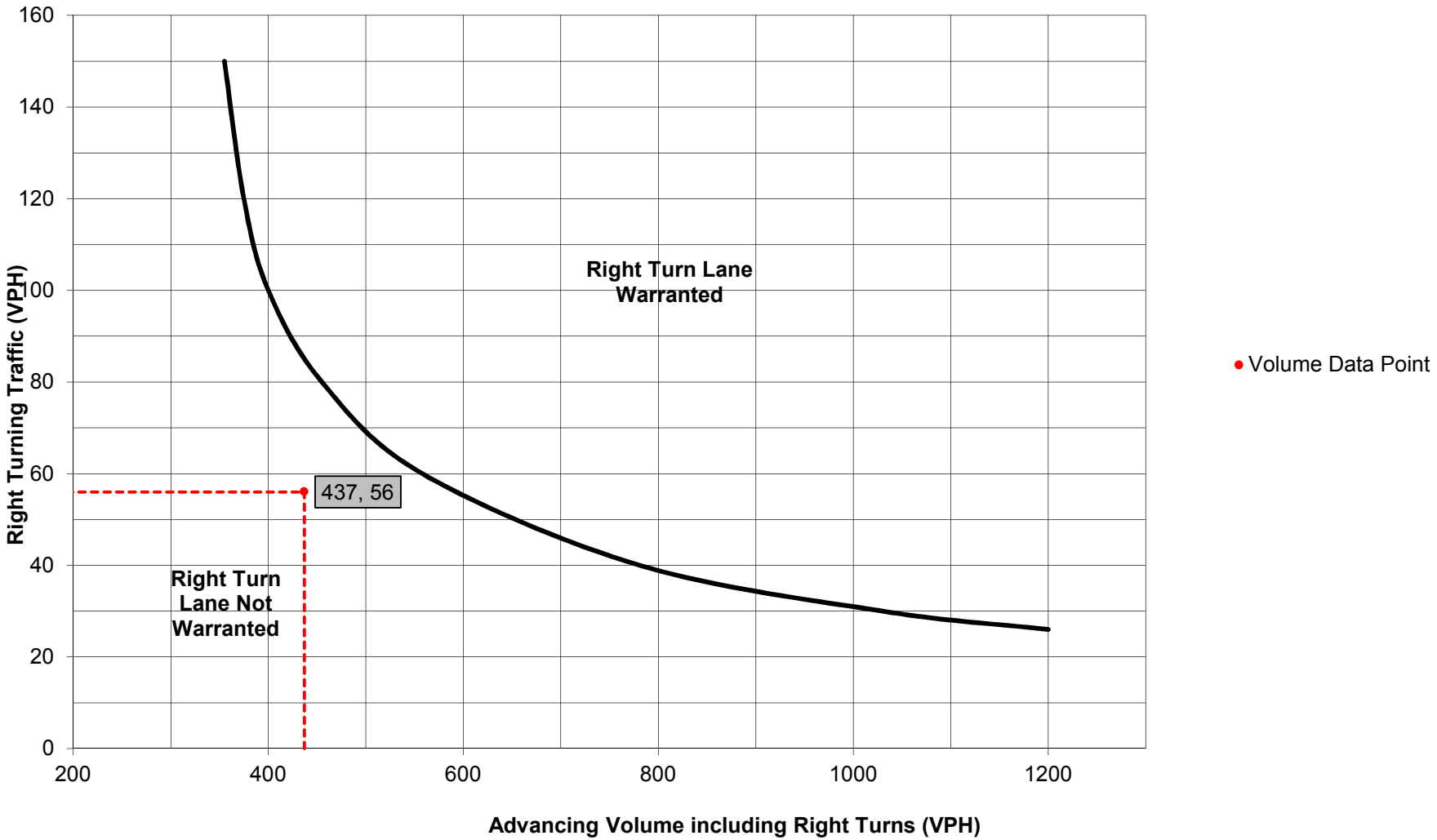
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - EBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 245 | 0.0% | 245 |
| | Through | - | 106 | 1.0% | 107 |
| | Right | - | 56 | 2.0% | 57 |

| | |
|---|---|
| Advancing Volume: | 409 |
| Right Turn Volume: | 57 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 57 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

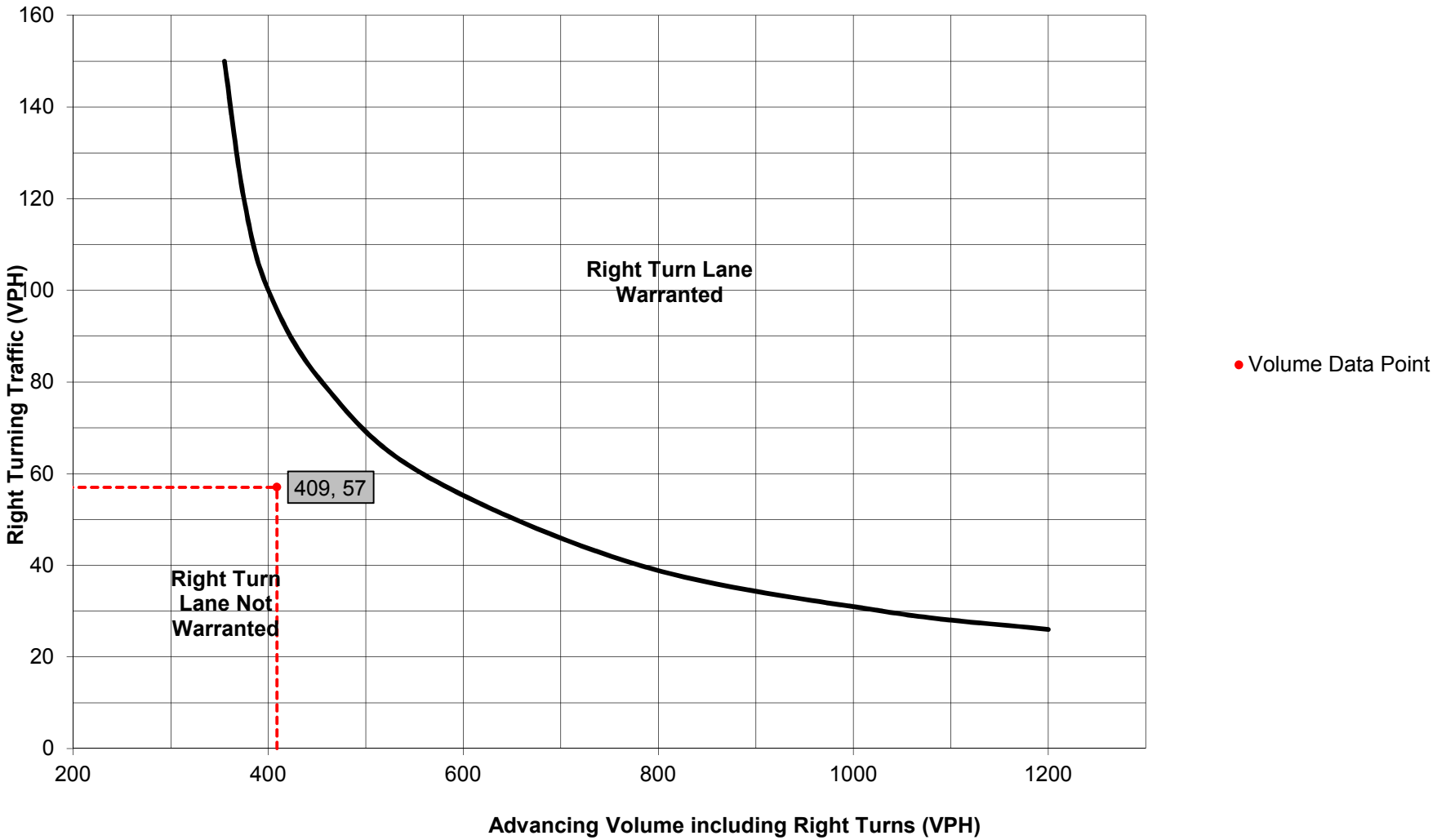
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - NBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 173 | 4.0% | 177 |
| | Through | - | 1221 | 3.0% | 1240 |
| | Right | Yes | 41 | 5.0% | 43 |
| Opposing | Left | No | 1 | 0.0% | N/A |
| | Through | - | 837 | 4.0% | 854 |
| | Right | Yes | 150 | 3.0% | 153 |

| | |
|---|---|
| Advancing Volume: | 1460 |
| Opposing Volume: | 1007 |
| Left Turn Volume: | 177 |
| % Left Turns in Advancing Volume: | 12.12% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 177 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

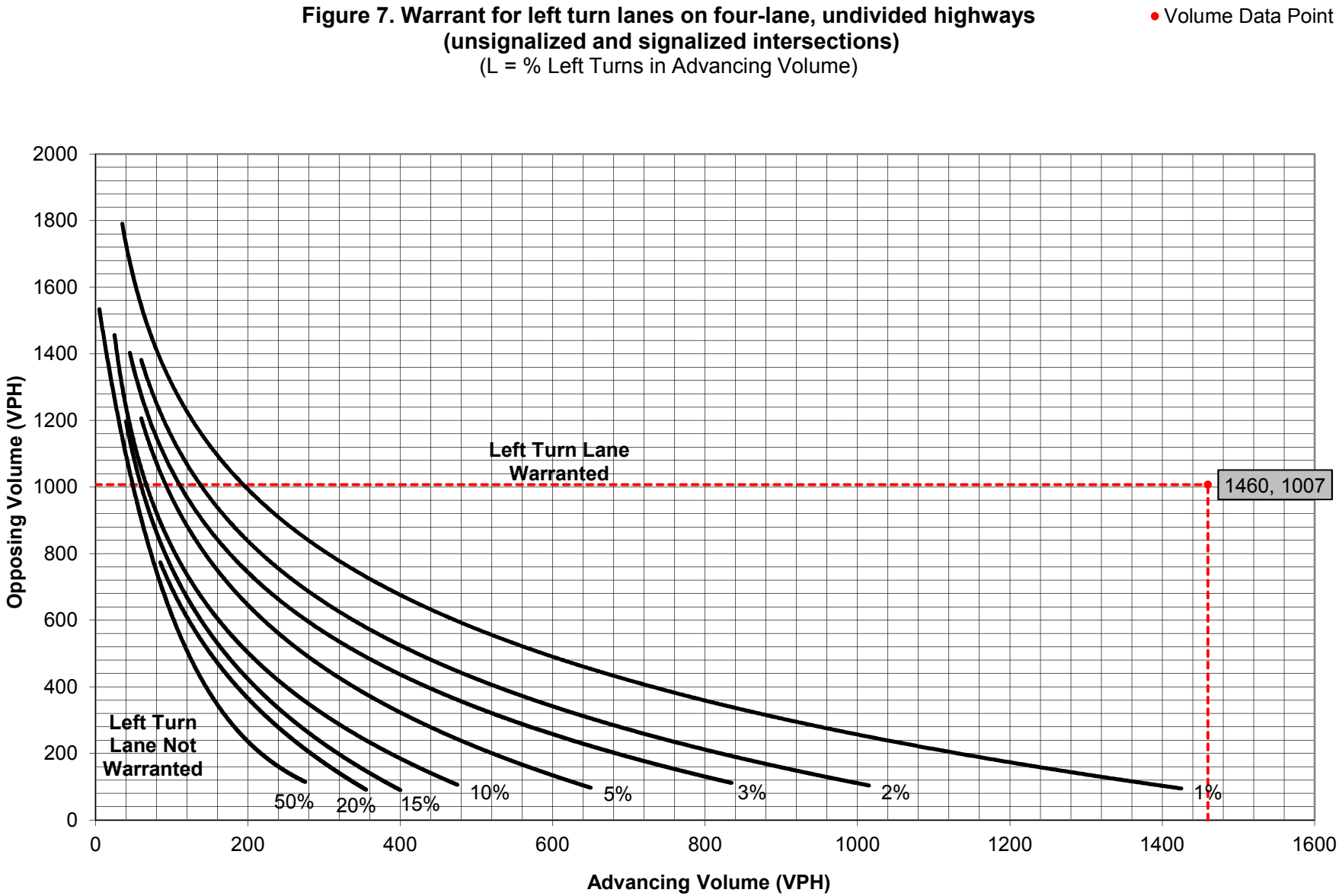
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 211 | Feet |
| Required Left Turn Lane Storage Length: | 225 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - NBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 75 | 4.0% | 77 |
| | Through | - | 1141 | 1.0% | 1147 |
| | Right | Yes | 62 | 3.0% | 63 |
| Opposing | Left | No | 4 | 0.0% | N/A |
| | Through | - | 1471 | 1.0% | 1479 |
| | Right | Yes | 208 | 1.0% | 210 |

| | |
|---|---|
| Advancing Volume: | 1287 |
| Opposing Volume: | 1689 |
| Left Turn Volume: | 77 |
| % Left Turns in Advancing Volume: | 5.98% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 77 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

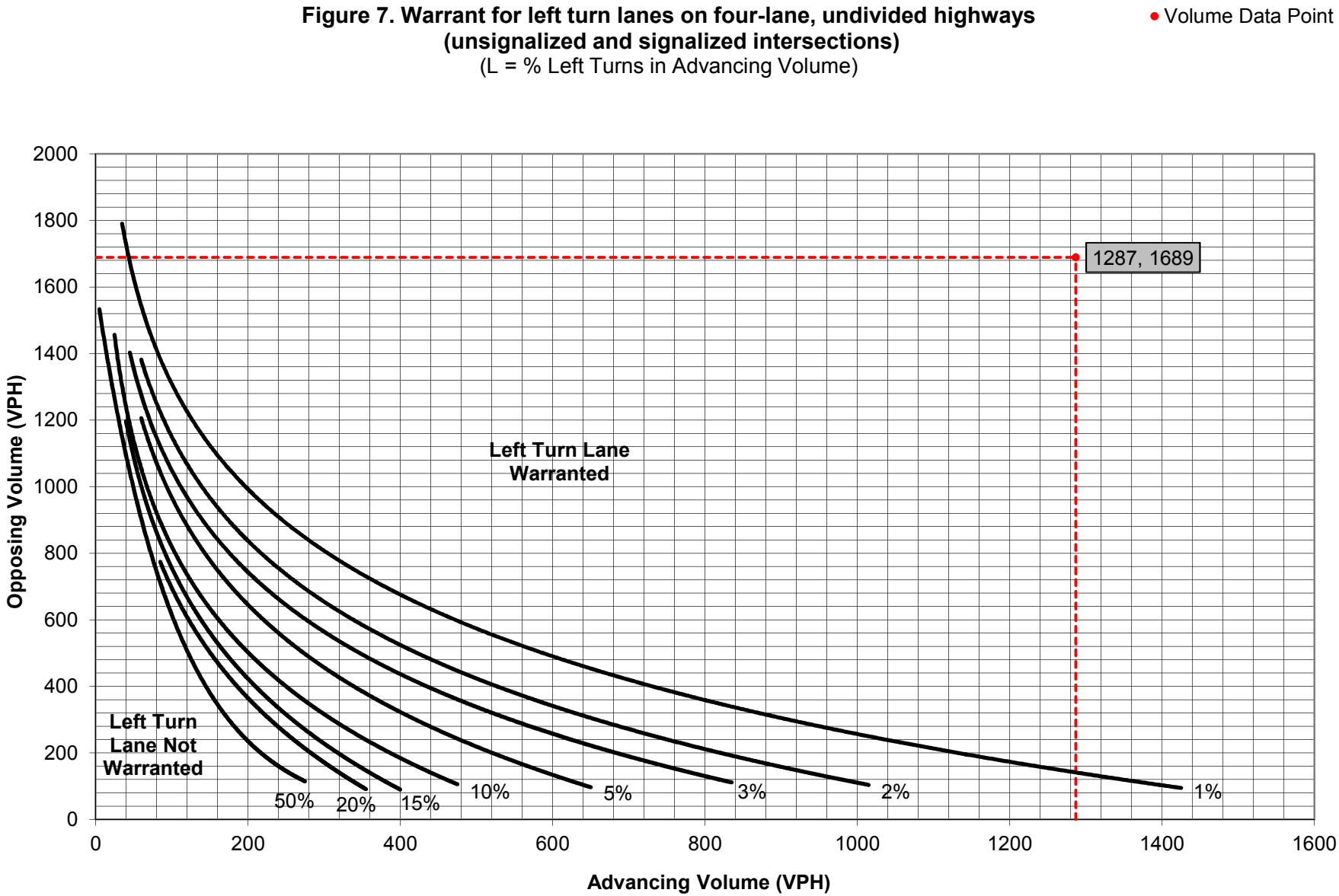
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 136 | Feet |
| Required Left Turn Lane Storage Length: | 150 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - NBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 69 | 2.0% | 70 |
| | Through | - | 1656 | 1.0% | 1665 |
| | Right | Yes | 73 | 6.0% | 76 |
| Opposing | Left | No | 3 | 0.0% | N/A |
| | Through | - | 1269 | 1.0% | 1276 |
| | Right | Yes | 179 | 1.0% | 180 |

| | |
|---|---|
| Advancing Volume: | 1811 |
| Opposing Volume: | 1456 |
| Left Turn Volume: | 70 |
| % Left Turns in Advancing Volume: | 3.87% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 70 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

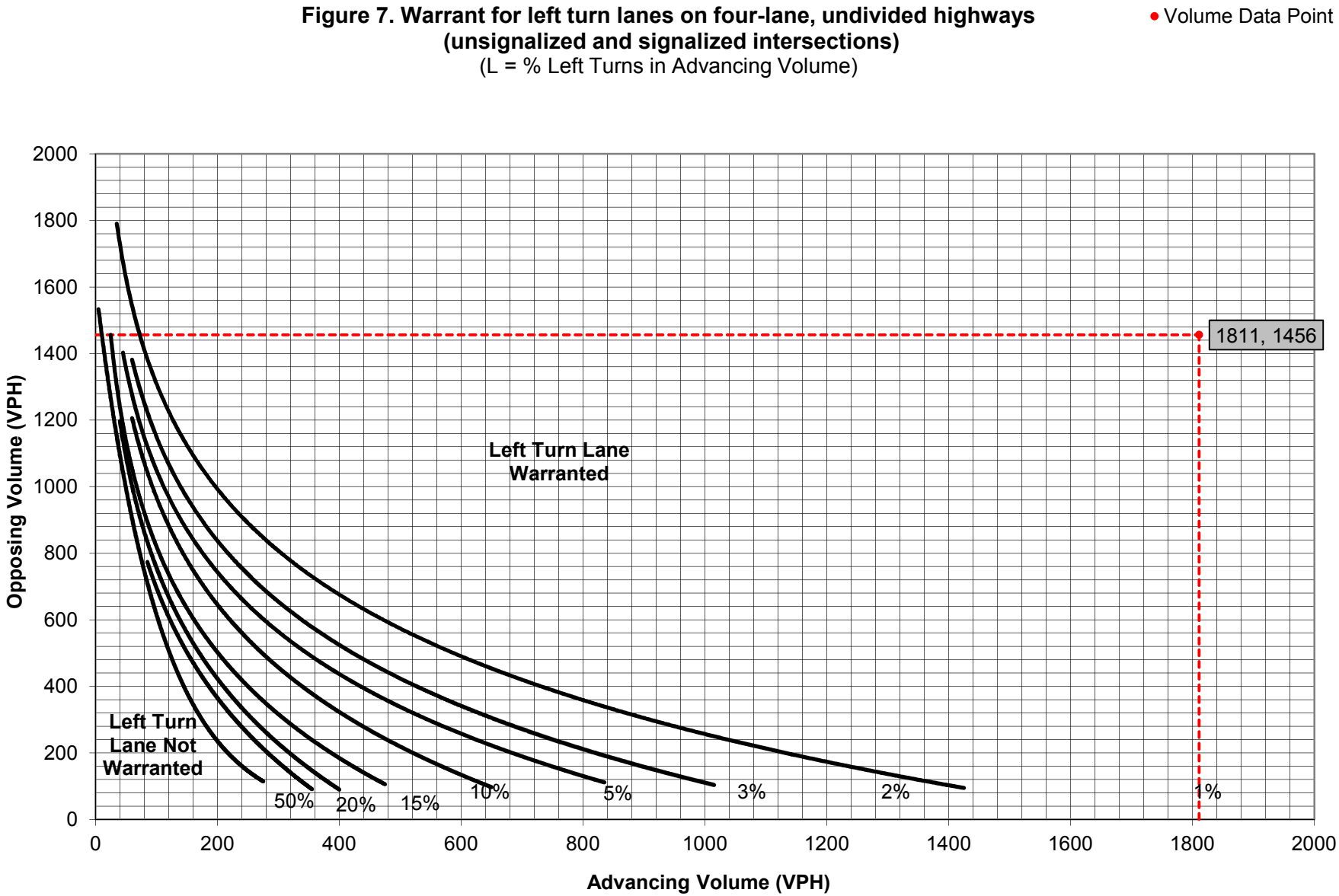
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | 75 | Feet |
| Condition C: | 136 | Feet |
| Required Left Turn Lane Storage Length: | 150 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 1 | 0.0% | 1 |
| | Through | - | 837 | 4.0% | 854 |
| | Right | Yes | 150 | 3.0% | 153 |
| Opposing | Left | No | 173 | 4.0% | N/A |
| | Through | - | 1221 | 3.0% | 1240 |
| | Right | Yes | 41 | 5.0% | 43 |

| | |
|---|---|
| Advancing Volume: | 1008 |
| Opposing Volume: | 1283 |
| Left Turn Volume: | 1 |
| % Left Turns in Advancing Volume: | 0.10% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 1 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

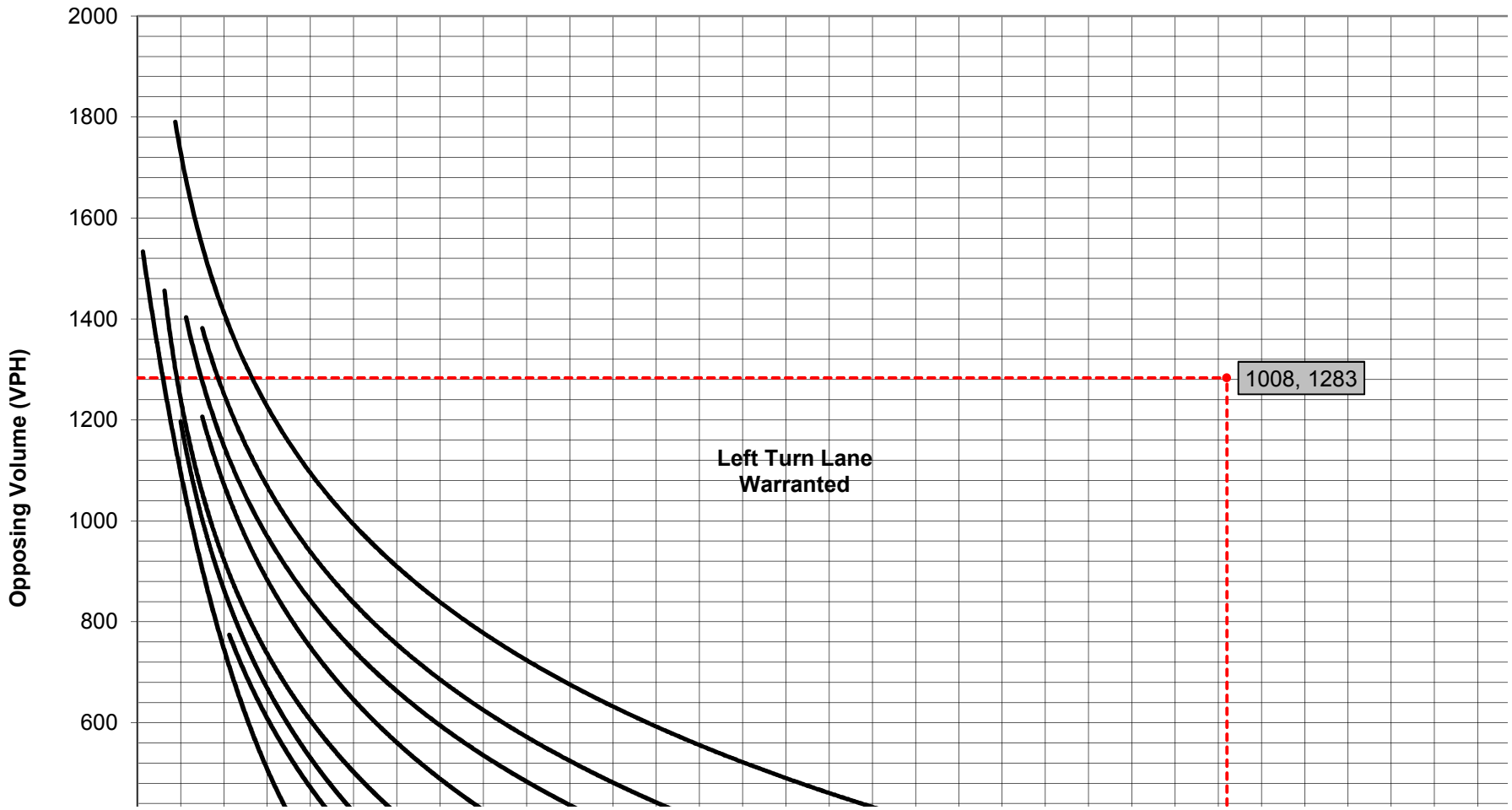
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 4 | 0.0% | 4 |
| | Through | - | 1471 | 1.0% | 1479 |
| | Right | Yes | 208 | 1.0% | 210 |
| Opposing | Left | No | 75 | 4.0% | N/A |
| | Through | - | 1141 | 1.0% | 1147 |
| | Right | Yes | 62 | 3.0% | 63 |

| | |
|---|---|
| Advancing Volume: | 1693 |
| Opposing Volume: | 1210 |
| Left Turn Volume: | 4 |
| % Left Turns in Advancing Volume: | 0.24% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 4 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

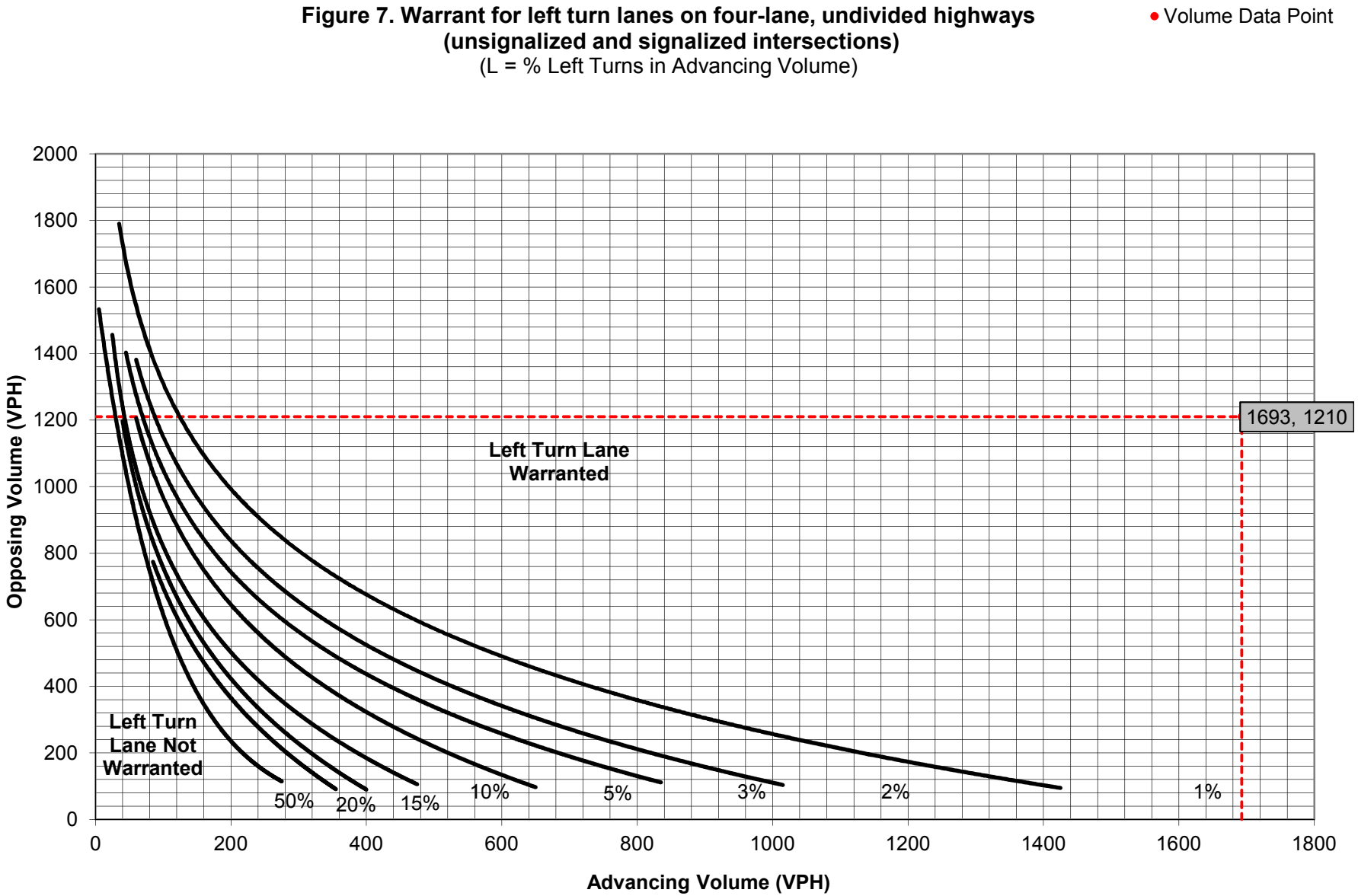
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/28/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Sproul Road & Old Marple Road - SBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 40 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 3 | 0.0% | 3 |
| | Through | - | 1269 | 1.0% | 1276 |
| | Right | Yes | 179 | 1.0% | 180 |
| Opposing | Left | No | 69 | 2.0% | N/A |
| | Through | - | 1656 | 1.0% | 1665 |
| | Right | Yes | 73 | 6.0% | 76 |

| | |
|---|---|
| Advancing Volume: | 1459 |
| Opposing Volume: | 1741 |
| Left Turn Volume: | 3 |
| % Left Turns in Advancing Volume: | 0.21% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | - | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 3 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

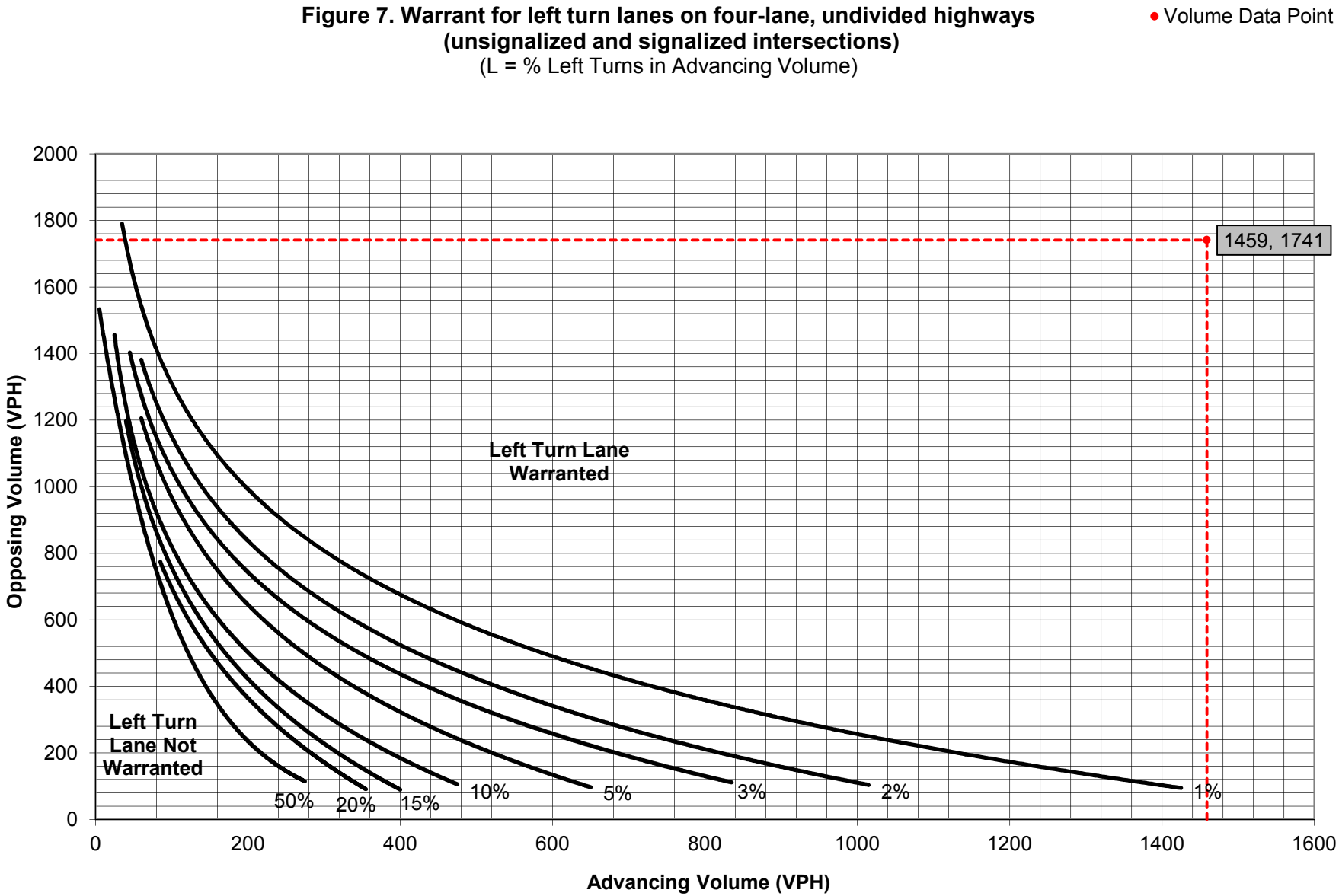
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



***REED ROAD & SHOPPING CENTER DRIVEWAY/***
***PROPOSED DRIVEWAY***

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 192 | 1.0% | 193 |
| | Through | - | 426 | 5.0% | 437 |
| | Right | Yes | 10 | 2.0% | 11 |
| Opposing | Left | No | | | N/A |
| | Through | - | 374 | 8.0% | 389 |
| | Right | Yes | 62 | 17.0% | 68 |

| | |
|---|---|
| Advancing Volume: | 641 |
| Opposing Volume: | 457 |
| Left Turn Volume: | 193 |
| % Left Turns in Advancing Volume: | 30.11% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 374 | 8.0% | N/A |
| | Right | - | 62 | 17.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 193 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

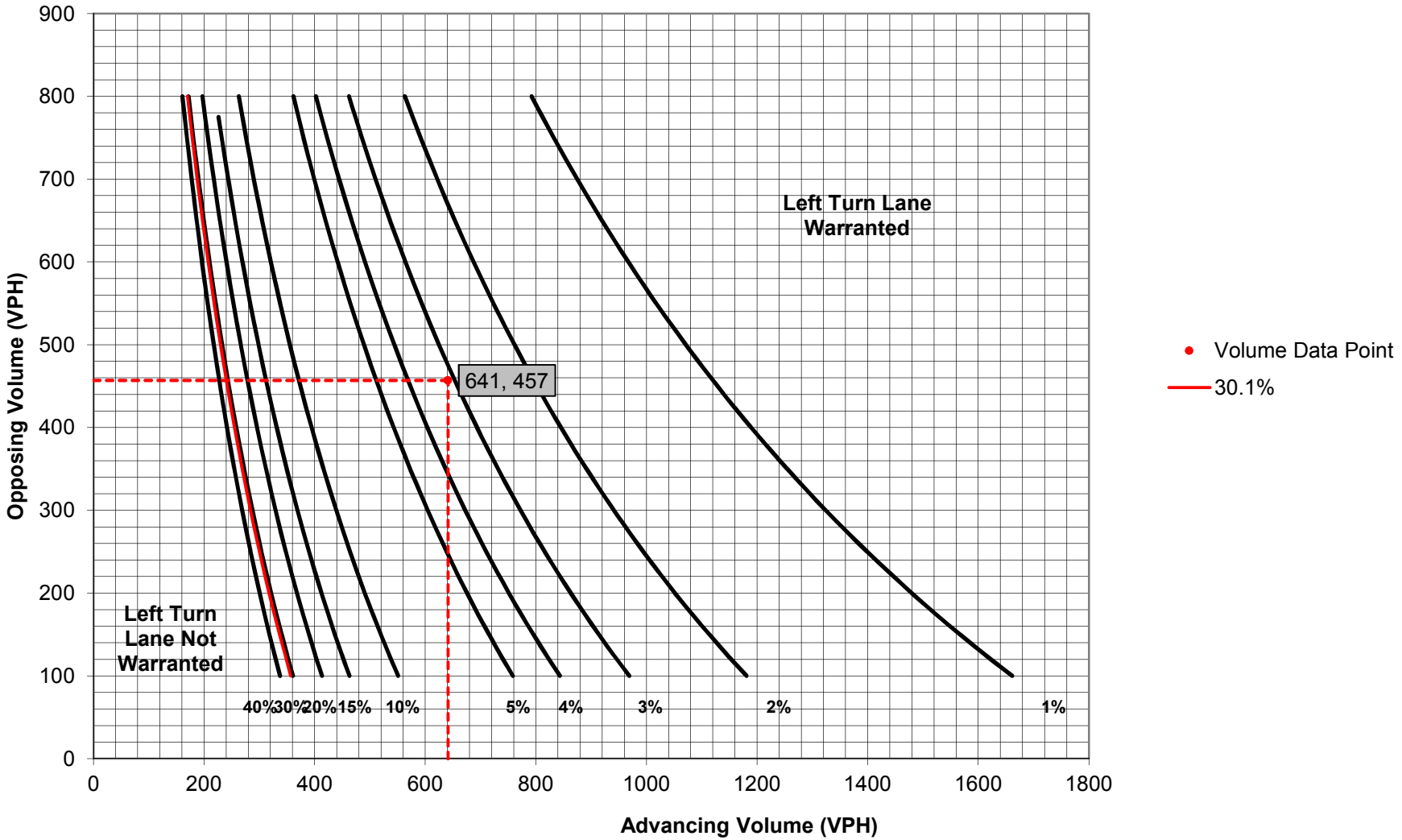
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 150 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 150 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 192 | 1.0% | N/A |
| | Through | - | 426 | 5.0% | N/A |
| | Right | Yes | 10 | 2.0% | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 374 | 8.0% | N/A |
| | Right | Yes | 62 | 17.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 374 | 8.0% | 389 |
| | Right | - | 62 | 17.0% | 68 |

| | |
|---|---|
| Advancing Volume: | 457 |
| Right Turn Volume: | 68 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 68 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

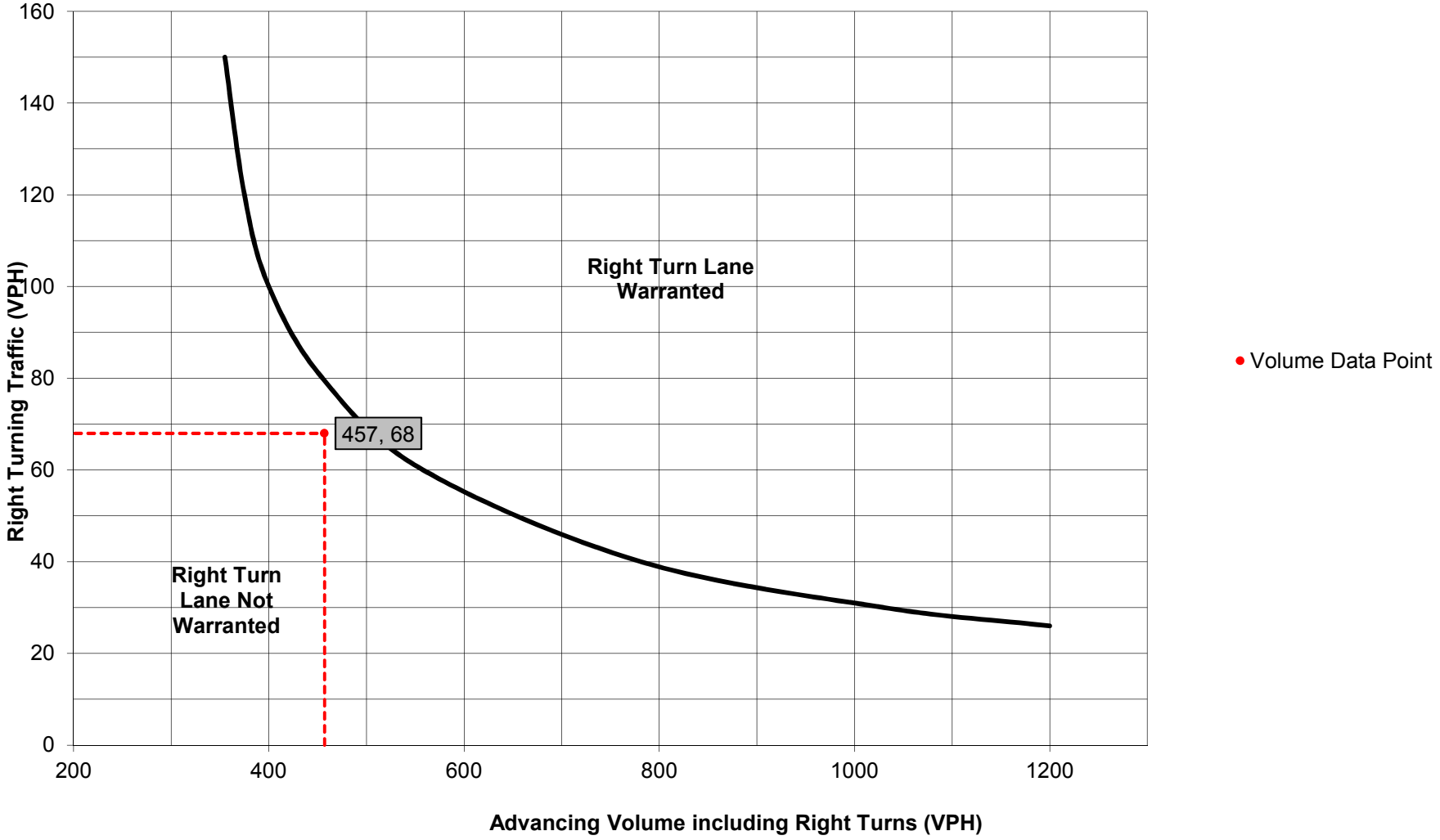
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 207 | 1.0% | 209 |
| | Through | - | 520 | 1.0% | 523 |
| | Right | Yes | 18 | 2.0% | 19 |
| Opposing | Left | No | | | N/A |
| | Through | - | 493 | 1.0% | 496 |
| | Right | Yes | 29 | 0.0% | 29 |

| | |
|---|---|
| Advancing Volume: | 751 |
| Opposing Volume: | 525 |
| Left Turn Volume: | 209 |
| % Left Turns in Advancing Volume: | 27.83% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 493 | 1.0% | N/A |
| | Right | - | 29 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 209 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

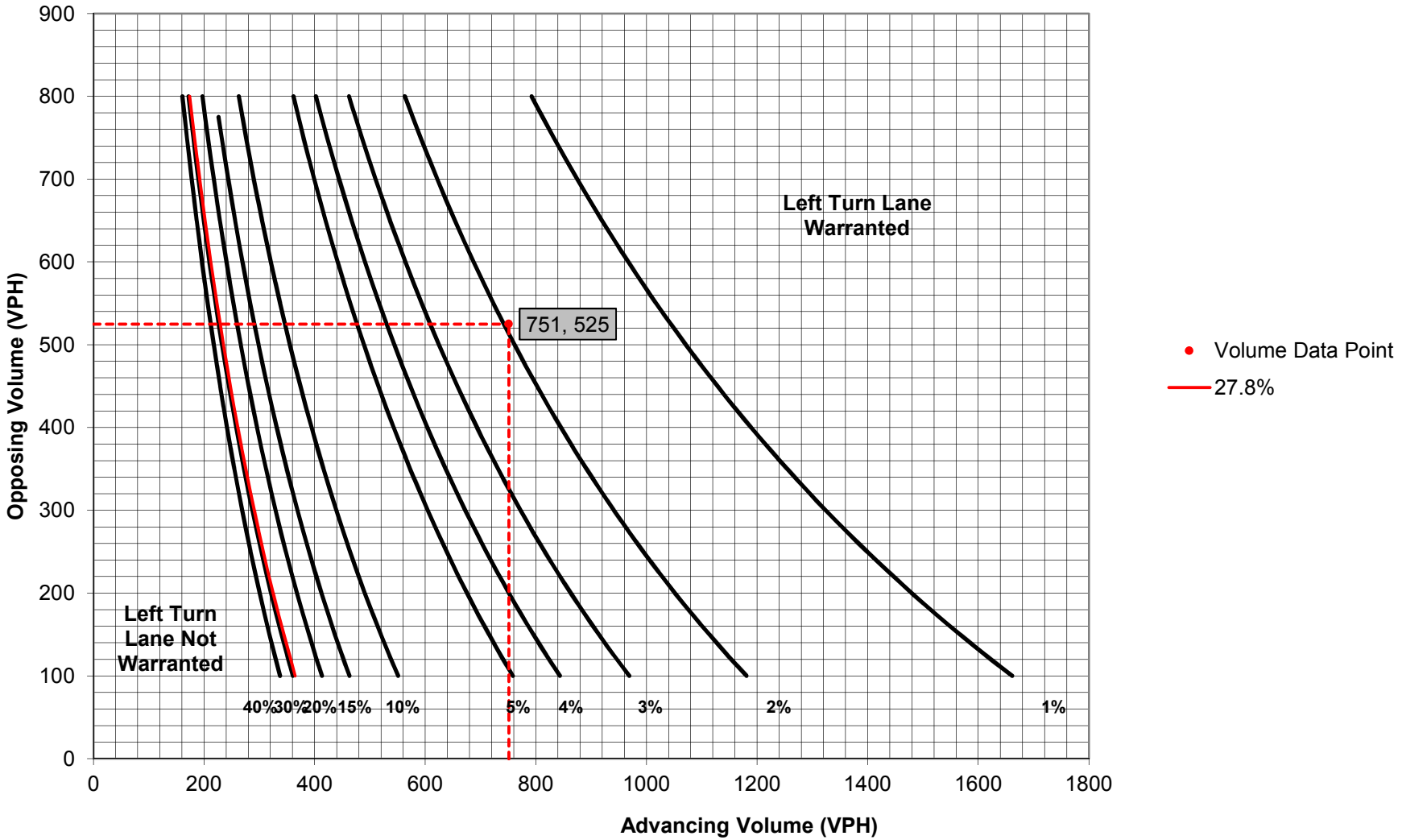
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 150 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 150 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 207 | 1.0% | N/A |
| | Through | - | 520 | 1.0% | N/A |
| | Right | Yes | 18 | 2.0% | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 493 | 1.0% | N/A |
| | Right | Yes | 29 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 493 | 1.0% | 496 |
| | Right | - | 29 | 0.0% | 29 |

| | |
|---|---|
| Advancing Volume: | 525 |
| Right Turn Volume: | 29 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 29 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

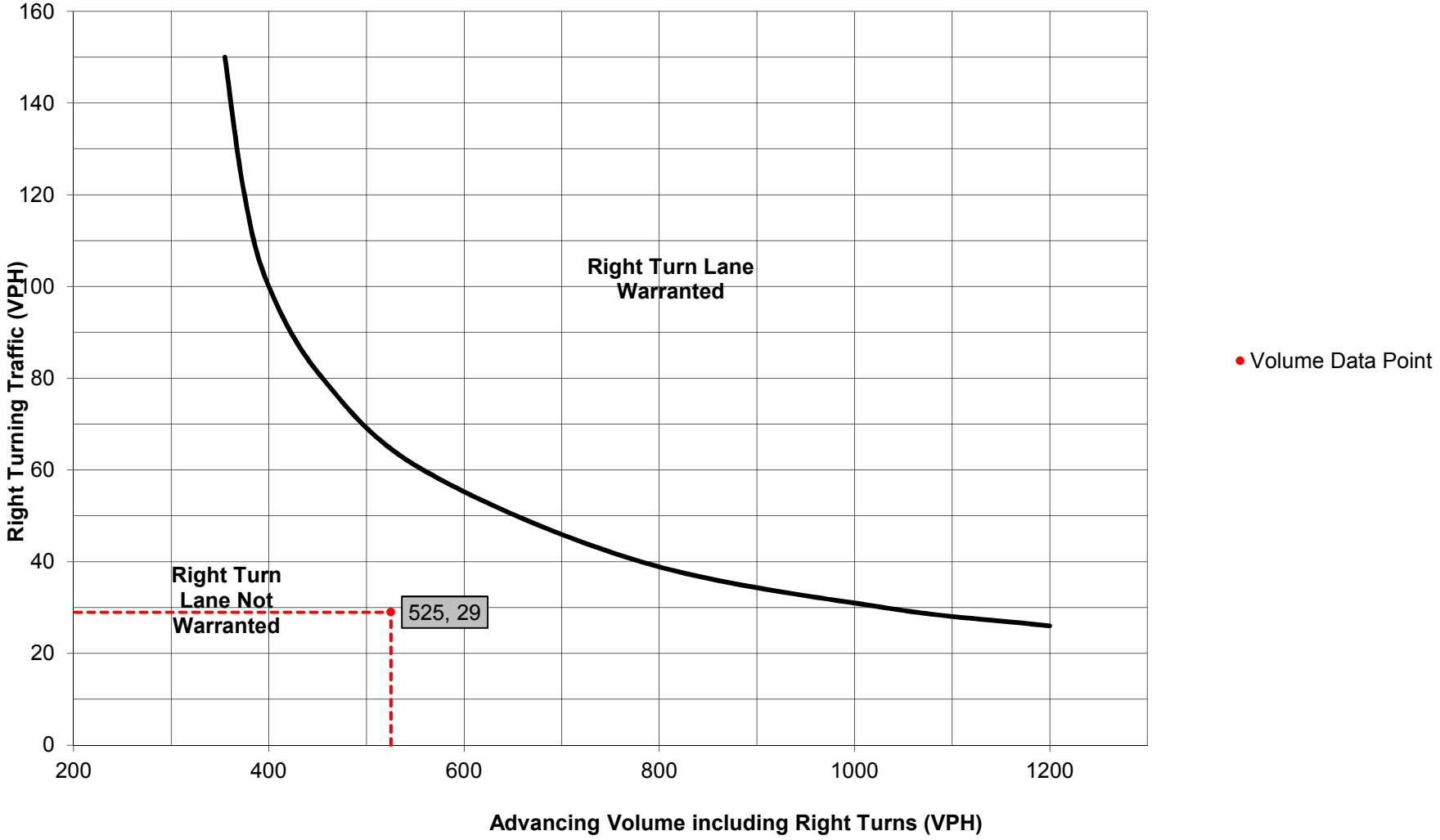
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 301 | 1.0% | 303 |
| | Through | - | 467 | 1.0% | 470 |
| | Right | Yes | 30 | 2.0% | 31 |
| Opposing | Left | No | | | N/A |
| | Through | - | 484 | 1.0% | 487 |
| | Right | Yes | 98 | 0.0% | 98 |

| | |
|---|---|
| Advancing Volume: | 804 |
| Opposing Volume: | 585 |
| Left Turn Volume: | 303 |
| % Left Turns in Advancing Volume: | 37.69% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 484 | 1.0% | N/A |
| | Right | - | 98 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 303 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 5.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

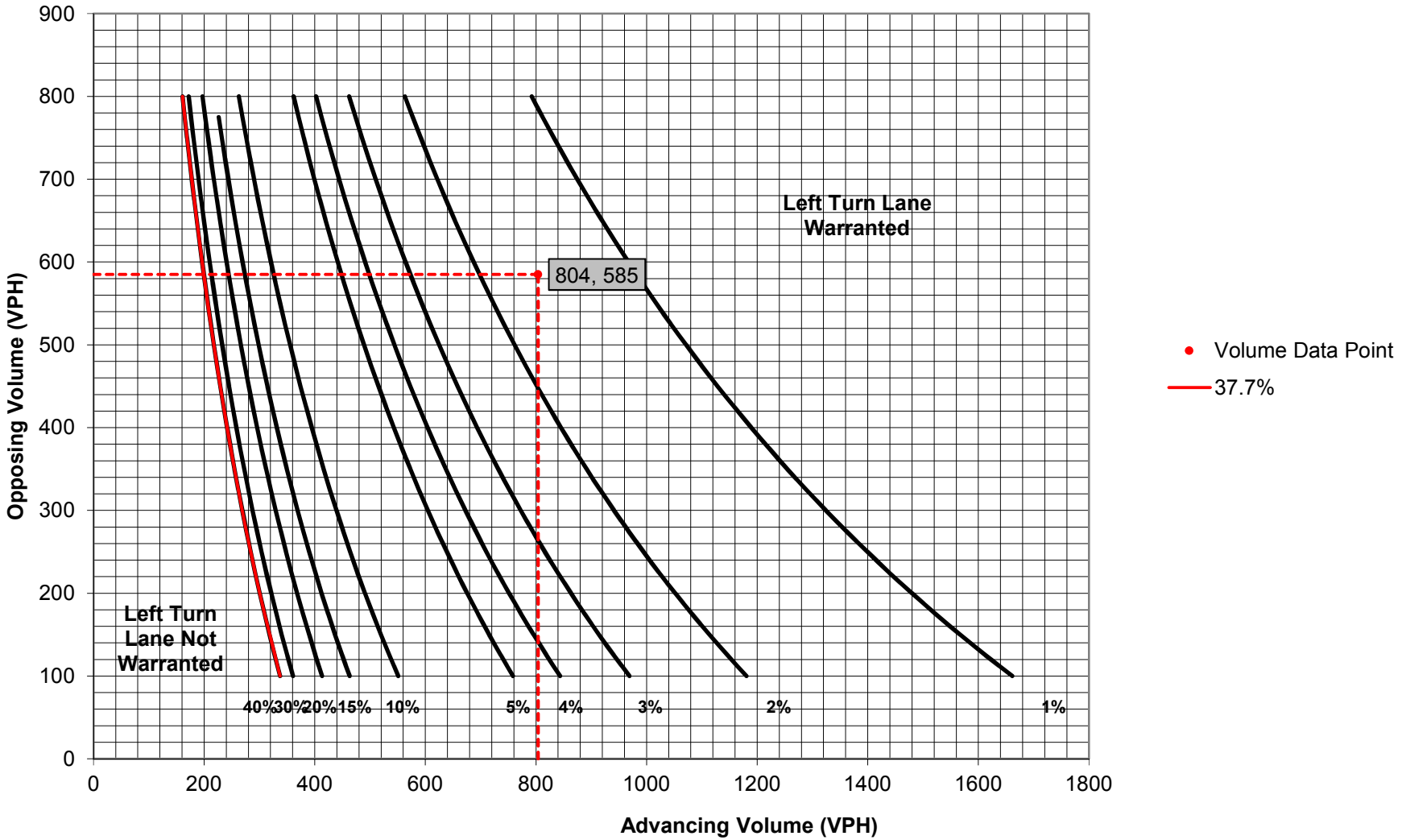
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 200 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 200 | Feet |

Additional Findings:

Consider Dual Left Turn Lanes and Operational Analyses

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Shopping Center Driveway - EBL/WBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 301 | 1.0% | N/A |
| | Through | - | 467 | 1.0% | N/A |
| | Right | Yes | 30 | 2.0% | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 484 | 1.0% | N/A |
| | Right | Yes | 98 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 484 | 1.0% | 487 |
| | Right | - | 98 | 0.0% | 98 |

| | |
|---|---|
| Advancing Volume: | 585 |
| Right Turn Volume: | 98 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 98 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

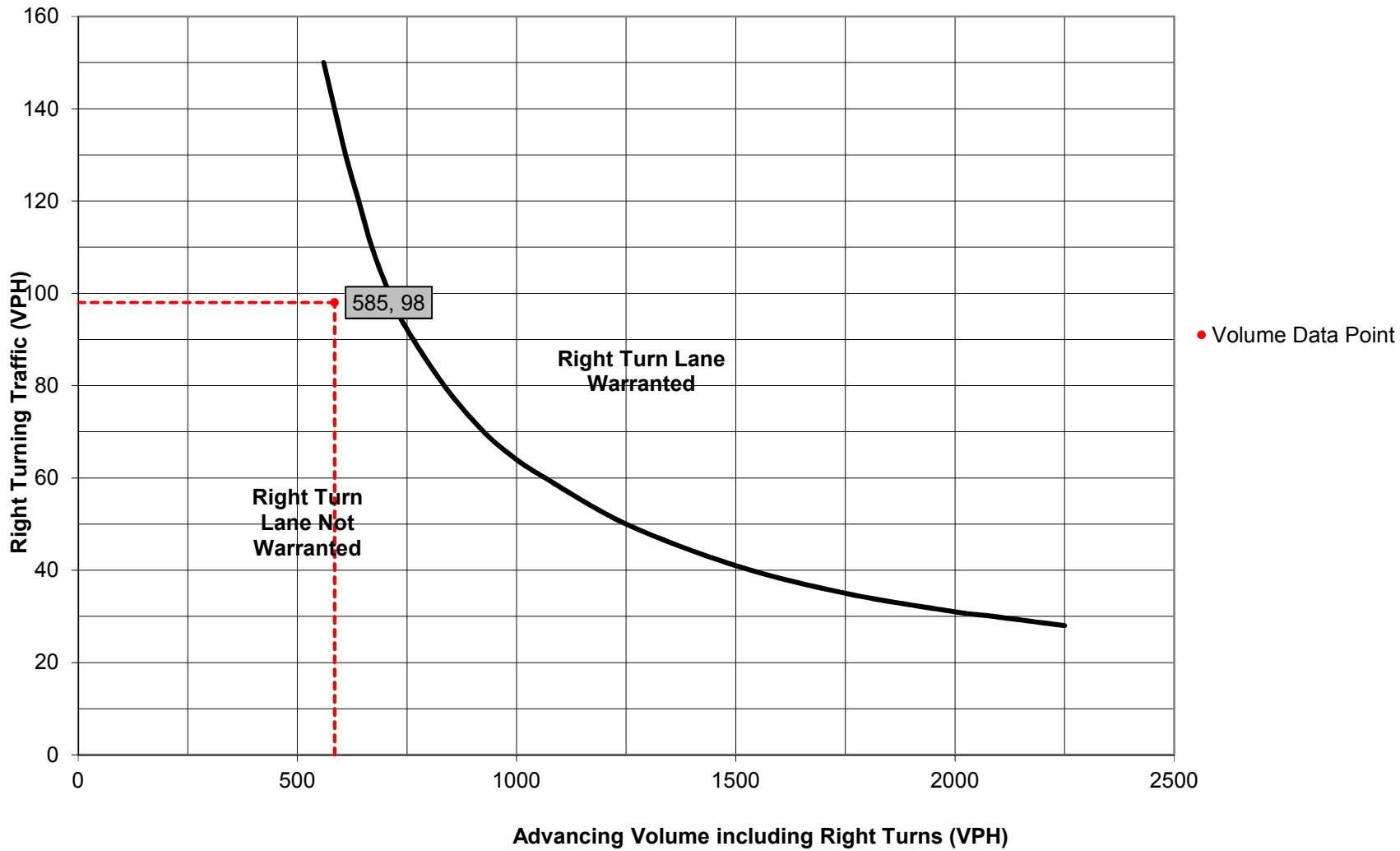
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# *REED ROAD & LAWRENCE BUSINESS PARK DRIVEWAY/ PROPOSED DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 46 | 2.0% | N/A |
| | Through | - | 395 | 9.0% | N/A |
| | Right | Yes | 63 | 5.0% | N/A |
| Opposing | Left | No | 48 | 2.0% | N/A |
| | Through | - | 396 | 6.0% | N/A |
| | Right | Yes | 52 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 48 | 2.0% | 49 |
| | Through | - | 396 | 6.0% | 408 |
| | Right | - | 52 | 2.0% | 53 |

| | |
|---|---|
| Advancing Volume: | 510 |
| Right Turn Volume: | 53 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 53 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

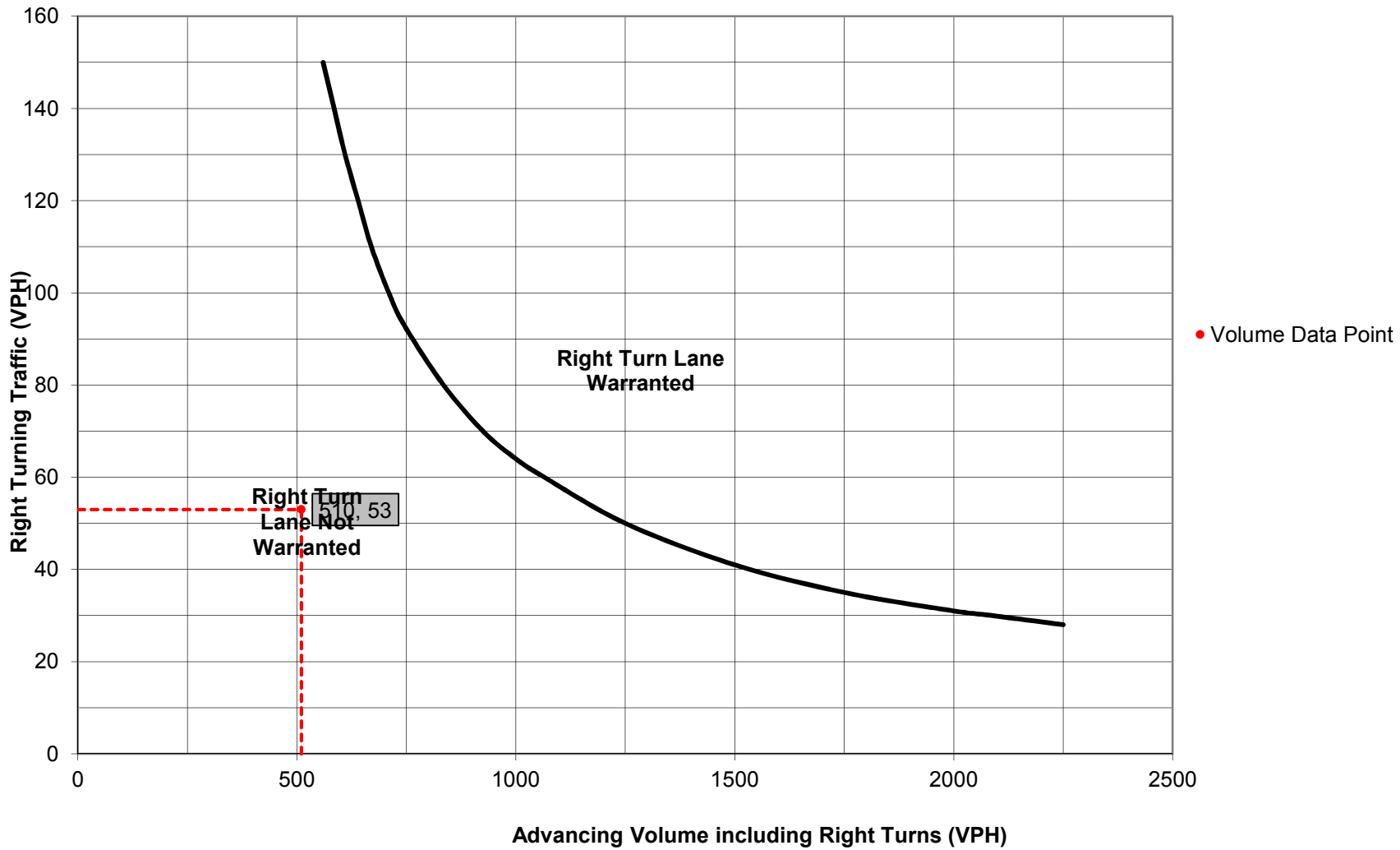
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 46 | 2.0% | 47 |
| | Through | - | 395 | 9.0% | 413 |
| | Right | Yes | 63 | 5.0% | 65 |
| Opposing | Left | No | 48 | 2.0% | N/A |
| | Through | - | 396 | 6.0% | 408 |
| | Right | Yes | 52 | 2.0% | 53 |

| | |
|---|---|
| Advancing Volume: | 525 |
| Opposing Volume: | 461 |
| Left Turn Volume: | 47 |
| % Left Turns in Advancing Volume: | 8.95% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 48 | 2.0% | N/A |
| | Through | - | 396 | 6.0% | N/A |
| | Right | - | 52 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 47 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

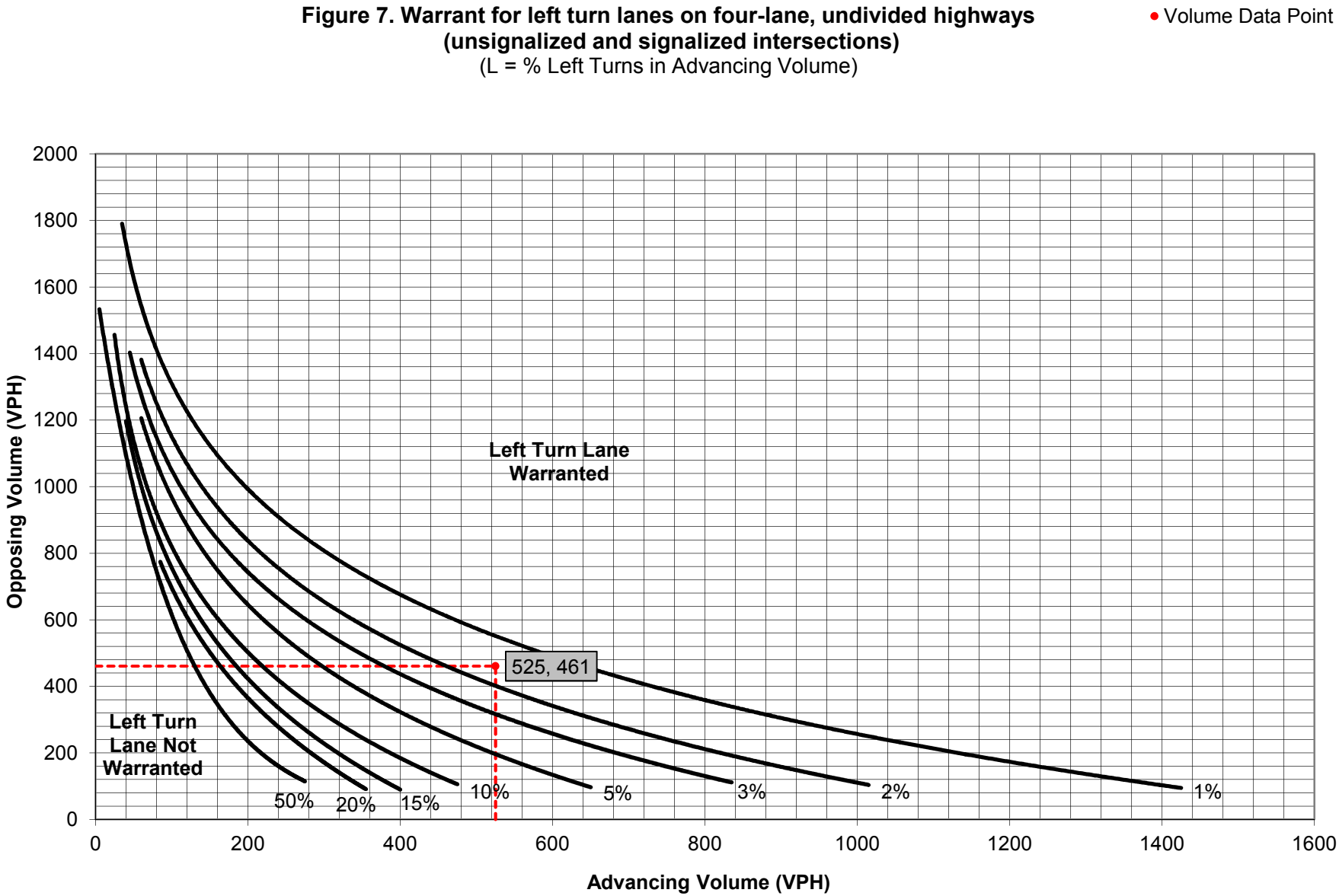
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 75 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 110 | 2.0% | N/A |
| | Through | - | 377 | 1.0% | N/A |
| | Right | Yes | 36 | 0.0% | N/A |
| Opposing | Left | No | 25 | 4.0% | N/A |
| | Through | - | 417 | 3.0% | N/A |
| | Right | Yes | 123 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 25 | 4.0% | 26 |
| | Through | - | 417 | 3.0% | 424 |
| | Right | - | 123 | 2.0% | 125 |

| | |
|---|---|
| Advancing Volume: | 575 |
| Right Turn Volume: | 125 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 125 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

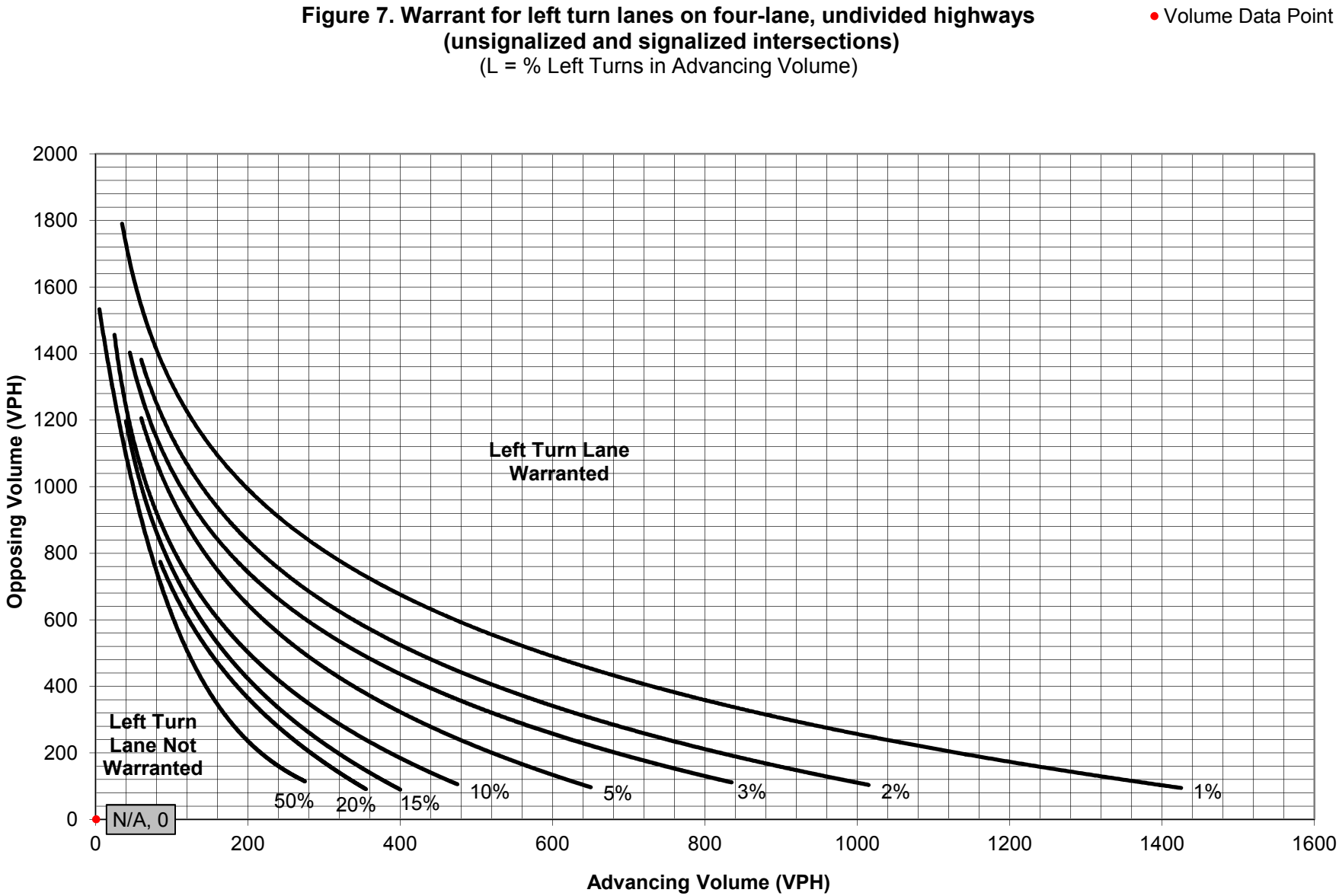
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 110 | 2.0% | 112 |
| | Through | - | 377 | 1.0% | 379 |
| | Right | Yes | 36 | 0.0% | 36 |
| Opposing | Left | No | 25 | 4.0% | N/A |
| | Through | - | 417 | 3.0% | 424 |
| | Right | Yes | 123 | 2.0% | 125 |

| | |
|---|---|
| Advancing Volume: | 527 |
| Opposing Volume: | 549 |
| Left Turn Volume: | 112 |
| % Left Turns in Advancing Volume: | 21.25% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 25 | 4.0% | N/A |
| | Through | - | 417 | 3.0% | N/A |
| | Right | - | 123 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 112 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

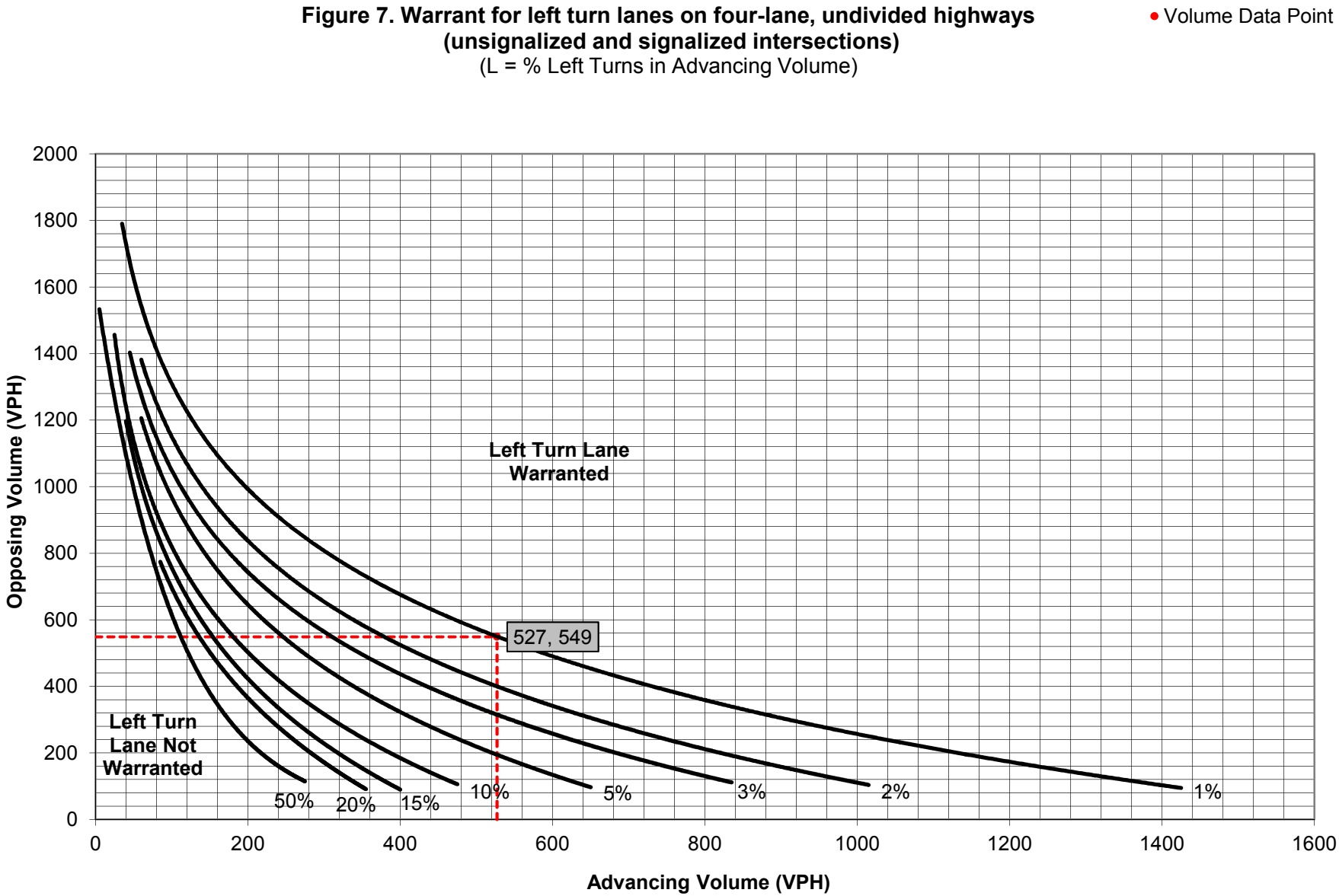
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 100 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 100 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 158 | 2.0% | N/A |
| | Through | - | 337 | 1.0% | N/A |
| | Right | Yes | 65 | 0.0% | N/A |
| Opposing | Left | No | 36 | 3.0% | N/A |
| | Through | - | 342 | 1.0% | N/A |
| | Right | Yes | 176 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 36 | 3.0% | 37 |
| | Through | - | 342 | 1.0% | 344 |
| | Right | - | 178 | 2.0% | 180 |

| | |
|---|---|
| Advancing Volume: | 561 |
| Right Turn Volume: | 180 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 180 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: 3.0

PennDOT Publication 46, Exhibit 11-6

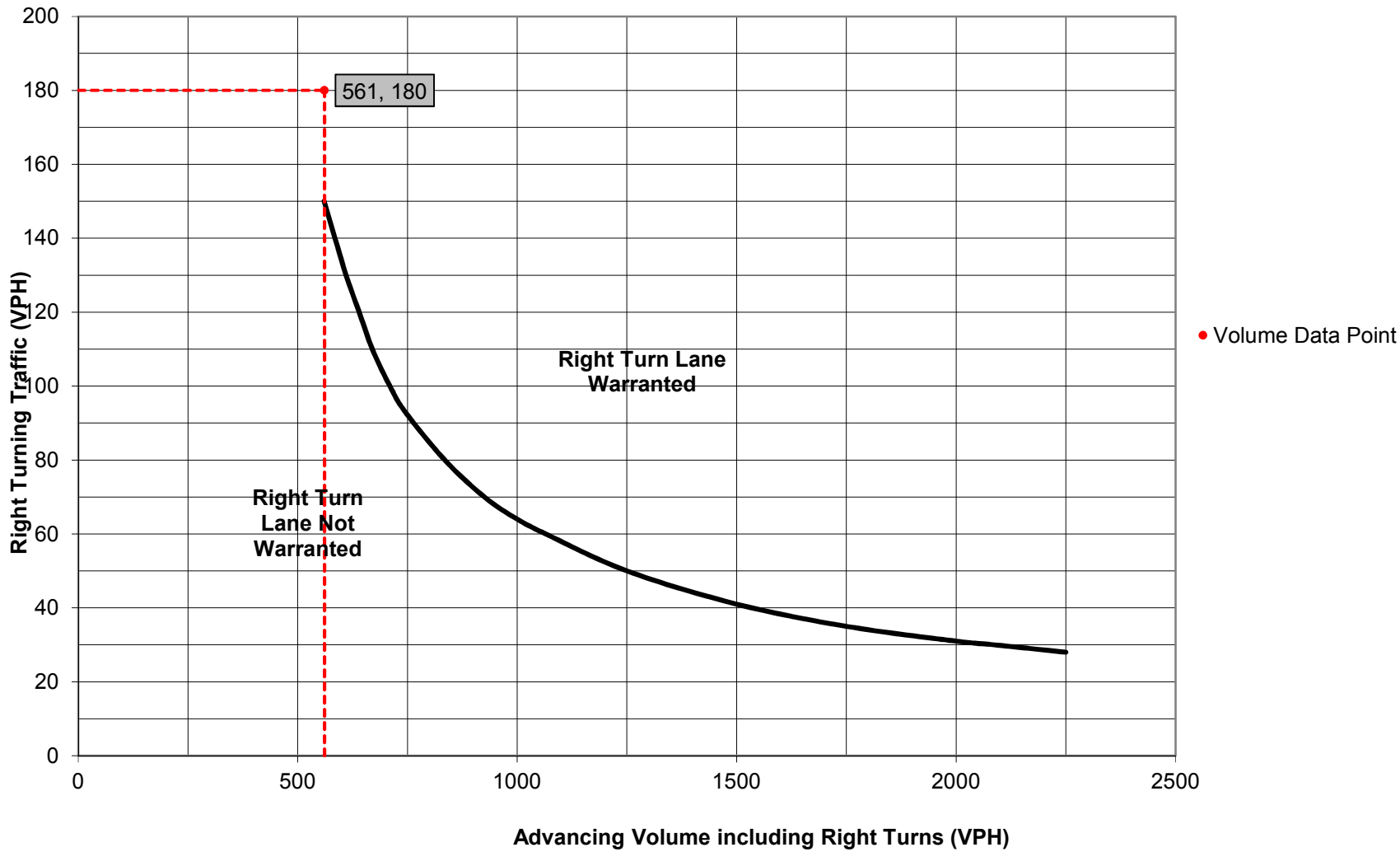
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | 150 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | 150 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Lawrence Park/Proposed Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 158 | 2.0% | 160 |
| | Through | - | 337 | 1.0% | 339 |
| | Right | Yes | 65 | 0.0% | 65 |
| Opposing | Left | No | 36 | 3.0% | N/A |
| | Through | - | 342 | 1.0% | 344 |
| | Right | Yes | 176 | 2.0% | 178 |

| | |
|---|---|
| Advancing Volume: | 564 |
| Opposing Volume: | 522 |
| Left Turn Volume: | 160 |
| % Left Turns in Advancing Volume: | 28.37% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 36 | 3.0% | N/A |
| | Through | - | 342 | 1.0% | N/A |
| | Right | - | 176 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 160 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | 3.0 |

PennDOT Publication 46, Exhibit 11-6

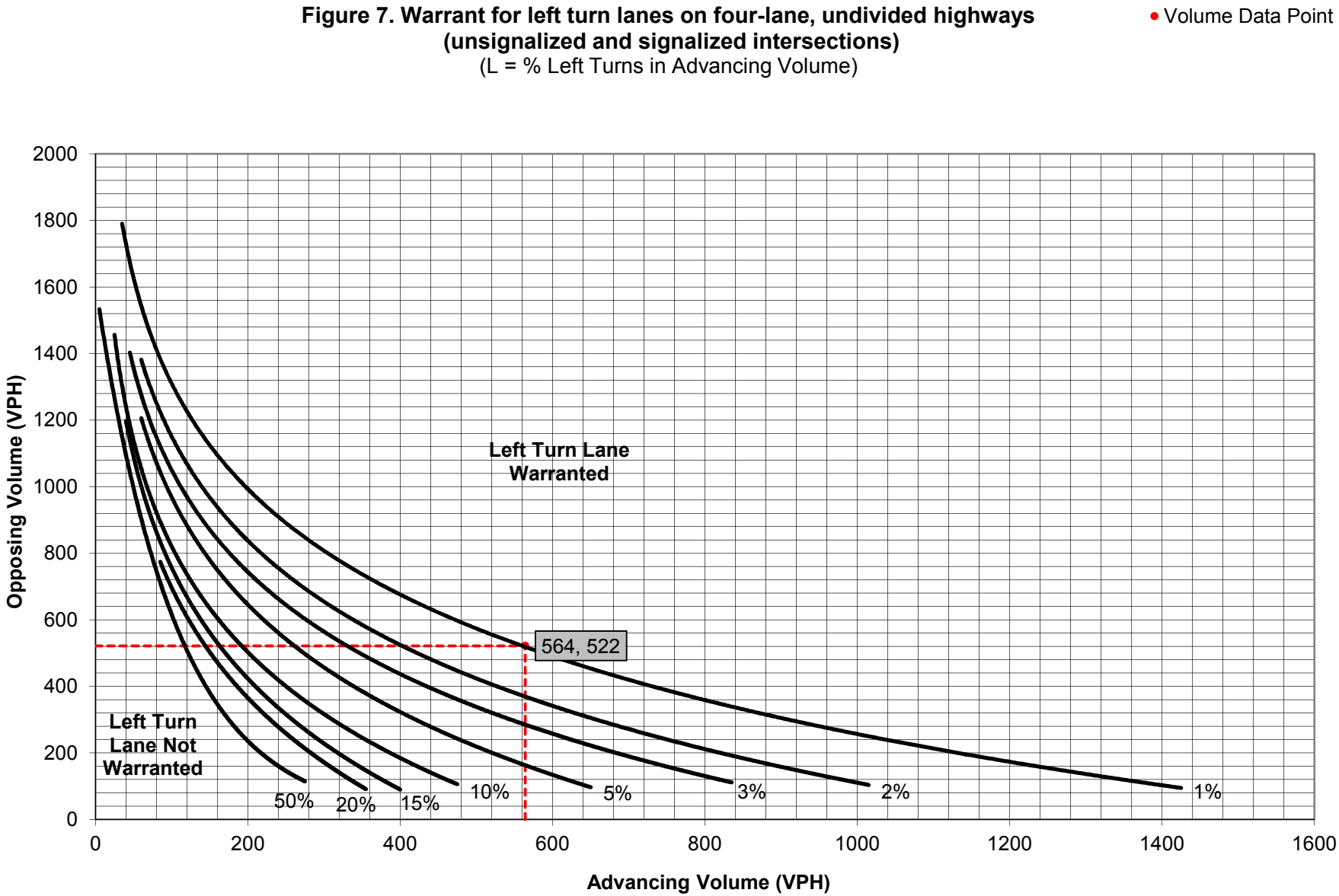
| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 150 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 150 | Feet |

Additional Findings: N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



## *REED ROAD & EASTERN DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 1 | 2.0% | N/A |
| | Through | - | 428 | 9.0% | N/A |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 413 | 9.0% | N/A |
| | Right | Yes | 1 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 413 | 9.0% | 432 |
| | Right | - | 1 | 2.0% | 2 |

| | |
|---|---|
| Advancing Volume: | 434 |
| Right Turn Volume: | 2 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 2 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

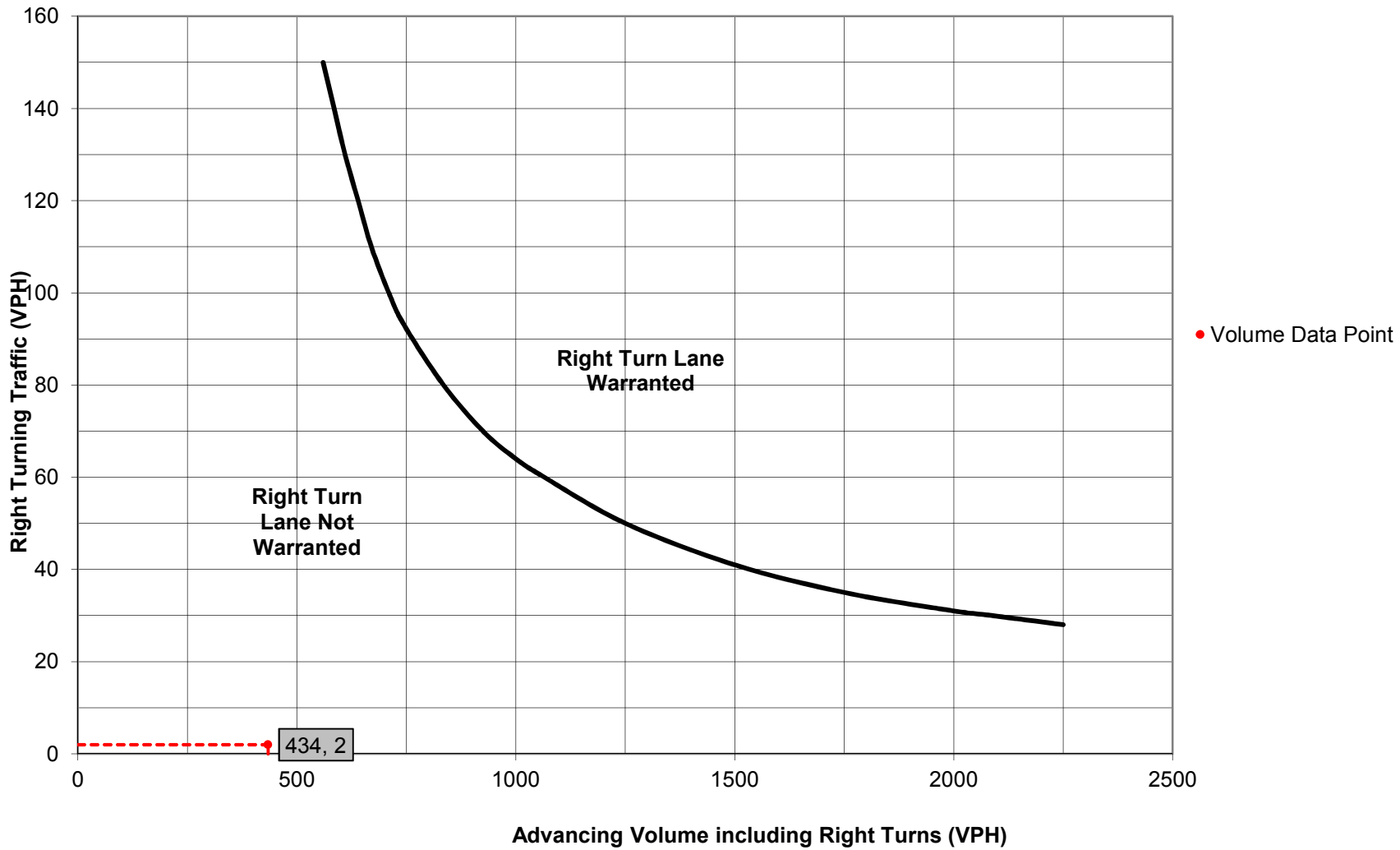
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 1 | 2.0% | 2 |
| | Through | - | 428 | 9.0% | 448 |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 413 | 9.0% | 432 |
| | Right | Yes | 1 | 2.0% | 2 |

| | |
|---|---|
| Advancing Volume: | 450 |
| Opposing Volume: | 434 |
| Left Turn Volume: | 2 |
| % Left Turns in Advancing Volume: | 0.44% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 413 | 9.0% | N/A |
| | Right | - | 1 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 2 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

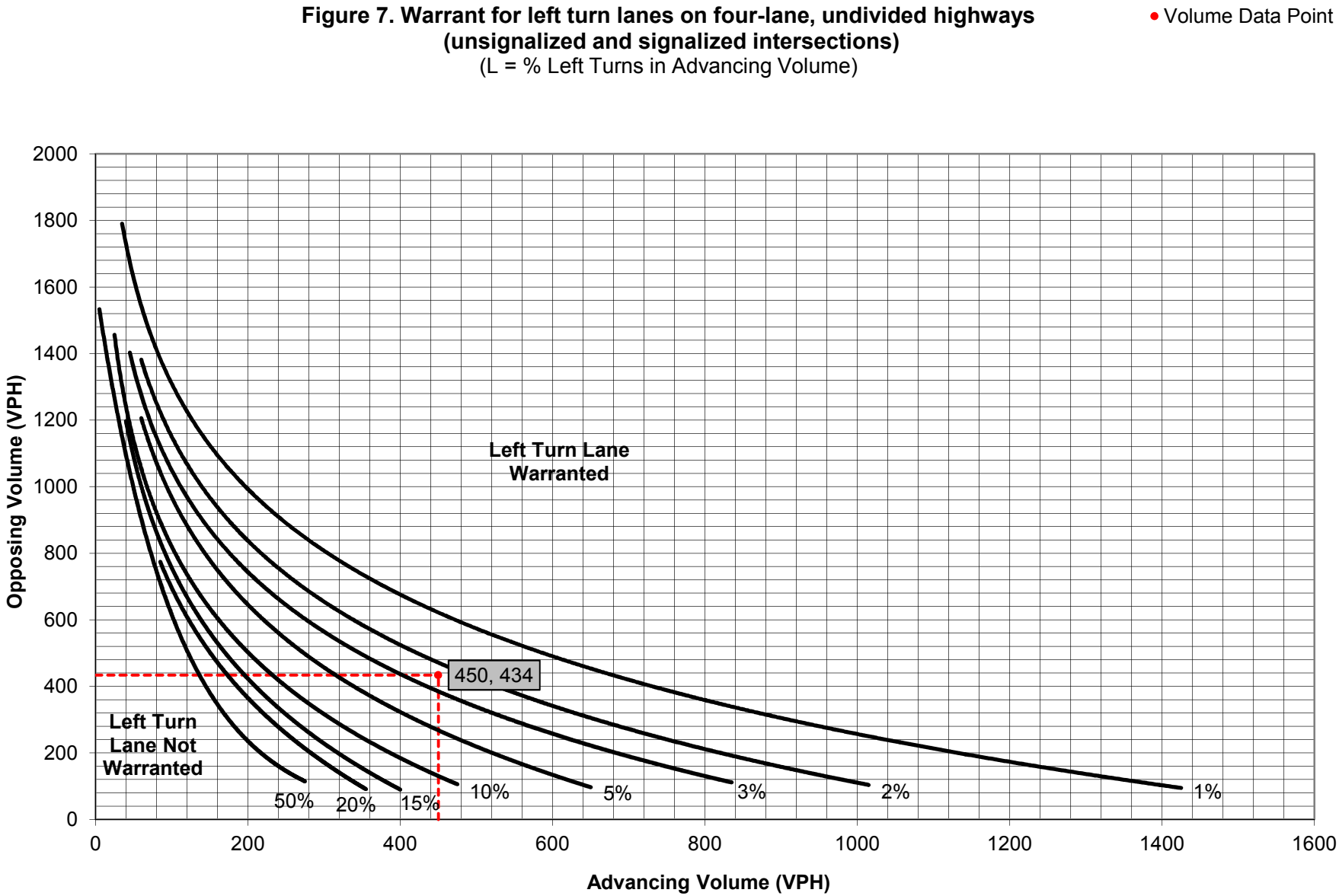
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 3 | 2.0% | N/A |
| | Through | - | 510 | 1.0% | N/A |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 569 | 1.0% | N/A |
| | Right | Yes | 6 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 569 | 1.0% | 572 |
| | Right | - | 6 | 2.0% | 7 |

| | |
|---|---|
| Advancing Volume: | 579 |
| Right Turn Volume: | 7 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 7 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

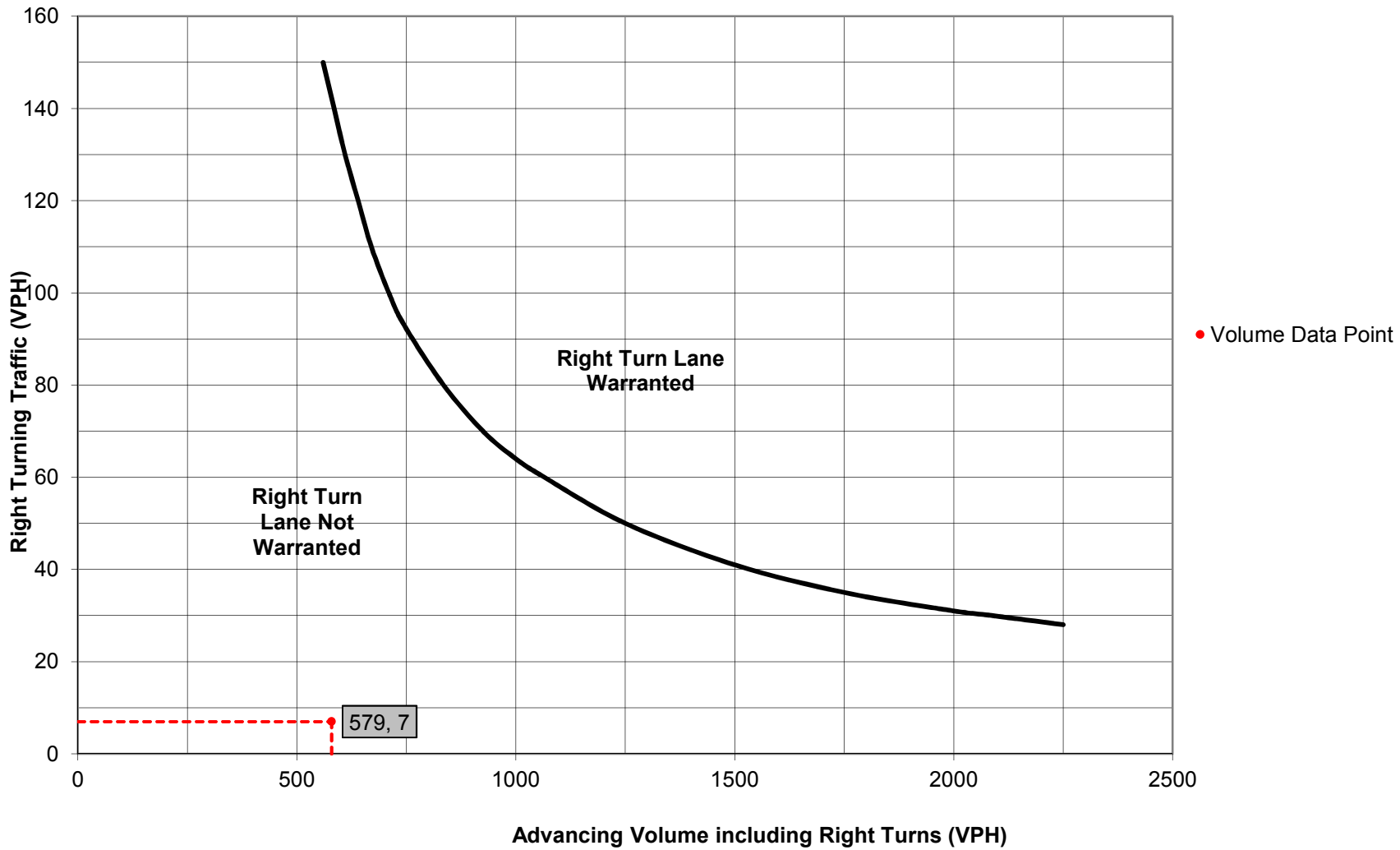
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 3 | 2.0% | 4 |
| | Through | - | 510 | 1.0% | 513 |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 569 | 1.0% | 572 |
| | Right | Yes | 6 | 2.0% | 7 |

| | |
|---|---|
| Advancing Volume: | 517 |
| Opposing Volume: | 579 |
| Left Turn Volume: | 4 |
| % Left Turns in Advancing Volume: | 0.77% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 569 | 1.0% | N/A |
| | Right | - | 6 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 4 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

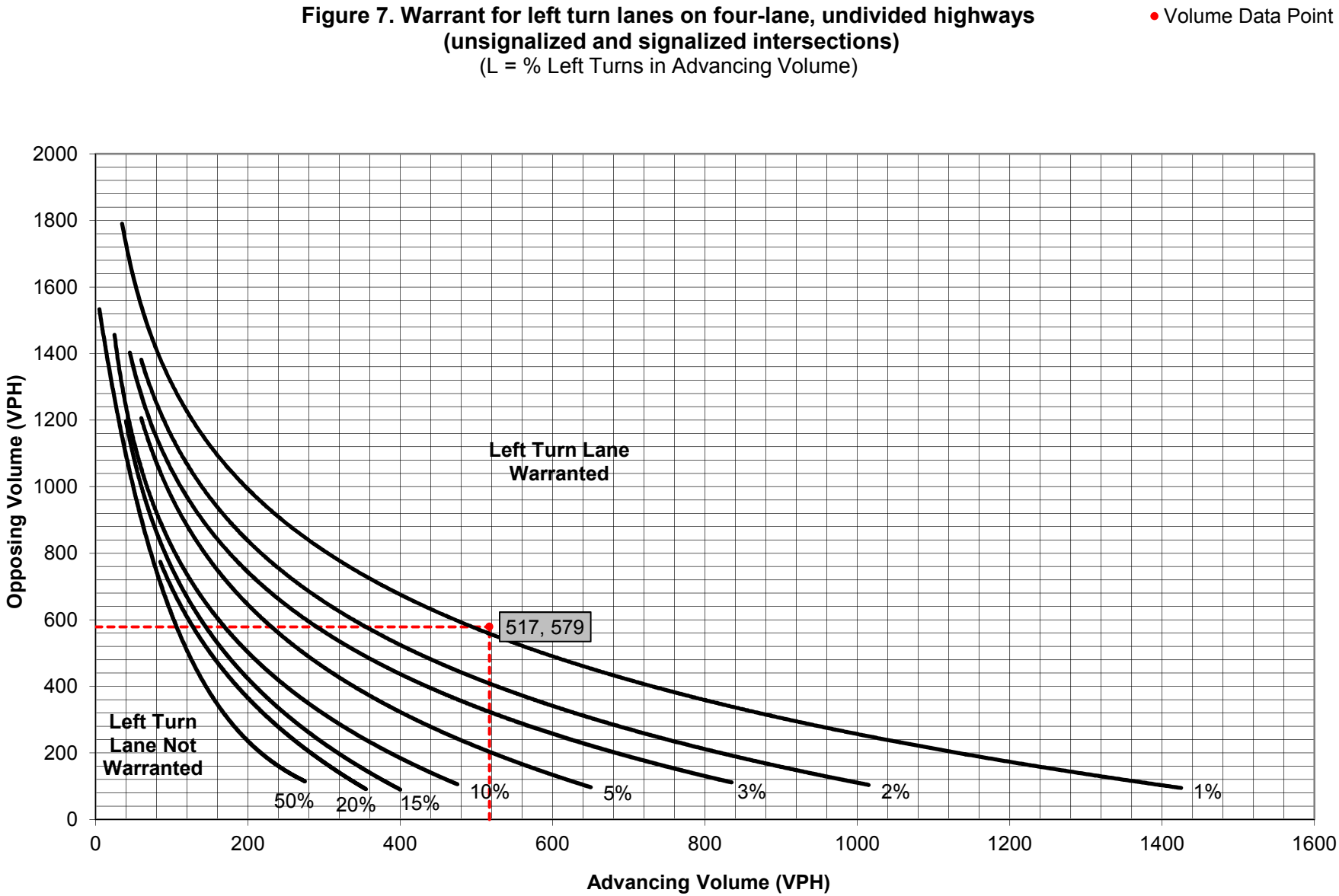
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 2 | 1.0% | N/A |
| | Through | - | 519 | 1.0% | N/A |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 548 | 1.0% | N/A |
| | Right | Yes | 4 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 548 | 1.0% | 551 |
| | Right | - | 4 | 3.0% | 5 |

| | |
|---|---|
| Advancing Volume: | 556 |
| Right Turn Volume: | 5 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 11**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 5 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

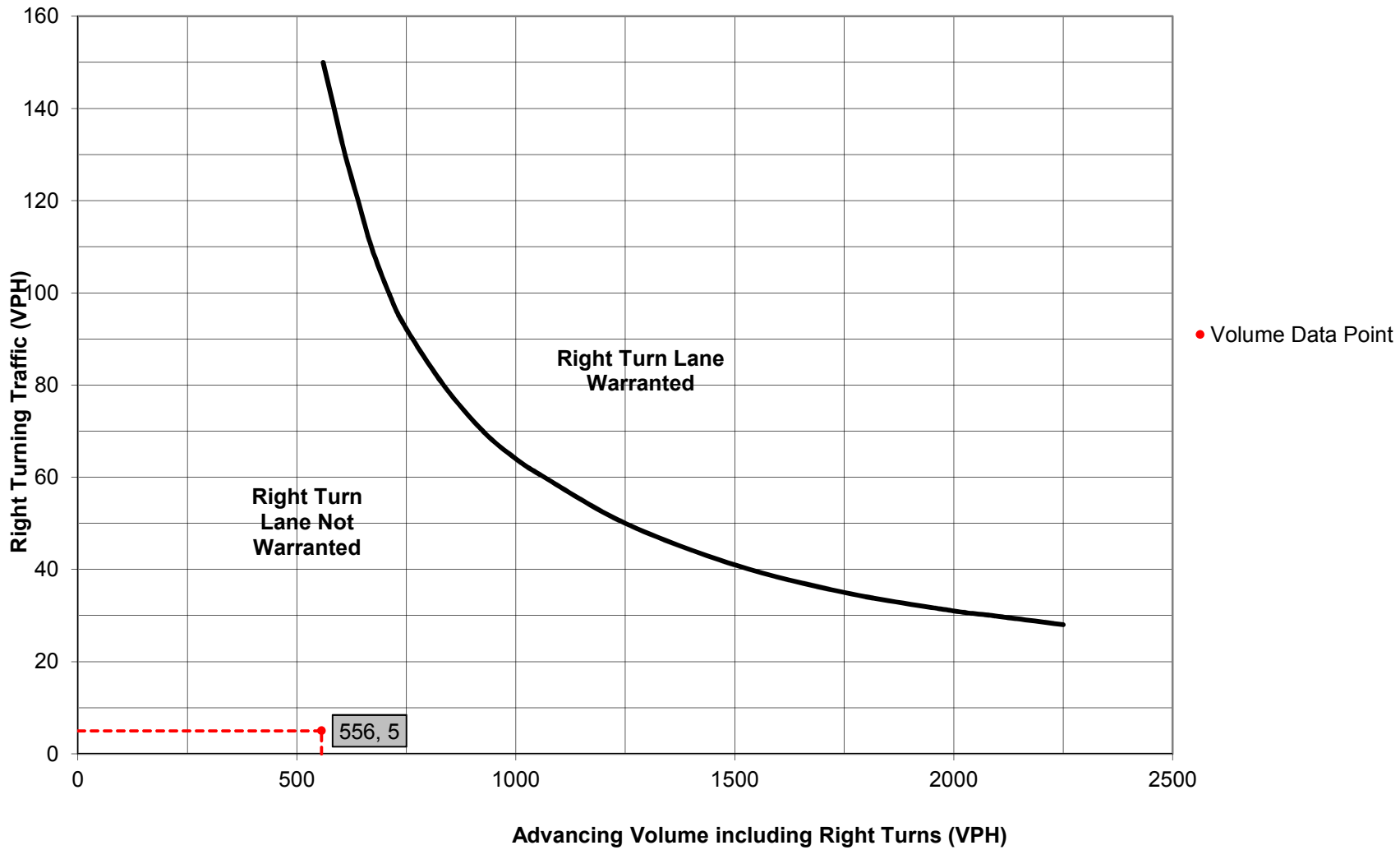
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 11. Warrant for right turn lanes on four-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Eastern Driveway - EBR/WBL

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 2 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 2 | 1.0% | 3 |
| | Through | - | 519 | 1.0% | 522 |
| | Right | No | | | N/A |
| Opposing | Left | No | | | N/A |
| | Through | - | 548 | 1.0% | 551 |
| | Right | Yes | 4 | 3.0% | 5 |

| | |
|---|---|
| Advancing Volume: | 525 |
| Opposing Volume: | 556 |
| Left Turn Volume: | 3 |
| % Left Turns in Advancing Volume: | 0.57% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | | | N/A |
| | Through | - | 548 | 1.0% | N/A |
| | Right | - | 4 | 3.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 7**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 3 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

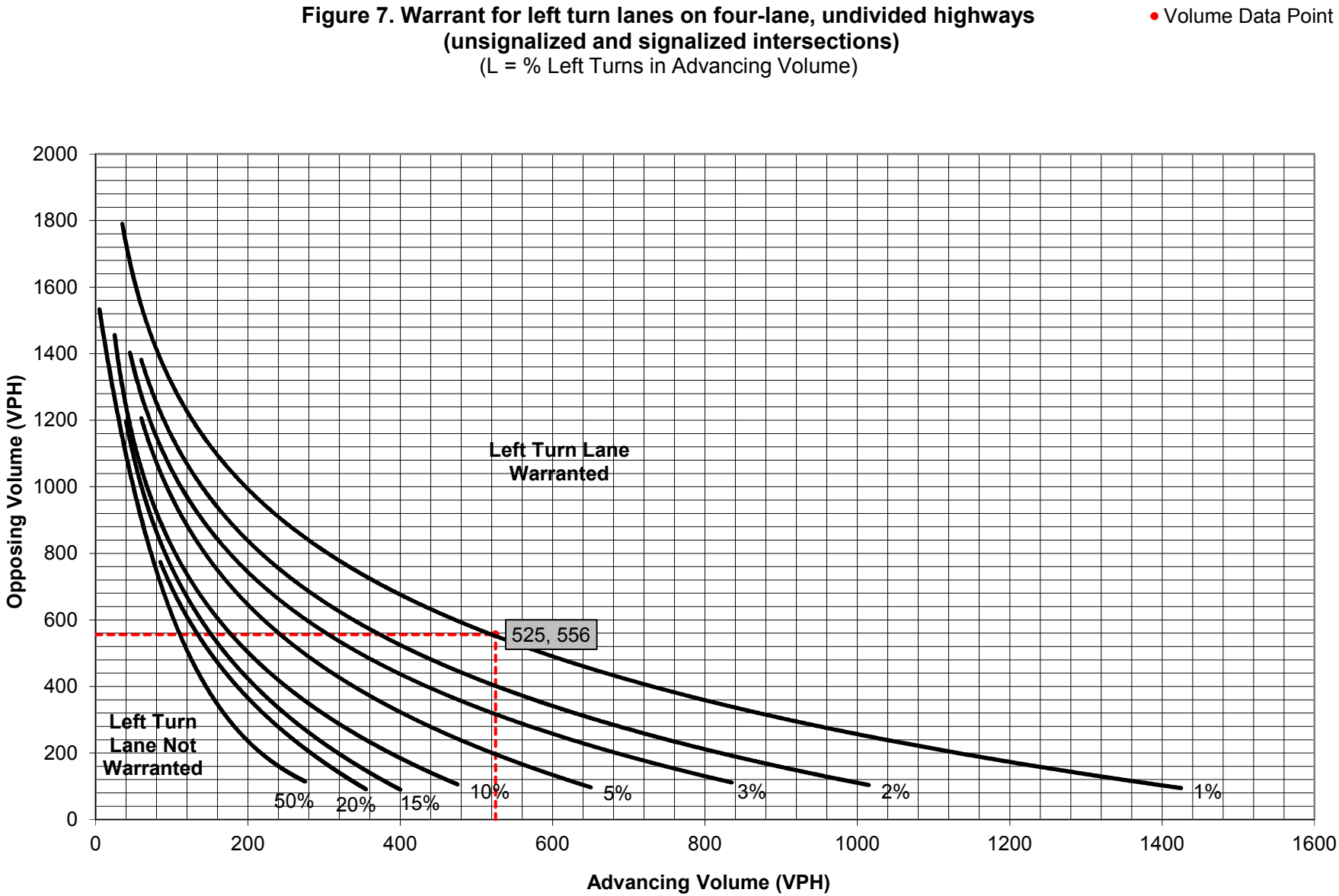
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 7. Warrant for left turn lanes on four-lane, undivided highways (unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



***REED ROAD & CM DRIVEWAY***

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & CM RIRO Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 401 | 1.0% | 404 |
| | Right | - | 9 | 2.0% | 10 |

| | |
|---|---|
| Advancing Volume: | 414 |
| Right Turn Volume: | 10 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 10 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

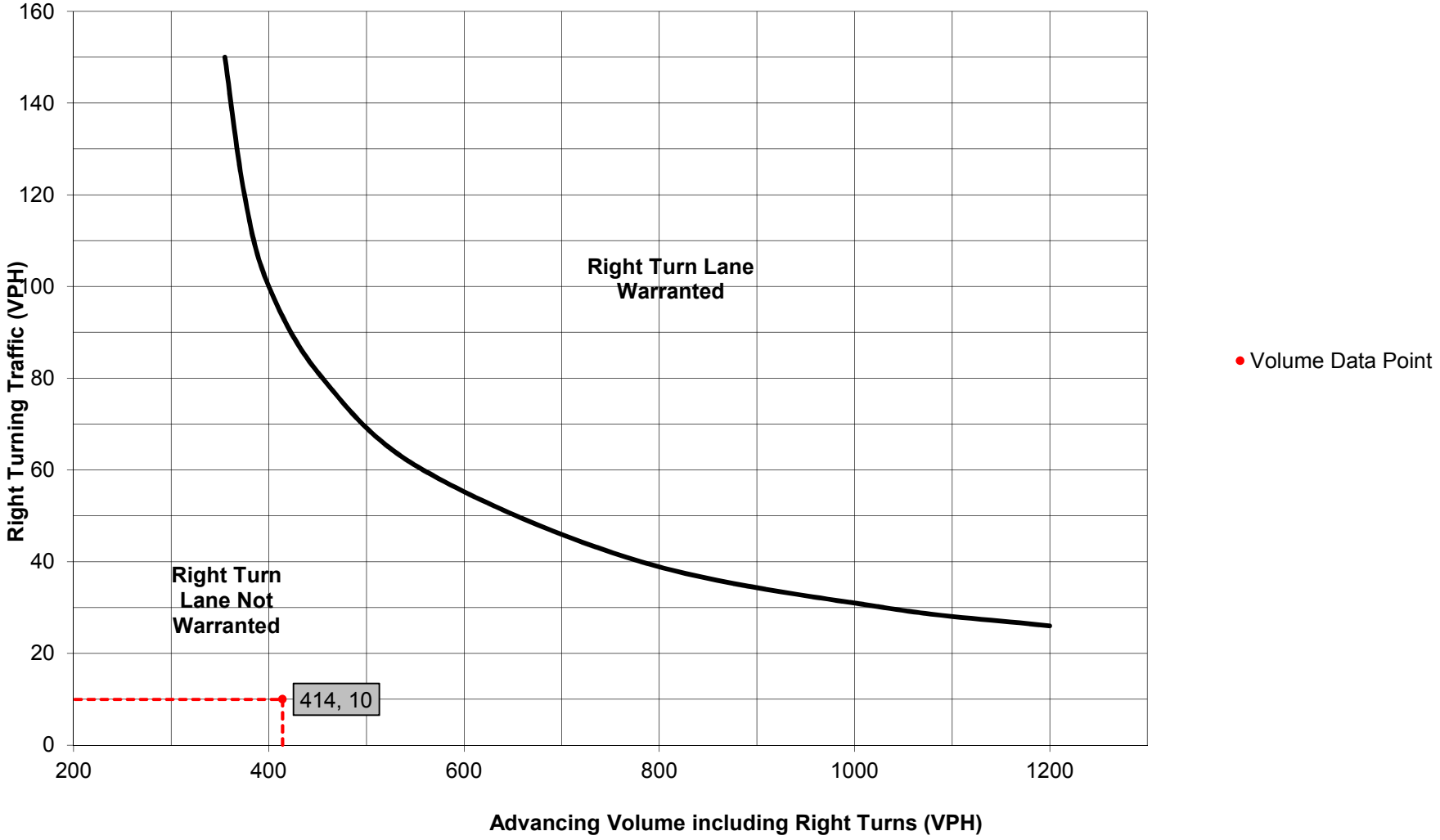
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | **N/A** | Feet |
| Condition B: | **N/A** | Feet |
| Condition C: | **N/A** | Feet |
| Required Right Turn Lane Storage Length: | **N/A** | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & CM RIRO Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 618 | 1.0% | 622 |
| | Right | - | 10 | 2.0% | 11 |

| | |
|---|---|
| Advancing Volume: | 633 |
| Right Turn Volume: | 11 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 11 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

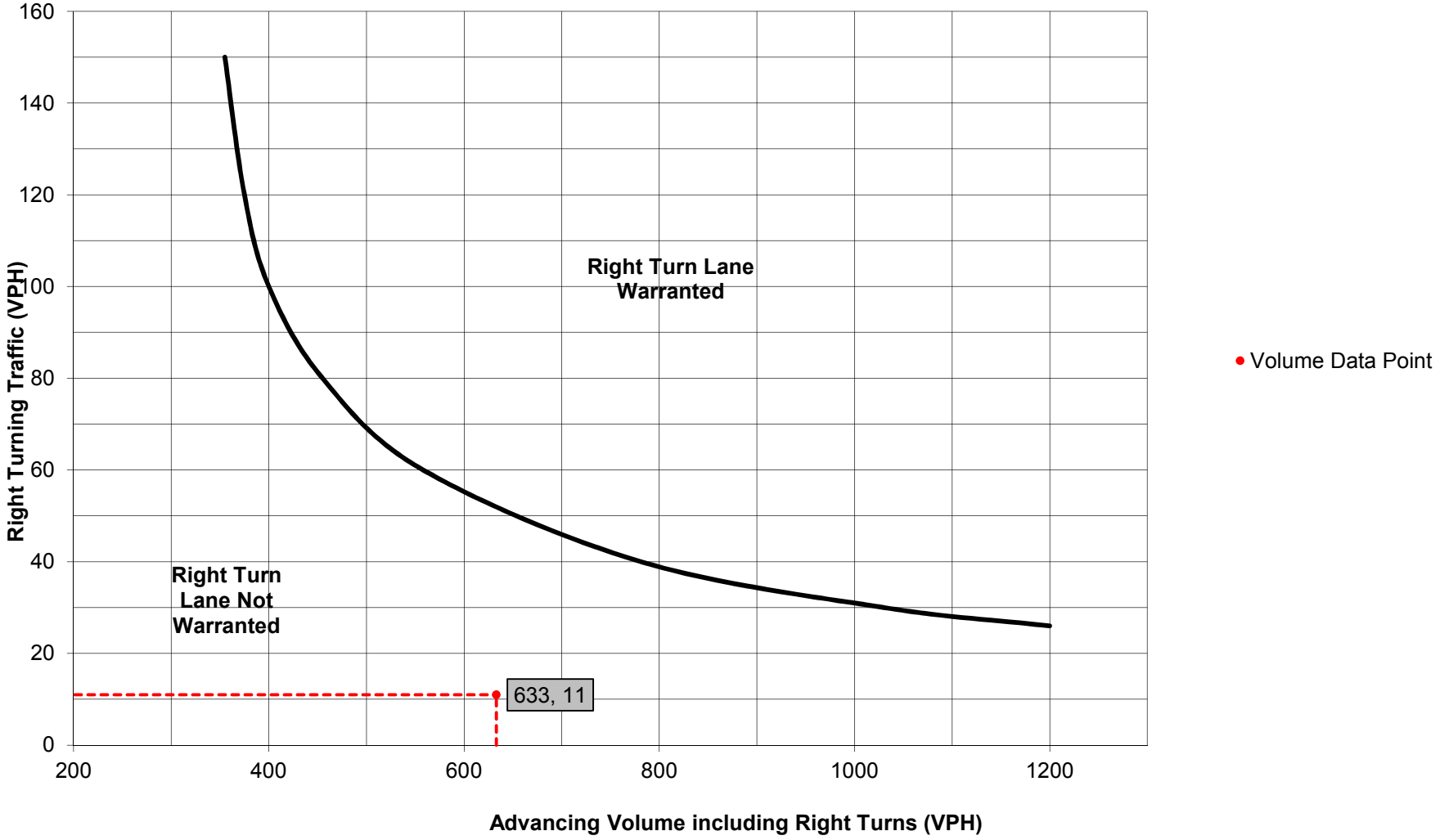
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & CM RIRO Driveway

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 0 | 0.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 557 | 1.0% | 560 |
| | Right | - | 7 | 2.0% | 8 |

| | |
|---|---|
| Advancing Volume: | 568 |
| Right Turn Volume: | 8 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 8 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

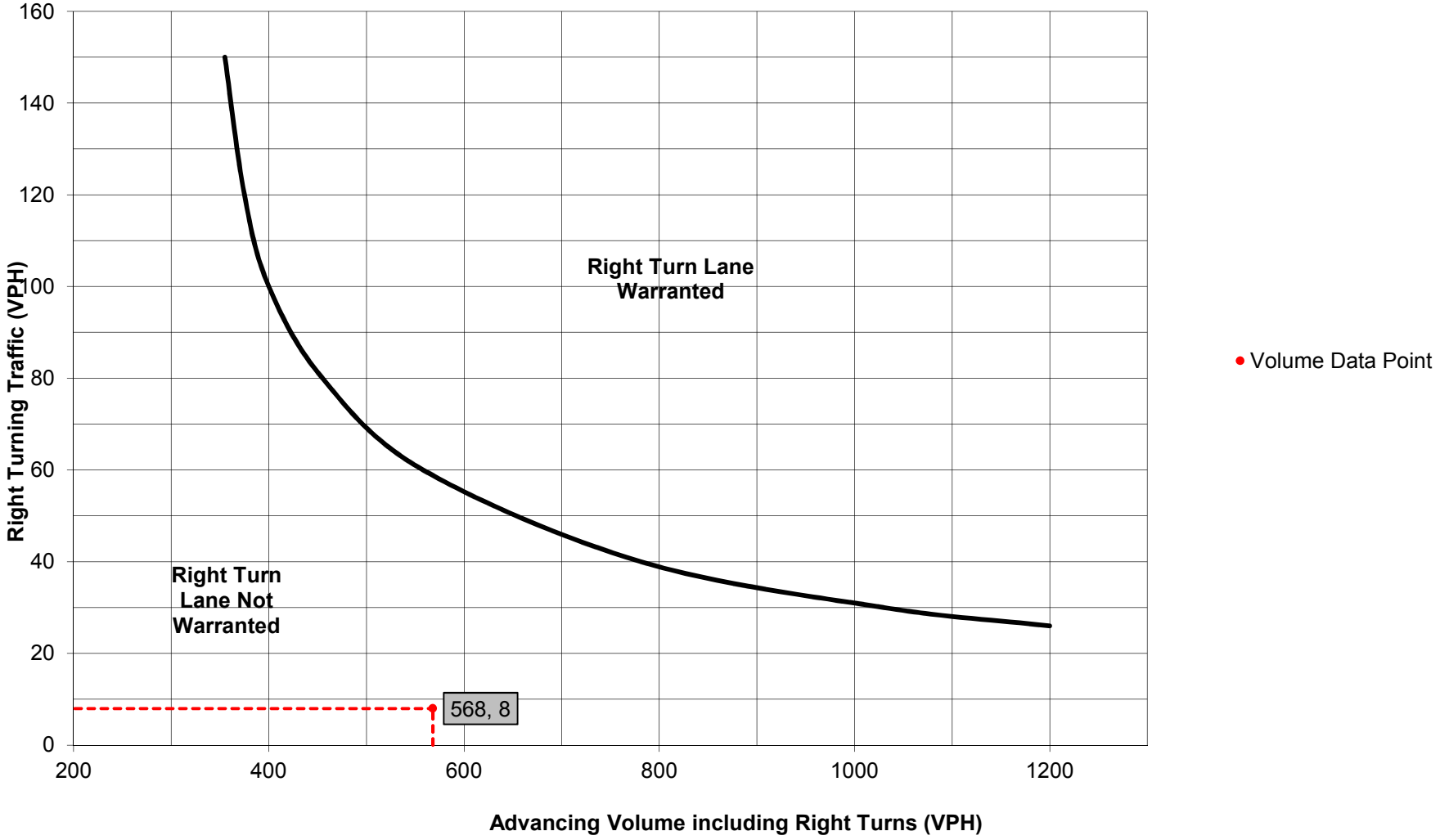
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# *SHOPPING CENTER DRIVEWAY & CM DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 71 | 2.0% | 72 |
| | Through | - | 183 | 2.0% | 185 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 86 | 2.0% | 87 |
| | Right | Yes | 4 | 2.0% | 5 |

| | |
|---|---|
| Advancing Volume: | 257 |
| Opposing Volume: | 92 |
| Left Turn Volume: | 72 |
| % Left Turns in Advancing Volume: | 28.02% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 86 | 2.0% | N/A |
| | Right | - | 4 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | | | |
|---|---|---|---|
| Intersection Control: | Unsignalized | | |
| Design Hour Volume of Turning Lane: | 72 | | |
| Cycles Per Hour (Assumed): | Known | | |
| Cycles Per Hour (If Known): | 60 | Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

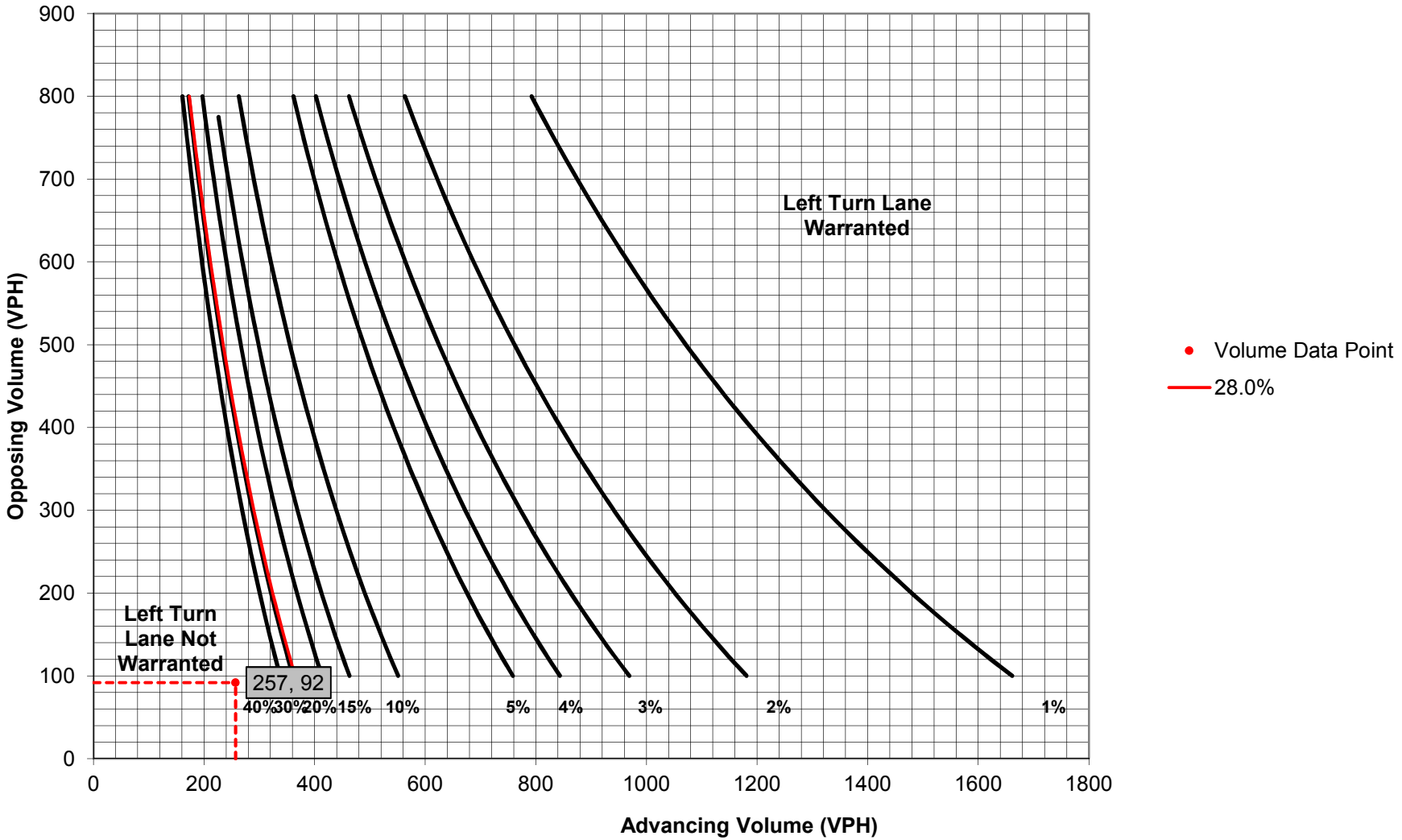
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 71 | 2.0% | N/A |
| | Through | - | 183 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 86 | 2.0% | N/A |
| | Right | Yes | 4 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 86 | 2.0% | 87 |
| | Right | - | 4 | 2.0% | 5 |

| | |
|---|---|
| Advancing Volume: | 92 |
| Right Turn Volume: | 5 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 5 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

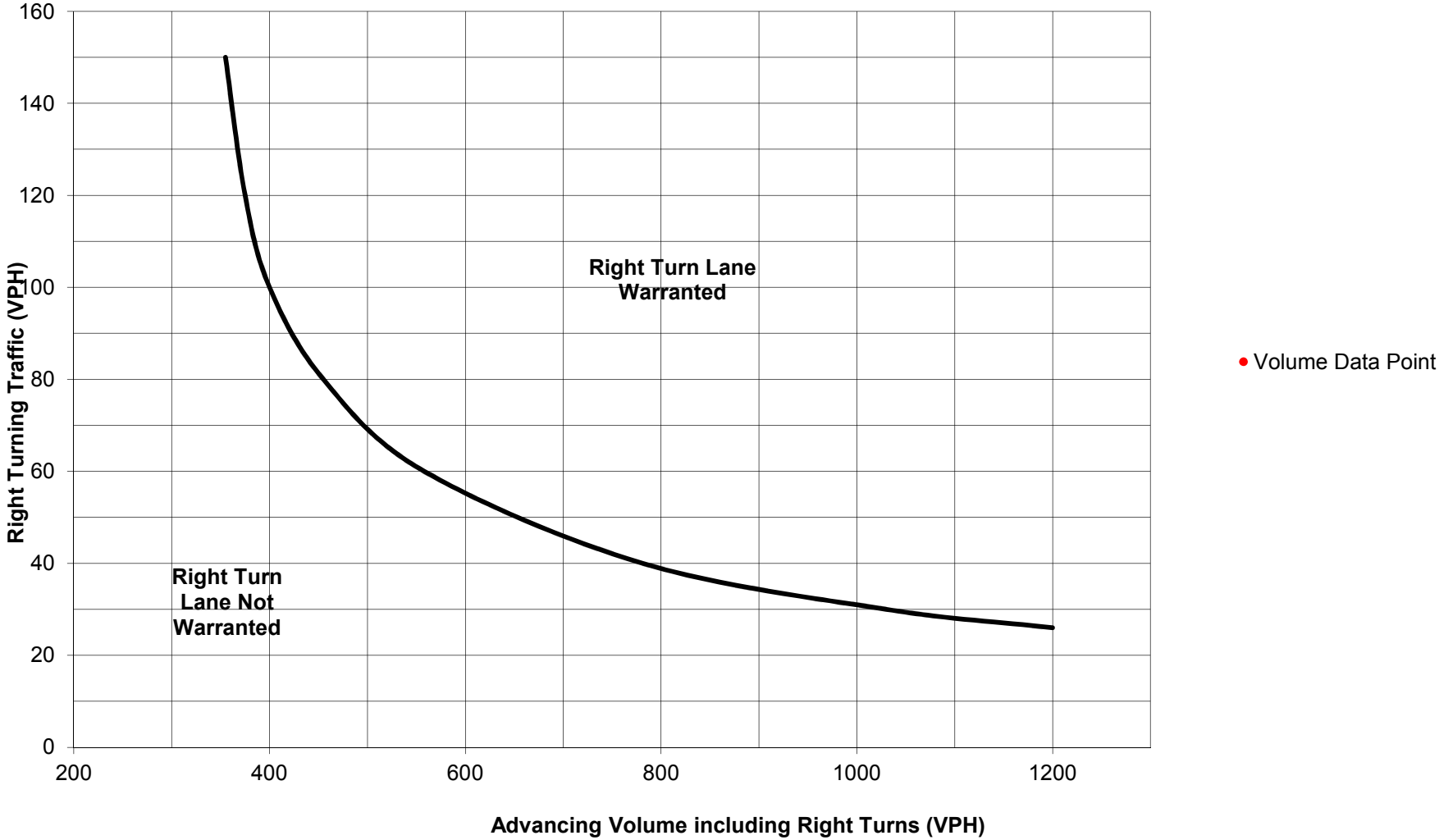
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 99 | 2.0% | 100 |
| | Through | - | 138 | 2.0% | 140 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 62 | 2.0% | 63 |
| | Right | Yes | 5 | 2.0% | 6 |

| | |
|---|---|
| Advancing Volume: | 240 |
| Opposing Volume: | 69 |
| Left Turn Volume: | 100 |
| % Left Turns in Advancing Volume: | 41.67% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 62 | 2.0% | N/A |
| | Right | - | 5 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 100 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

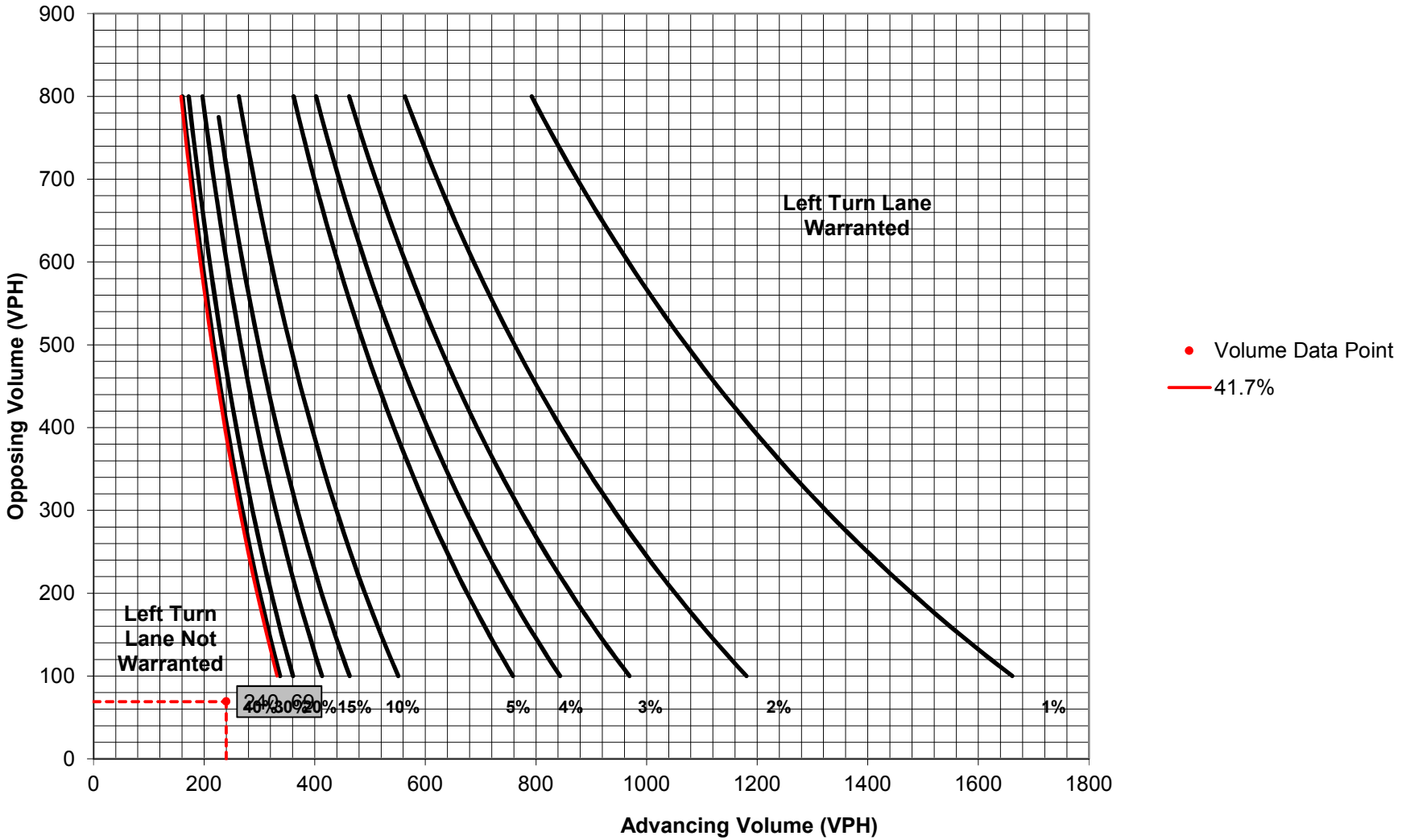
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 99 | 2.0% | N/A |
| | Through | - | 138 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 62 | 2.0% | N/A |
| | Right | Yes | 5 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 62 | 2.0% | 63 |
| | Right | - | 5 | 2.0% | 6 |

| | |
|---|---|
| Advancing Volume: | 69 |
| Right Turn Volume: | 6 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 6 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

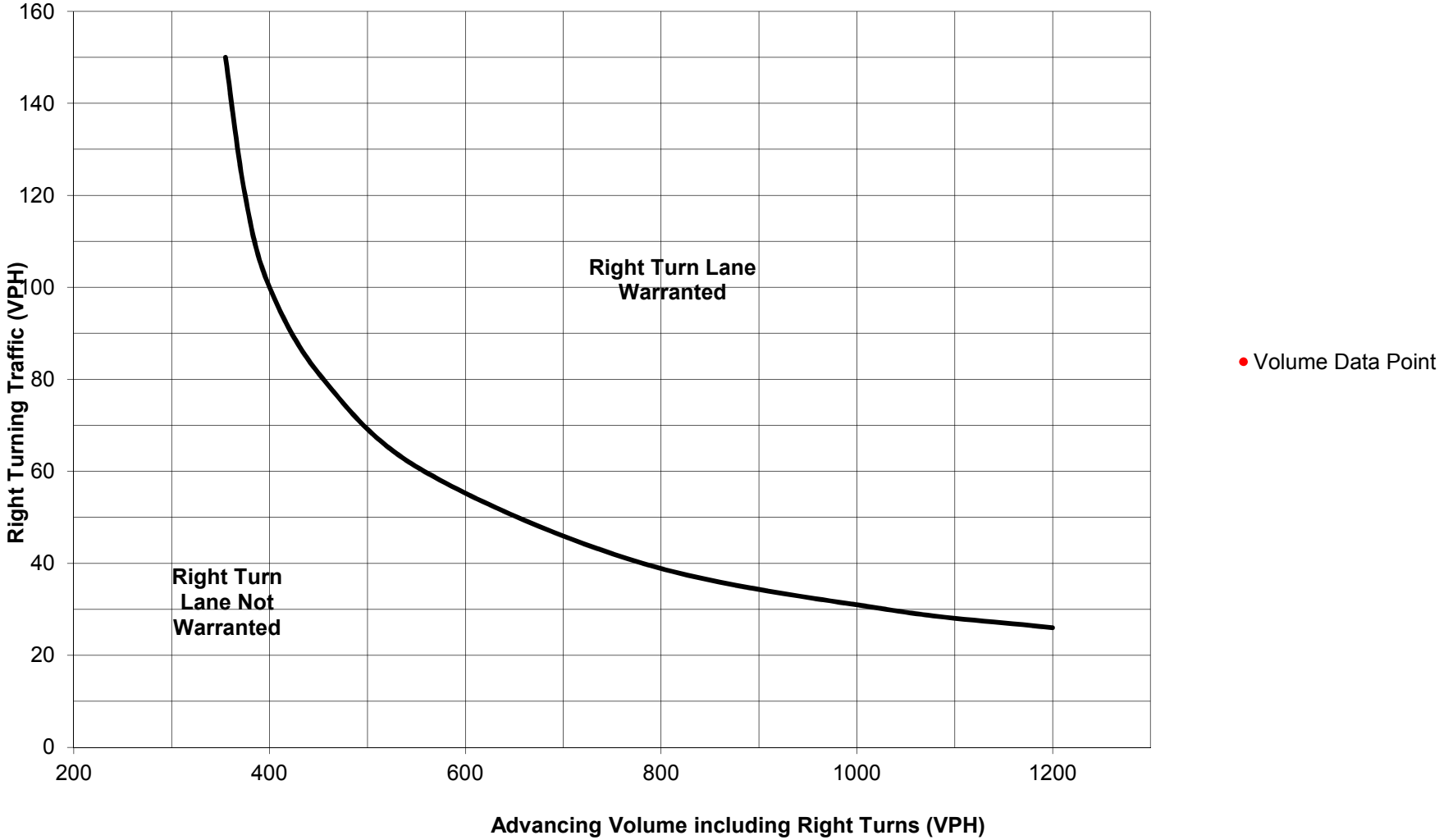
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 2.0% | 50 |
| | Through | - | 351 | 2.0% | 355 |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 199 | 2.0% | 201 |
| | Right | Yes | 2 | 2.0% | 3 |

| | |
|---|---|
| Advancing Volume: | 405 |
| Opposing Volume: | 204 |
| Left Turn Volume: | 50 |
| % Left Turns in Advancing Volume: | 12.35% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 199 | 2.0% | N/A |
| | Right | - | 2 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 50 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)

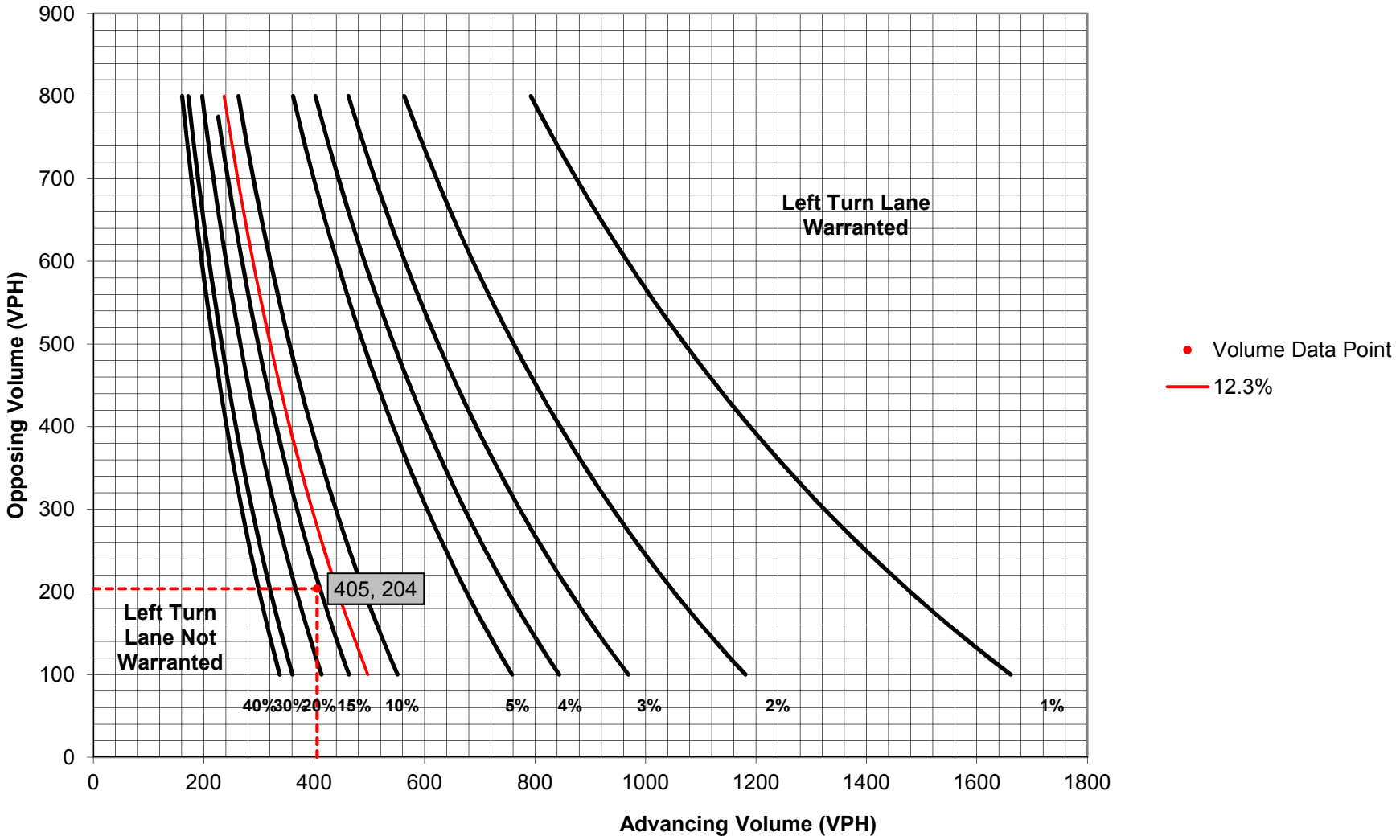
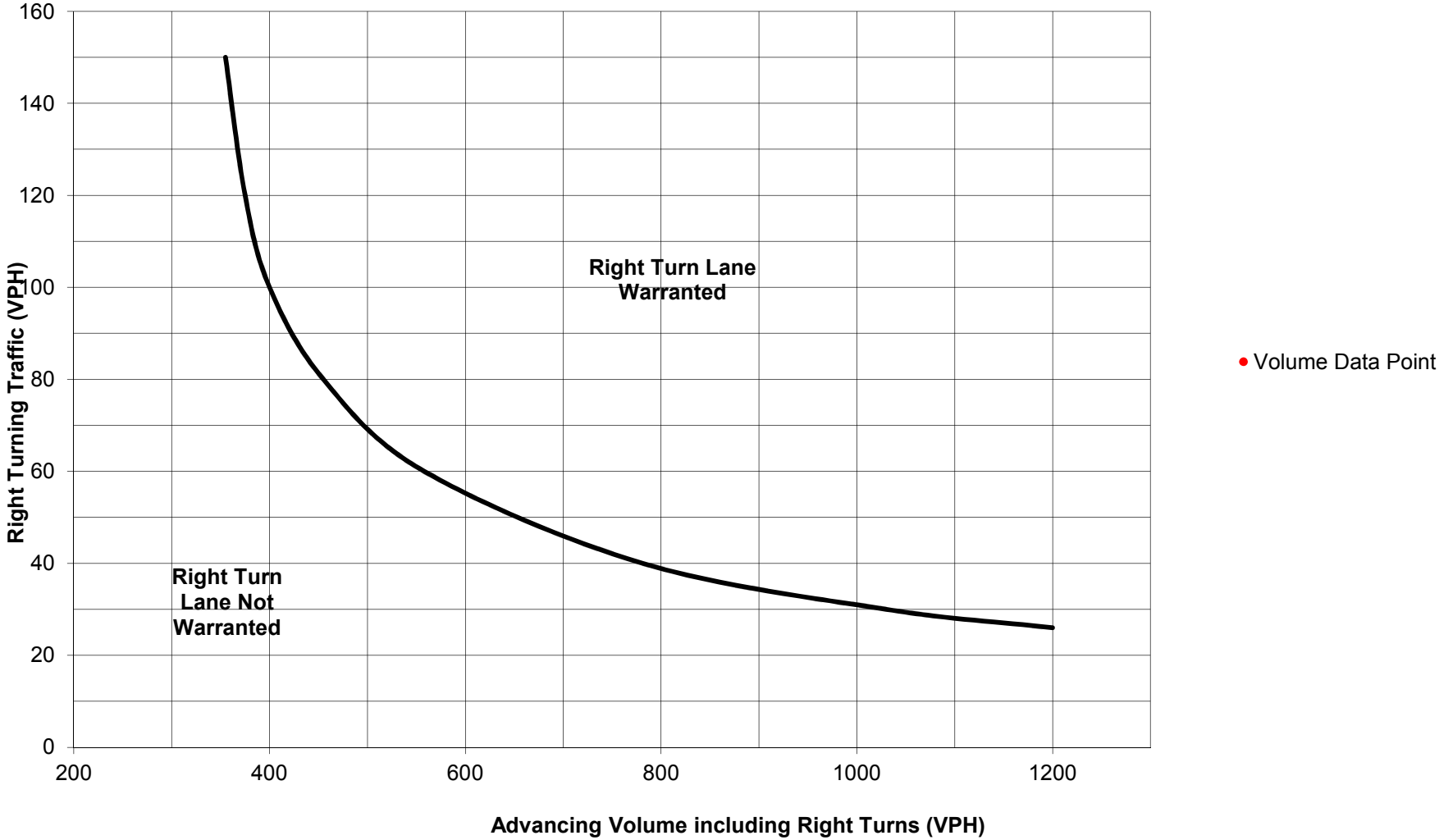


**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/29/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Shopping Center Driveway & CM Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Unsignalized | | |
| Posted Speed Limit (MPH): | 25 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 49 | 2.0% | N/A |
| | Through | - | 351 | 2.0% | N/A |
| | Right | No | 0 | 0.0% | N/A |
| Opposing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 199 | 2.0% | N/A |
| | Right | Yes | 2 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 0 | 0.0% | N/A |
| | Through | - | 199 | 2.0% | 201 |
| | Right | - | 2 | 2.0% | 3 |

| | |
|---|---|
| Advancing Volume: | 204 |
| Right Turn Volume: | 3 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Unsignalized |
| Design Hour Volume of Turning Lane: | 3 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 60 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

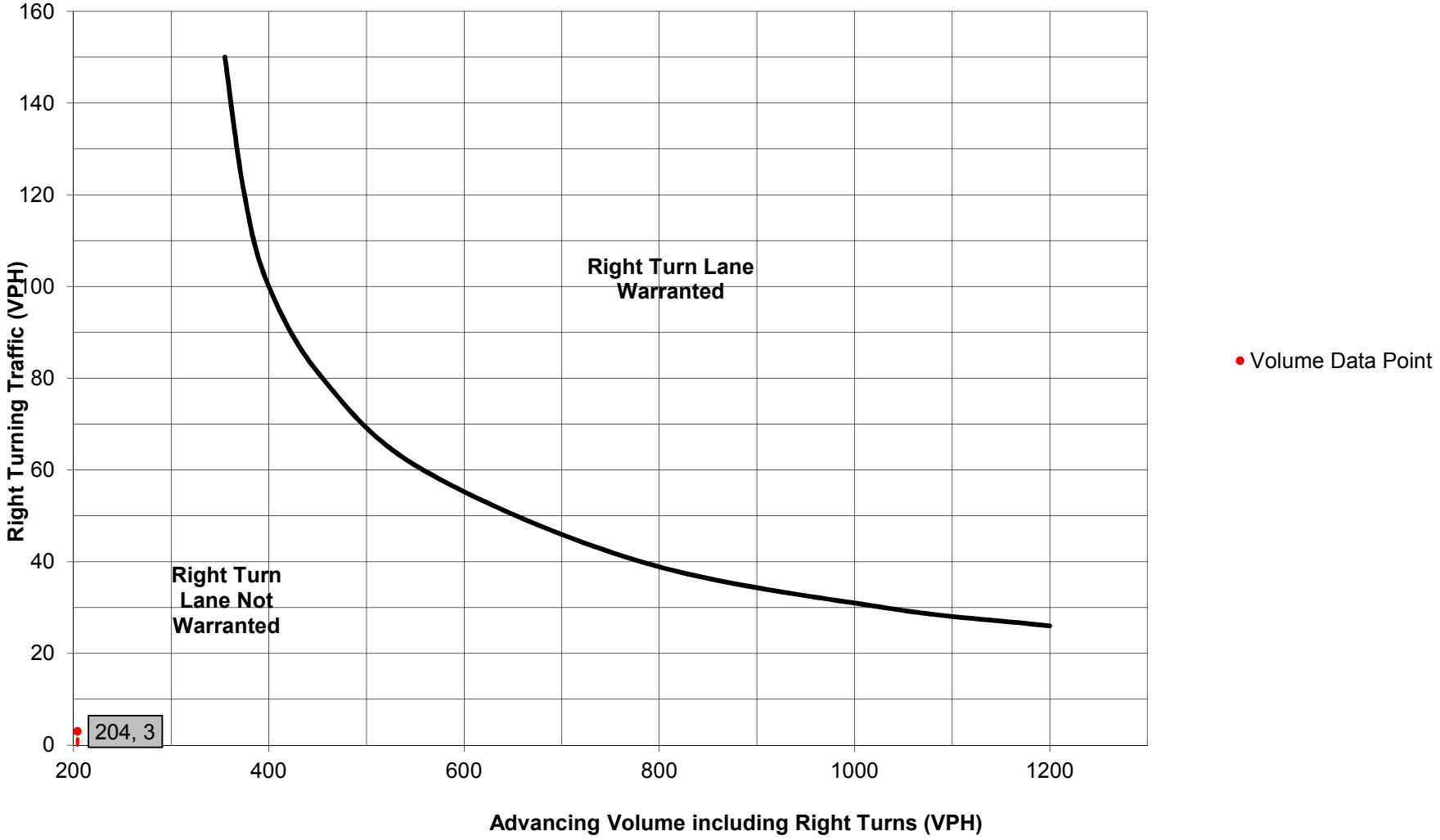
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



## *REED ROAD & MARPIT DRIVE/PROPOSED DRIVEWAY*

# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 37 | 2.0% | 38 |
| | Through | - | 1084 | 1.0% | 1090 |
| | Right | No | 224 | 6.0% | N/A |
| Opposing | Left | No | 45 | 19.0% | N/A |
| | Through | - | 240 | 7.0% | 249 |
| | Right | Yes | 11 | 2.0% | 12 |

| | |
|---|---|
| Advancing Volume: | 1128 |
| Opposing Volume: | 261 |
| Left Turn Volume: | 38 |
| % Left Turns in Advancing Volume: | 3.37% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 45 | 19.0% | N/A |
| | Through | - | 240 | 7.0% | N/A |
| | Right | - | 11 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 38 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |
| Average # of Vehicles/Cycle: | 1.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

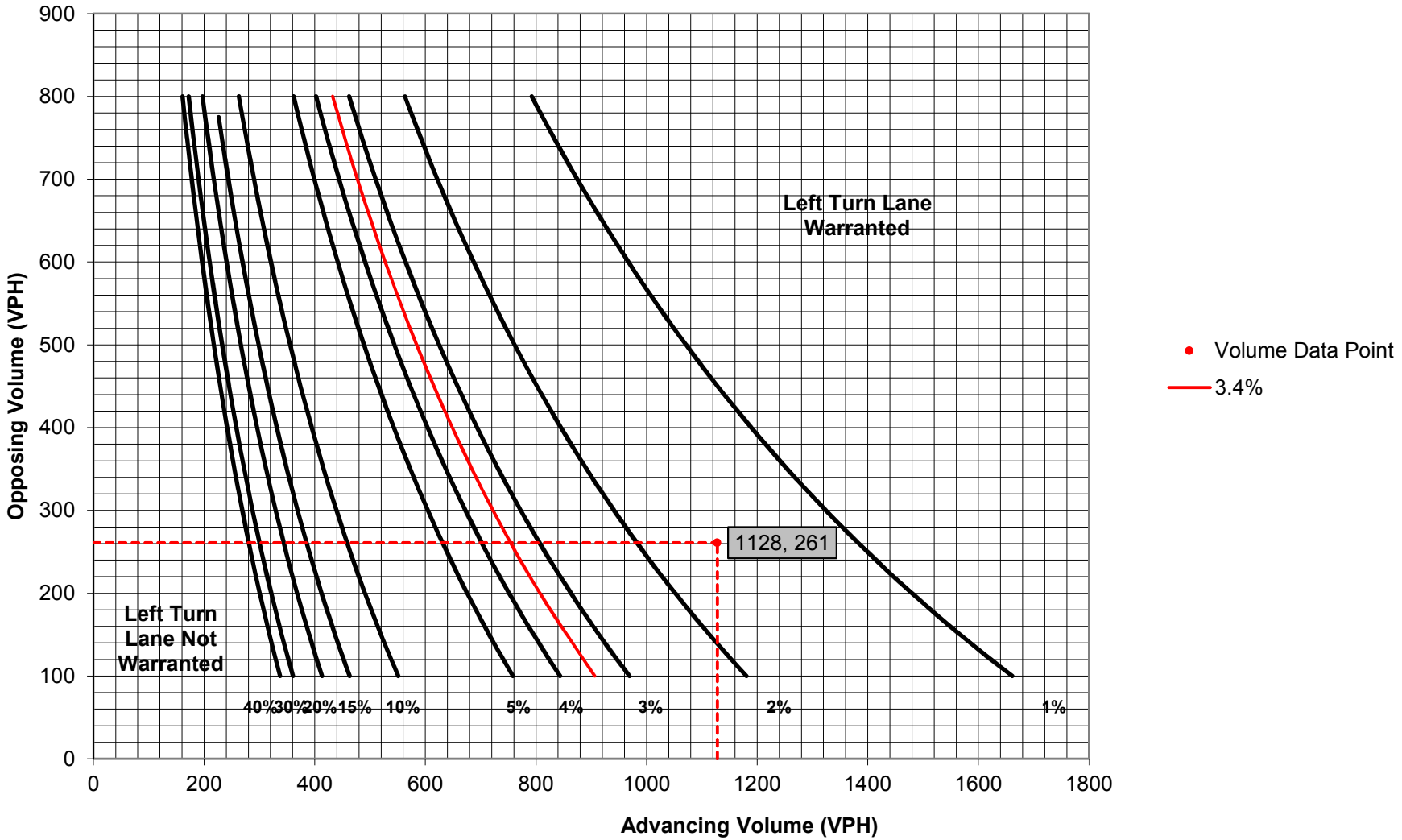
| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 75 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways**
**(speeds to 35 mph, unsignalized and signalized intersections)**
(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | AM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 37 | 2.0% | N/A |
| | Through | - | 1084 | 1.0% | N/A |
| | Right | No | 224 | 6.0% | N/A |
| Opposing | Left | No | 45 | 19.0% | N/A |
| | Through | - | 240 | 7.0% | N/A |
| | Right | Yes | 11 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 45 | 19.0% | N/A |
| | Through | - | 240 | 7.0% | 249 |
| | Right | - | 11 | 2.0% | 12 |

| | |
|---|---|
| Advancing Volume: | 261 |
| Right Turn Volume: | 12 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 12 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |
| Average # of Vehicles/Cycle: | N/A |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

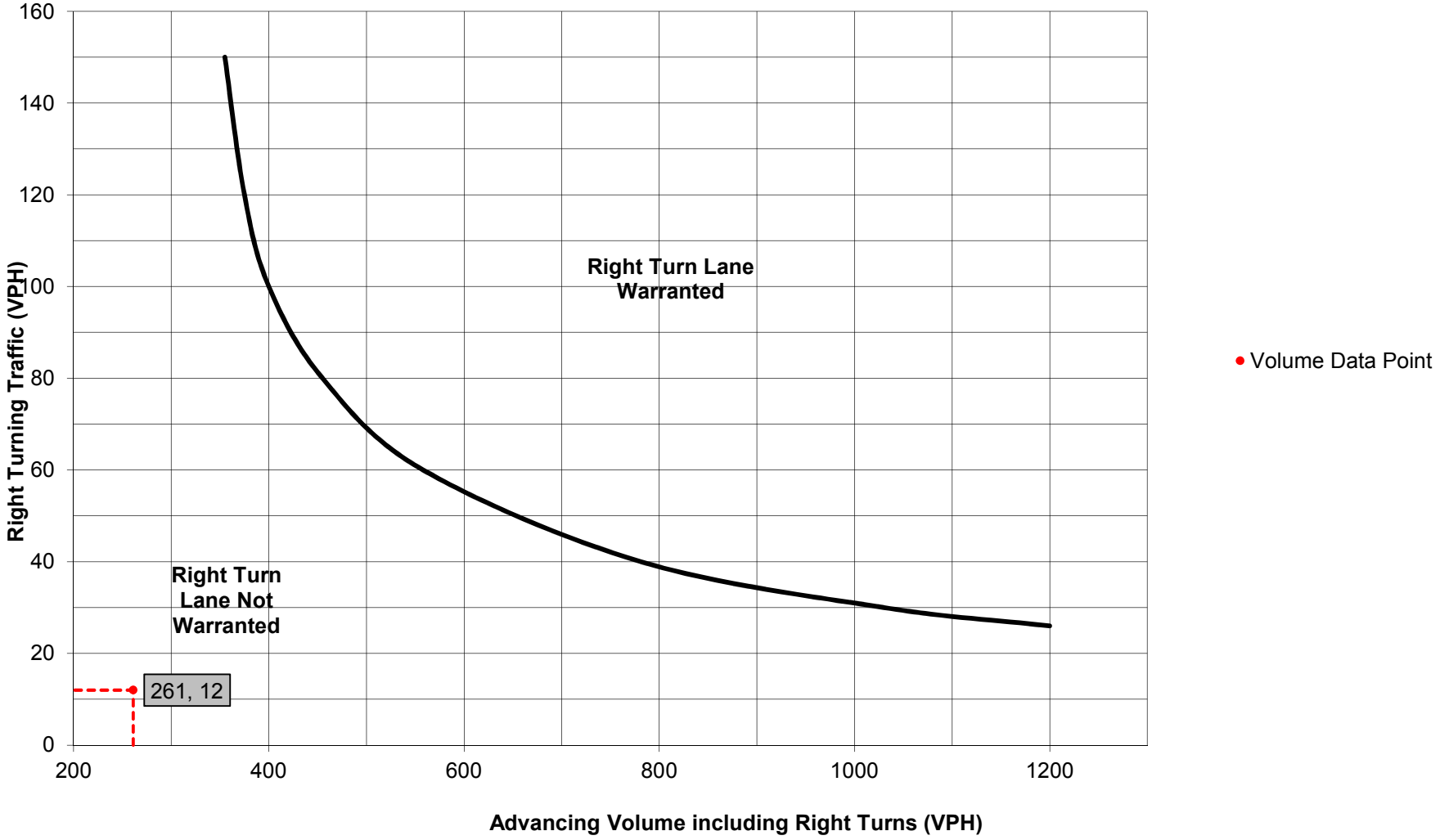
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 75 | 2.0% | 76 |
| | Through | - | 455 | 2.0% | 460 |
| | Right | No | 122 | 1.0% | N/A |
| Opposing | Left | No | 42 | 15.0% | N/A |
| | Through | - | 828 | 1.0% | 833 |
| | Right | Yes | 49 | 2.0% | 50 |

| | |
|---|---|
| Advancing Volume: | 536 |
| Opposing Volume: | 883 |
| Left Turn Volume: | 76 |
| % Left Turns in Advancing Volume: | 14.18% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 42 | 15.0% | N/A |
| | Through | - | 828 | 1.0% | N/A |
| | Right | - | 49 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 76 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |

Average # of Vehicles/Cycle: 2.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 100 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 100 | Feet |

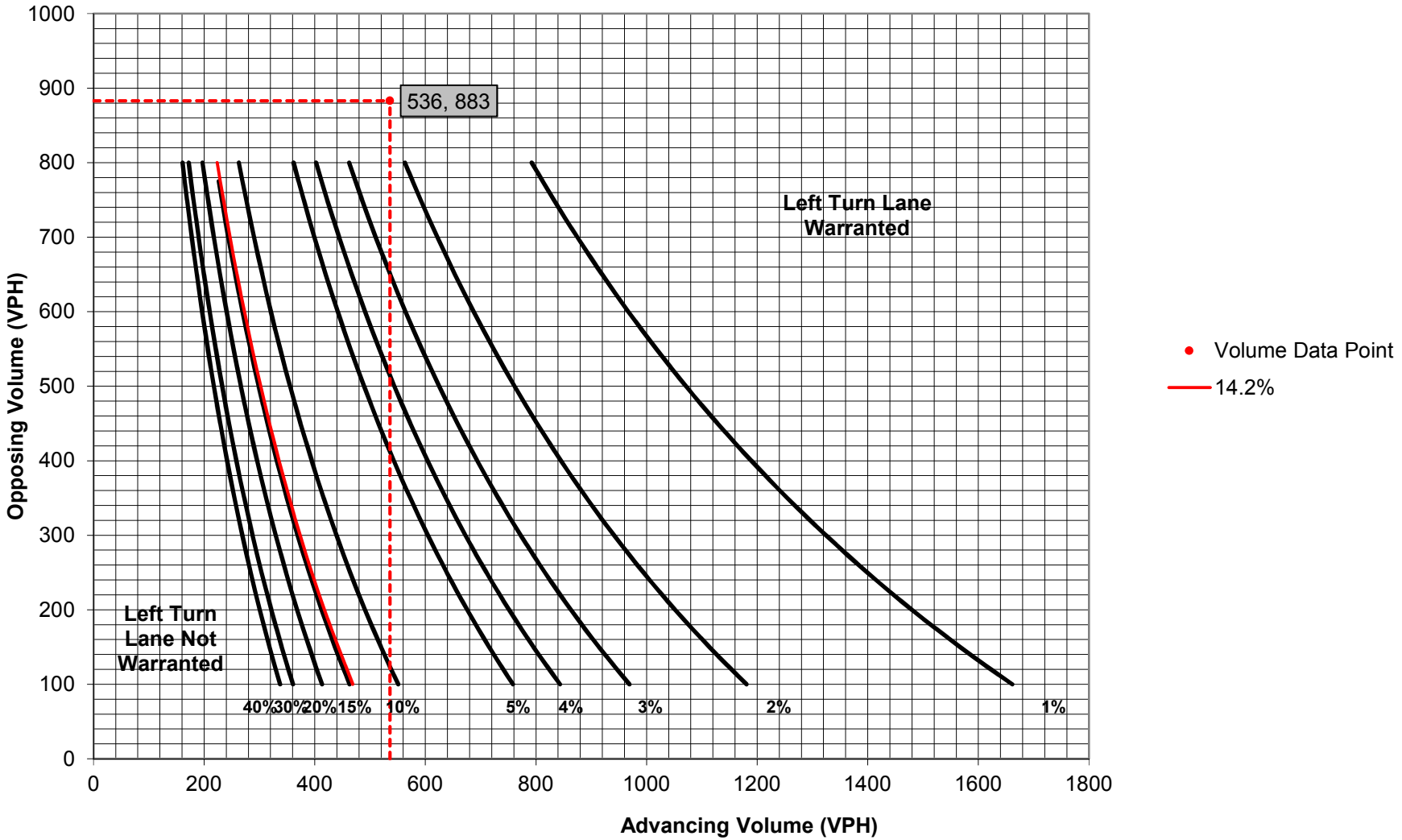
Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)**

(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | PM Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 75 | 2.0% | N/A |
| | Through | - | 455 | 2.0% | N/A |
| | Right | No | 122 | 1.0% | N/A |
| Opposing | Left | No | 42 | 15.0% | N/A |
| | Through | - | 828 | 1.0% | N/A |
| | Right | Yes | 49 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 42 | 15.0% | N/A |
| | Through | - | 828 | 1.0% | 833 |
| | Right | - | 49 | 2.0% | 50 |

| | |
|---|---|
| Advancing Volume: | 883 |
| Right Turn Volume: | 50 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **Yes**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 50 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

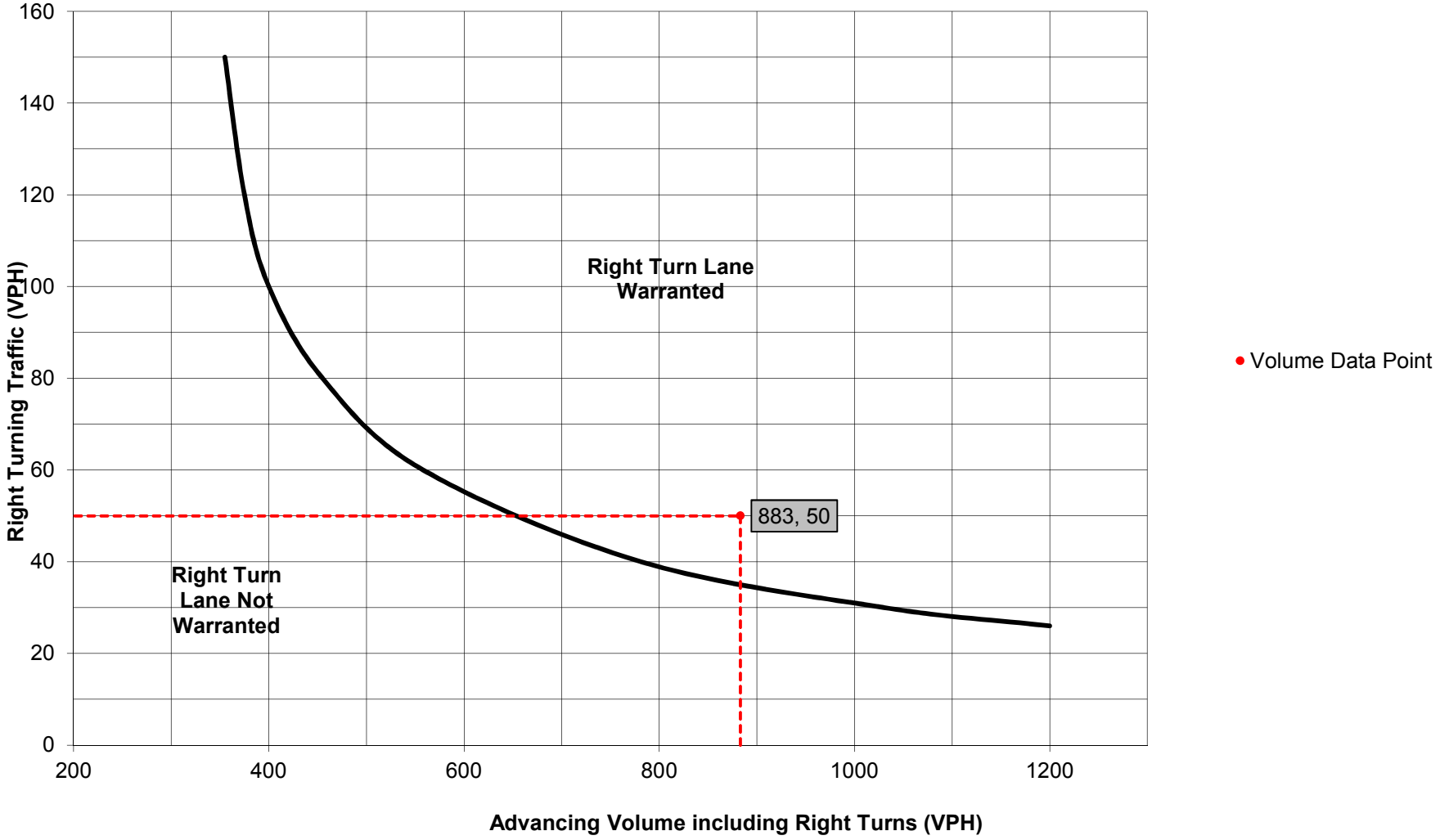
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | 75 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | 75 | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Left Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 109 | 2.0% | 111 |
| | Through | - | 394 | 1.0% | 396 |
| | Right | No | 143 | 3.0% | N/A |
| Opposing | Left | No | 85 | 1.0% | N/A |
| | Through | - | 470 | 1.0% | 473 |
| | Right | Yes | 55 | 2.0% | 56 |

| | |
|---|---|
| Advancing Volume: | 507 |
| Opposing Volume: | 529 |
| Left Turn Volume: | 111 |
| % Left Turns in Advancing Volume: | 21.89% |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 85 | 1.0% | N/A |
| | Through | - | 470 | 1.0% | N/A |
| | Right | - | 55 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Right Turn Volume: | N/A |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 111 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |
| Average # of Vehicles/Cycle: | 2.0 |

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

| | | |
|---|---|---|
| Left Turn Lane Storage Length, Condition A: | 100 | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Left Turn Lane Storage Length: | 100 | Feet |

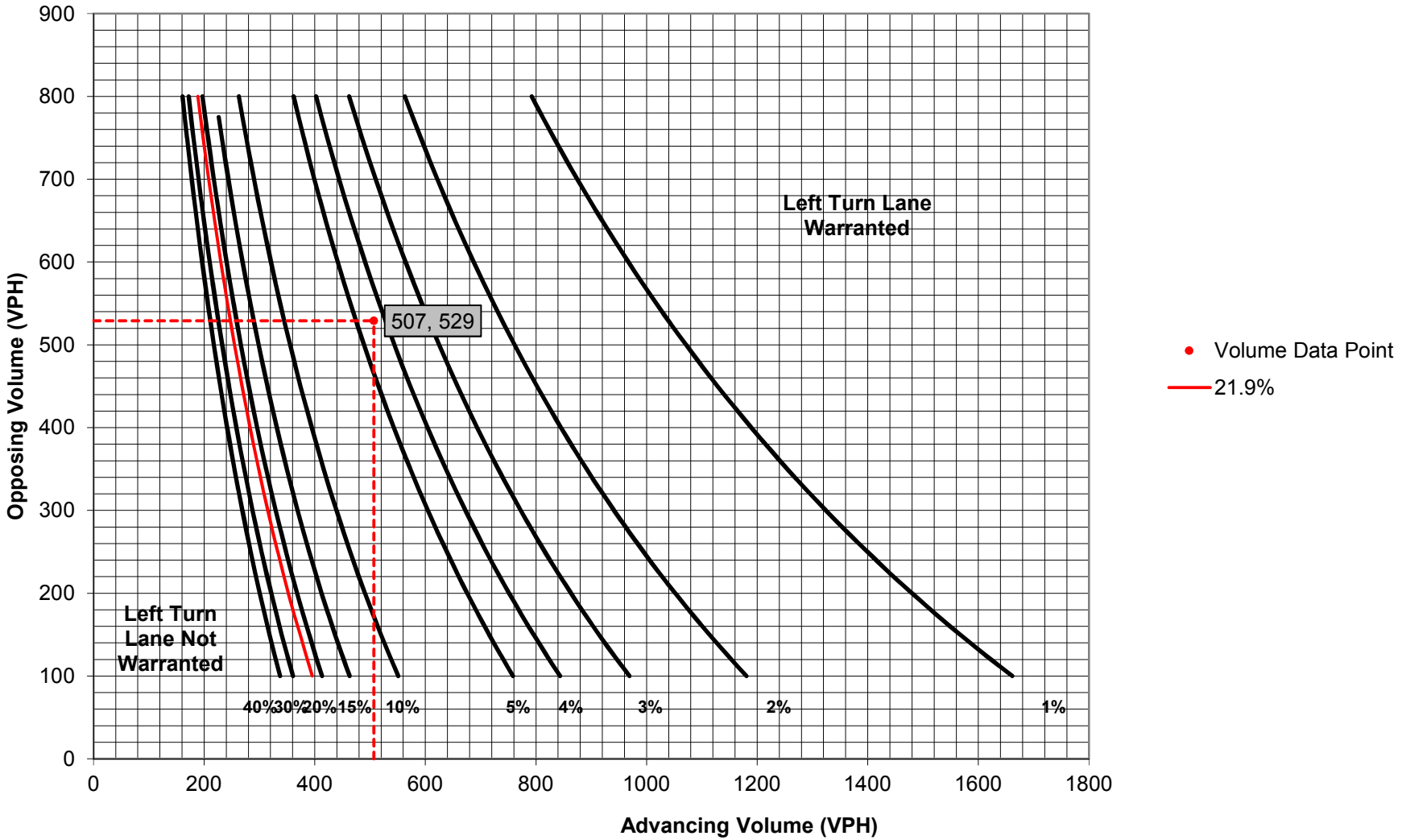
Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)**

(L = % Left Turns in Advancing Volume)



# Turn Lane Warrant and Length Analysis Workbook

## STUDY LOCATION AND ANALYSIS INFORMATION

| | | | |
|---|---|---|---|
| Municipality: | Marple Township | Analysis Date: | 9/9/2015 |
| County: | Delaware County | Conducted By: | MB |
| PennDOT Engineering District: | 6 | Checked By: | MB |
| | | Agency/Company Name: | TPD |

Intersection & Approach Description: Reed Road & Marpit/Driveway - NBL/SBR

| | | | |
|---|---|---|---|
| Analysis Period: | 2025 Projected Conditions | Number of Approach Lanes: | 1 |
| Design Hour: | SAT Peak Hour | Undivided or Divided Highway: | Undivided |
| Intersection Control: | Signalized | | |
| Posted Speed Limit (MPH): | 35 | | Type of Analysis |
| Type of Terrain: | Level | Left or Right-Turn Lane Analysis?: | Right Turn Lane |

## VOLUME CALCULATIONS

### Left Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | Yes | 109 | 2.0% | N/A |
| | Through | - | 394 | 1.0% | N/A |
| | Right | No | 143 | 3.0% | N/A |
| Opposing | Left | No | 85 | 1.0% | N/A |
| | Through | - | 470 | 1.0% | N/A |
| | Right | Yes | 55 | 2.0% | N/A |

| | |
|---|---|
| Advancing Volume: | N/A |
| Opposing Volume: | N/A |
| Left Turn Volume: | N/A |
| % Left Turns in Advancing Volume: | N/A |

### Right Turn Lane Volume Calculations

| Movement | | Include? | Volume | % Trucks | PCEV |
|---|---|---|---|---|---|
| Advancing | Left | No | 85 | 1.0% | N/A |
| | Through | - | 470 | 1.0% | 473 |
| | Right | - | 55 | 2.0% | 56 |

| | |
|---|---|
| Advancing Volume: | 529 |
| Right Turn Volume: | 56 |

## TURN LANE WARRANT FINDINGS

### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 9**

Warrant Met?: **No**

## TURN LANE LENGTH CALCULATIONS

| | |
|---|---|
| Intersection Control: | Signalized |
| Design Hour Volume of Turning Lane: | 56 |
| Cycles Per Hour (Assumed): | Known |
| Cycles Per Hour (If Known): | 48 |

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

| Type of Traffic Control | Speed (MPH) | | | | | |
|---|---|---|---|---|---|---|
| | 25-35 | | 40-45 | | 50-60 | |
| | Turn Demand Volume | | | | | |
| | High | Low | High | Low | High | Low |
| Signalized | A | A | B or C | B or C | B or C | B or C |
| Unsignalized | A | A | C | B | B or C | B |

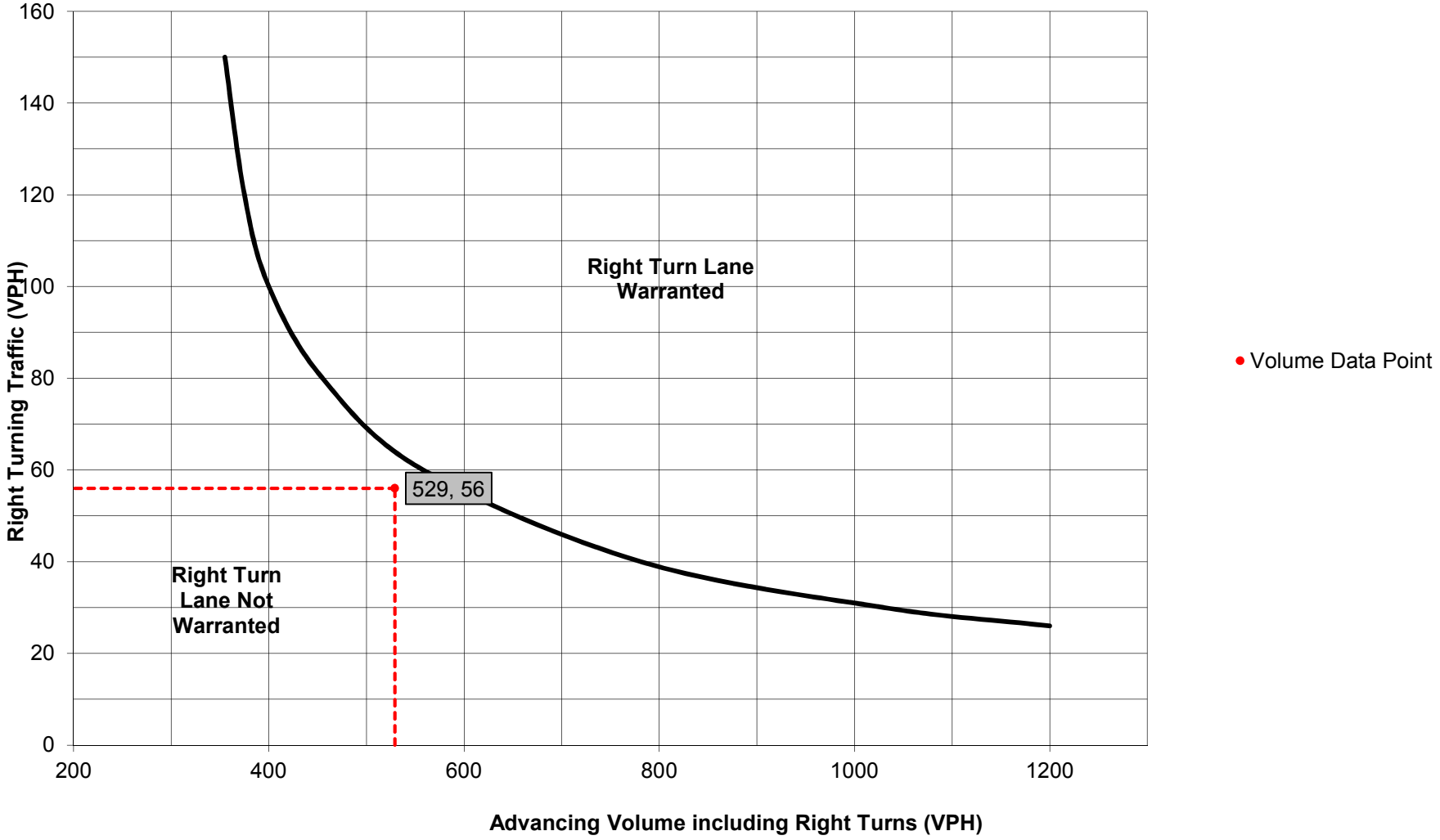
| | | |
|---|---|---|
| Right Turn Lane Storage Length, Condition A: | N/A | Feet |
| Condition B: | N/A | Feet |
| Condition C: | N/A | Feet |
| Required Right Turn Lane Storage Length: | N/A | Feet |

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 9. Warrant for right turn lanes on two-lane roadways**
**(40 mph or lower speeds, unsignalized and signalized intersections)**



# APPENDIX M

***SIGNAL WARRANT ANALYSIS***

## *SPROUL ROAD & MAIN SITE DRIVEWAY*

**Job #:** GMP.A.00030
**Intersection:** Sproul/Northern Driveway/Cemetary

**4-Hour Volume Development (2020 Projected Conditions)**

**2014 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak (7:30-8:30 A.M.) | 4-5 P.M. | 5-6 P.M. | P.M. Peak (4:30-5:30 P.M.) | 11-12 P.M. | 12-1 P.M. | SAT Peak (12:00-1:00 P.M.) |
| EBL | 2 | 4 | 4 | 7 | 0 | 1 | 9 | 19 | 19 |
| EBT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EBR | 3 | 10 | 6 | 19 | 0 | 3 | 36 | 133 | 133 |
| WBL | 0 | 2 | 0 | 24 | 12 | 22 | 8 | 2 | 2 |
| WBT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBR | 0 | 2 | 0 | 15 | 15 | 21 | 0 | 1 | 1 |
| NBL | 12 | 22 | 17 | 10 | 1 | 1 | 62 | 28 | 28 |
| NBT | 1909 | 2045 | 2106 | 1270 | 1313 | 1318 | 1216 | 1244 | 1244 |
| NBR | 19 | 24 | 21 | 11 | 2 | 5 | 4 | 0 | 0 |
| SBL | 6 | 4 | 6 | 3 | 1 | 3 | 6 | 1 | 1 |
| SBT | 1063 | 1060 | 1147 | 2109 | 2149 | 2206 | 1205 | 1279 | 1279 |
| SBR | 4 | 7 | 2 | 2 | 0 | 0 | 36 | 13 | 13 |
| **Total** | **3018** | **3180** | **3309** | **3470** | **3493** | **3580** | **2582** | **2720** | **2720** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **0.50** | **1.40** | --- | **6.50** | **0.00** | --- | **0.30** | **1.00** | --- |
| **WB K-Factor** | **0.90** | **0.90** | --- | **0.90** | **0.90** | --- | **0.90** | **0.90** | --- |
| **NB K-Factor** | **0.90** | **0.98** | -- | **0.98** | **0.99** | -- | **1.01** | **1.00** | -- |
| **SB K-Factor** | **0.93** | **0.93** | --- | **0.96** | **0.97** | --- | **0.96** | **1.00** | --- |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBL | **4** | 2 | 6 | **1** | 7 | 0 | **20** | 6 | 20 |
| EBT | **0** | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 |
| EBR | **6** | 3 | 8 | **3** | 20 | 0 | **137** | 41 | 137 |
| WBL | **80** | 72 | 72 | **500** | 450 | 450 | **515** | 464 | 464 |
| WBT | **0** | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 |
| WBR | **40** | 36 | 36 | **191** | 172 | 172 | **226** | 203 | 203 |
| NBL | **18** | 16 | 18 | **1** | 1 | 1 | **29** | 29 | 29 |
| NBT | **2281** | 2064 | 2225 | **1543** | 1505 | 1534 | **1513** | 1525 | 1513 |
| NBR | **111** | 100 | 108 | **220** | 215 | 219 | **344** | 347 | 344 |
| SBL | **75** | 70 | 70 | **203** | 194 | 198 | **259** | 250 | 259 |
| SBT | **1253** | 1164 | 1162 | **2274** | 2176 | 2213 | **1379** | 1330 | 1379 |
| SBR | **2** | 2 | 2 | **0** | 0 | 0 | **1** | 1 | 1 |
| **Total** | **3870** | **3529** | **3707** | **4936** | **4740** | **4787** | **4423** | **4196** | **4349** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Sproul Road | 2 | 40 | North-South |
| Minor Street: | Cemetary Driveway/Proposed MAIN Driveway | 2 | | East-West |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | Yes |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

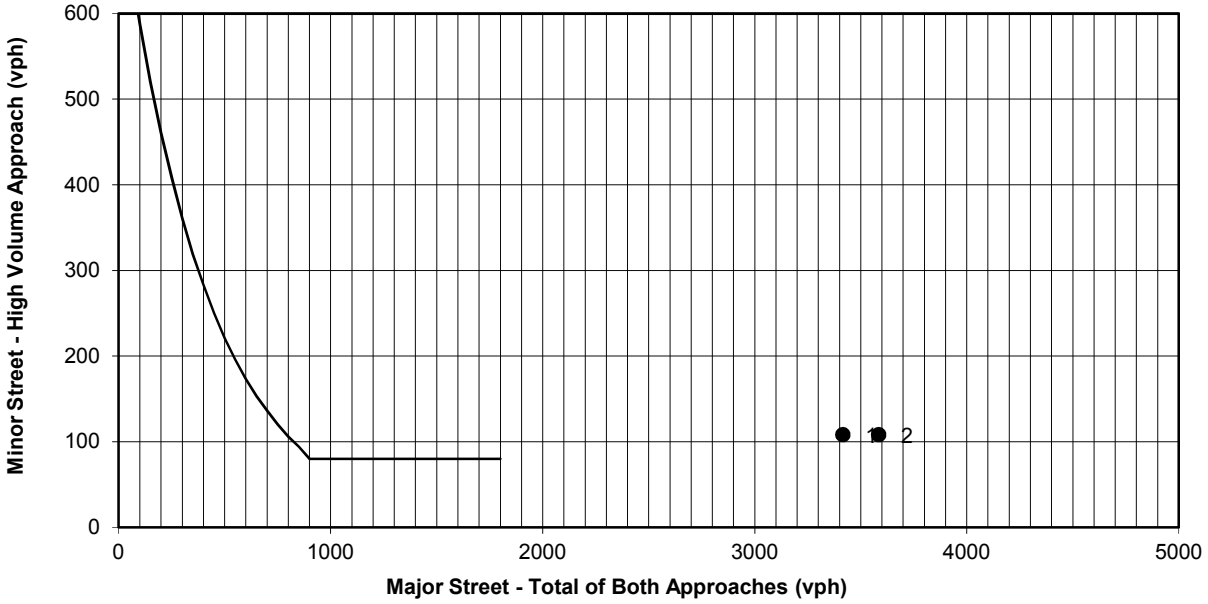
***70% factor applied to volume thresholds***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | 2 | 0 | 3 | 72 | 0 | 36 | 16 | 2064 | 100 | 70 | 1164 | 2 |
| 2020 Projected 8-9am | 6 | 0 | 8 | 72 | 0 | 36 | 18 | 2225 | 108 | 70 | 1162 | 2 |
| 2020 Projected 4-5pm | 7 | 0 | 20 | 450 | 0 | 172 | 1 | 1505 | 215 | 194 | 2176 | 0 |
| 2020 Projected 5-6pm | 0 | 0 | 0 | 450 | 0 | 172 | 1 | 1534 | 219 | 198 | 2213 | 0 |
| 2020 Projected 11-12pm | 6 | 0 | 41 | 464 | 0 | 203 | 29 | 1525 | 347 | 250 | 1330 | 1 |
| 2020 Projected 12-1pm | 20 | 0 | 137 | 464 | 0 | 203 | 29 | 1513 | 344 | 259 | 1379 | 1 |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 3416 | 108 | 80 | yes |
| 2 | 2020 Projected 8-9am | 3585 | 108 | 80 | yes |
| 3 | 2020 Projected 4-5pm | 4091 | 622 | 80 | yes |
| 4 | 2020 Projected 5-6pm | 4165 | 622 | 80 | yes |
| 5 | 2020 Projected 11-12pm | 3482 | 667 | 80 | yes |
| 6 | 2020 Projected 12-1pm | 3525 | 667 | 80 | yes |



## *SPROUL ROAD & SOUTHERN SITE DRIVEWAY*

**Job #:** GMP.A.00030
**Intersection:** Sproul/SouthernDriveway

**4-Hour Volume Development (2020 Projected Conditions)**

**2014 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak (7:30-8:30 A.M.) | 4-5 P.M. | 5-6 P.M. | P.M. Peak (4:30-5:30 P.M.) | 11-12 P.M. | 12-1 P.M. | SAT Peak (12:00-1:00 P.M.) |
| EBL | 0 | 0 | **0** | 4 | 1 | **1** | 0 | 12 | **12** |
| EBT | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| EBR | 0 | 0 | **0** | 21 | 7 | **9** | 31 | 68 | **68** |
| WBL | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| WBT | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| WBR | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NBL | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NBT | 1970 | 2008 | **2057** | 1314 | 1231 | **1354** | 1253 | 1393 | **1393** |
| NBR | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SBL | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SBT | 1316 | 1103 | **1313** | 2045 | 2059 | **2100** | 1271 | 1335 | **1335** |
| SBR | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Total** | **3286** | **3111** | **3370** | **3384** | **3298** | **3464** | **2555** | **2808** | **2808** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **0.00** | **0.00** | --- | **2.5** | **0.8** | --- | **0.39** | **1.00** | --- |
| **WB K-Factor** | **0.90** | **0.90** | --- | **0.90** | **0.90** | --- | **0.90** | **0.90** | --- |
| **NB K-Factor** | **0.96** | **0.98** | -- | **0.97** | **0.91** | -- | **0.90** | **1.00** | -- |
| **SB K-Factor** | **1.00** | **0.84** | --- | **0.97** | **0.98** | --- | **0.95** | **1.00** | --- |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBL | **0** | 0 | 0 | **1** | 3 | 1 | **12** | 5 | 12 |
| EBT | **0** | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 |
| EBR | **0** | 0 | 0 | **9** | 23 | 7 | **70** | 27 | 70 |
| WBL | **64** | 58 | 58 | **162** | 146 | 146 | **170** | 153 | 153 |
| WBT | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| WBR | **54** | 49 | 49 | **112** | 101 | 101 | **115** | 104 | 104 |
| NBL | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| NBT | **2324** | 2226 | 2269 | **1800** | 1747 | 1636 | **2054** | 1848 | 2054 |
| NBR | **51** | 49 | 50 | **93** | 90 | 85 | **122** | 110 | 122 |
| SBL | **51** | 51 | 43 | **90** | 88 | 88 | **128** | 122 | 128 |
| SBT | **1453** | 1456 | 1221 | **2552** | 2485 | 2502 | **1821** | 1734 | 1821 |
| SBR | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| **Total** | **3997** | **3889** | **3690** | **4819** | **4683** | **4566** | **4492** | **4103** | **4464** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Sproul Road | 2 | 40 | North-South |
| Minor Street: | Proposed Southern Driveway | 2 | | East-West |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | Yes |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

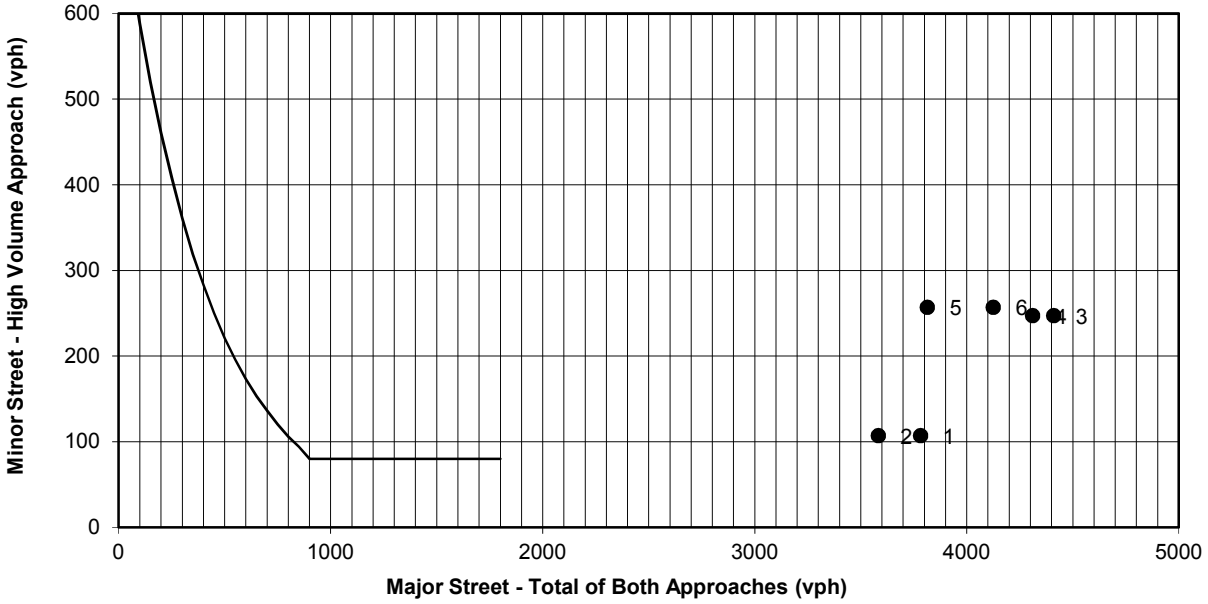
***70% factor applied to volume thresholds***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | 0 | 0 | 0 | 58 | | 49 | | 2226 | 49 | 51 | 1456 | |
| 2020 Projected 8-9am | 0 | 0 | 0 | 58 | | 49 | | 2269 | 50 | 43 | 1221 | |
| 2020 Projected 4-5pm | 3 | 0 | 23 | 146 | | 101 | | 1747 | 90 | 88 | 2485 | |
| 2020 Projected 5-6pm | 1 | 0 | 7 | 146 | | 101 | | 1636 | 85 | 88 | 2502 | |
| 2020 Projected 11-12pm | 5 | 0 | 27 | 153 | | 104 | | 1848 | 110 | 122 | 1734 | |
| 2020 Projected 12-1pm | 12 | 0 | 70 | 153 | | 104 | | 2054 | 122 | 128 | 1821 | |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 3782 | 107 | 80 | yes |
| 2 | 2020 Projected 8-9am | 3583 | 107 | 80 | yes |
| 3 | 2020 Projected 4-5pm | 4410 | 247 | 80 | yes |
| 4 | 2020 Projected 5-6pm | 4311 | 247 | 80 | yes |
| 5 | 2020 Projected 11-12pm | 3814 | 257 | 80 | yes |
| 6 | 2020 Projected 12-1pm | 4125 | 257 | 80 | yes |



## *SPRINGFIELD ROAD & OLD MARPLE ROAD*

**Job #:** GMP.A.00030
**Intersection:** Springfield/OldMarple

**4-Hour Volume Development (2020 Projected Conditions)**

**2014 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak (7:15-8:15 A.M.) | 4-5 P.M. | 5-6 P.M. | P.M. Peak (5:00-6:00 P.M.) | 11-12 P.M. | 12-1 P.M. | SAT Peak (11:15-12:15 P.M.) |
| EBL | 40 | 45 | **42** | 89 | 98 | **117** | 84 | 96 | **76** |
| EBT | | | | | | | | | |
| EBR | 43 | 49 | **47** | 98 | 94 | **100** | 84 | 121 | **104** |
| WBL | | | | | | | | | |
| WBT | | | | | | | | | |
| WBR | | | | | | | | | |
| NBL | 57 | 71 | **57** | 37 | 16 | **25** | 62 | 65 | **72** |
| NBT | 724 | 649 | **727** | 504 | 543 | **538** | 498 | 519 | **578** |
| NBR | | | | | | | | | |
| SBL | | | | | | | | | |
| SBT | 416 | 376 | **430** | 513 | 553 | **615** | 403 | 415 | **432** |
| SBR | 353 | 355 | **397** | 220 | 259 | **268** | 239 | 261 | **252** |
| **Total** | **1633** | **1545** | **1700** | **1461** | **1563** | **1663** | **1370** | **1477** | **1514** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **0.93** | **1.06** | --- | **0.86** | **0.88** | --- | **0.93** | **1.21** | --- |
| **WB K-Factor** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **NB K-Factor** | **1.00** | **0.92** | -- | **0.96** | **0.99** | -- | **0.86** | **0.90** | -- |
| **SB K-Factor** | **1.05** | **0.88** | --- | **0.90** | **0.92** | --- | **0.95** | **0.99** | --- |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBL | **43** | 40 | 45 | **121** | 104 | 107 | **78** | 73 | 94 |
| EBT | | | | | | | | | |
| EBR | **48** | 45 | 51 | **103** | 89 | 91 | **107** | 100 | 129 |
| WBL | | | | | | | | | |
| WBT | | | | | | | | | |
| WBR | | | | | | | | | |
| NBL | **59** | 59 | 54 | **26** | 25 | 26 | **74** | 64 | 66 |
| NBT | **832** | 829 | 764 | **695** | 668 | 690 | **809** | 697 | 727 |
| NBR | | | | | | | | | |
| SBL | | | | | | | | | |
| SBT | **489** | 514 | 432 | **788** | 711 | 725 | **615** | 584 | 608 |
| SBR | **409** | 430 | 362 | **276** | 249 | 254 | **260** | 247 | 257 |
| **Total** | **1880** | **1917** | **1708** | **2009** | **1846** | **1893** | **1943** | **1765** | **1881** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Springfield Road | 1 | 25 | North-South |
| Minor Street: | Old Marple Road | 1 | | East-West |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | No |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

***Normal values apply***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | 40 | | 45 | | | | 59 | 829 | | | 514 | 430 |
| 2020 Projected 8-9am | 45 | | 51 | | | | 54 | 764 | | | 432 | 362 |
| 2020 Projected 4-5pm | 104 | | 89 | | | | 25 | 668 | | | 711 | 249 |
| 2020 Projected 5-6pm | 107 | | 91 | | | | 26 | 690 | | | 725 | 254 |
| 2020 Projected 11-12pm | 73 | | 100 | | | | 64 | 697 | | | 584 | 247 |
| 2020 Projected 12-1pm | 94 | | 129 | | | | 66 | 727 | | | 608 | 257 |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 1832 | 85 | 80 | yes |
| 2 | 2020 Projected 8-9am | 1612 | 96 | 80 | yes |
| 3 | 2020 Projected 4-5pm | 1653 | 193 | 80 | yes |
| 4 | 2020 Projected 5-6pm | 1695 | 198 | 80 | yes |
| 5 | 2020 Projected 11-12pm | 1592 | 173 | 80 | yes |
| 6 | 2020 Projected 12-1pm | 1658 | 223 | 80 | yes |

***REED ROAD &***
***LAWRENCE BUSINESS PARK DRIVEWAY/***
***PROPOSED DRIVEWAY***

**Job #:** GMP.A.00030
**Intersection:** Reed/Lawrence Park/Driveway

**4-Hour Volume Development (2020 Projected Conditions)**

**2014 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak | 4-5 P.M. | 5-6 P.M. | P.M. Peak | 11-12 P.M. | 12-1 P.M. | SAT Peak |
| EBL | 25 | 45 | **45** | 25 | 15 | **29** | 26 | 34 | **34** |
| EBT | 289 | 371 | **371** | 394 | 375 | **399** | 312 | 338 | **338** |
| EBR | | | | | | | | | |
| WBL | | | | | | | | | |
| WBT | 328 | 365 | **365** | 345 | 339 | **375** | 328 | 345 | **345** |
| WBR | 38 | 60 | **60** | 30 | 30 | **34** | 54 | 61 | **61** |
| NBL | | | | | | | | | |
| NBT | | | | | | | | | |
| NBR | | | | | | | | | |
| SBL | 13 | 29 | **29** | 67 | 59 | **75** | 68 | 79 | **79** |
| SBT | | | | | | | | | |
| SBR | 5 | 12 | **12** | 48 | 36 | **48** | 37 | 39 | **39** |
| **Total** | **698** | **882** | **882** | **909** | **854** | **960** | **825** | **896** | **896** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **0.75** | **1.00** | **---** | **0.98** | **0.91** | **---** | **0.91** | **1.00** | **---** |
| **WB K-Factor** | **0.86** | **1.00** | **---** | **0.92** | **0.90** | **---** | **0.94** | **1.00** | **---** |
| **NB K-Factor** | **0.90** | **0.90** | **--** | **0.90** | **0.90** | **--** | **0.90** | **0.90** | **--** |
| **SB K-Factor** | **0.44** | **1.00** | **---** | **1.21** | **0.77** | **---** | **0.89** | **1.00** | **---** |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBL | **46** | 35 | 46 | **25** | 24 | 23 | **35** | 32 | 35 |
| EBT | **387** | 292 | 387 | **406** | 397 | 370 | **333** | 303 | 333 |
| EBR | **52** | 39 | 52 | **123** | 120 | 112 | **176** | 160 | 176 |
| WBL | **46** | 40 | 46 | **110** | 101 | 99 | **158** | 149 | 158 |
| WBT | **385** | 332 | 385 | **367** | 336 | 331 | **328** | 309 | 328 |
| WBR | **62** | 53 | 62 | **35** | 32 | 32 | **63** | 59 | 63 |
| NBL | **42** | 38 | 38 | **150** | 135 | 135 | **174** | 157 | 157 |
| NBT | **0** | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 |
| NBR | **28** | 25 | 25 | **105** | 95 | 95 | **124** | 112 | 112 |
| SBL | **40** | 18 | 40 | **77** | 93 | 59 | **81** | 72 | 81 |
| SBT | **0** | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 |
| SBR | **12** | 5 | 12 | **49** | 59 | 38 | **40** | 36 | 40 |
| **Total** | **1100** | **877** | **1093** | **1447** | **1392** | **1294** | **1512** | **1389** | **1483** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Reed Road | 2 | 35 | East-West |
| Minor Street: | Western Driveway | 1 | | North-South |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | No |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

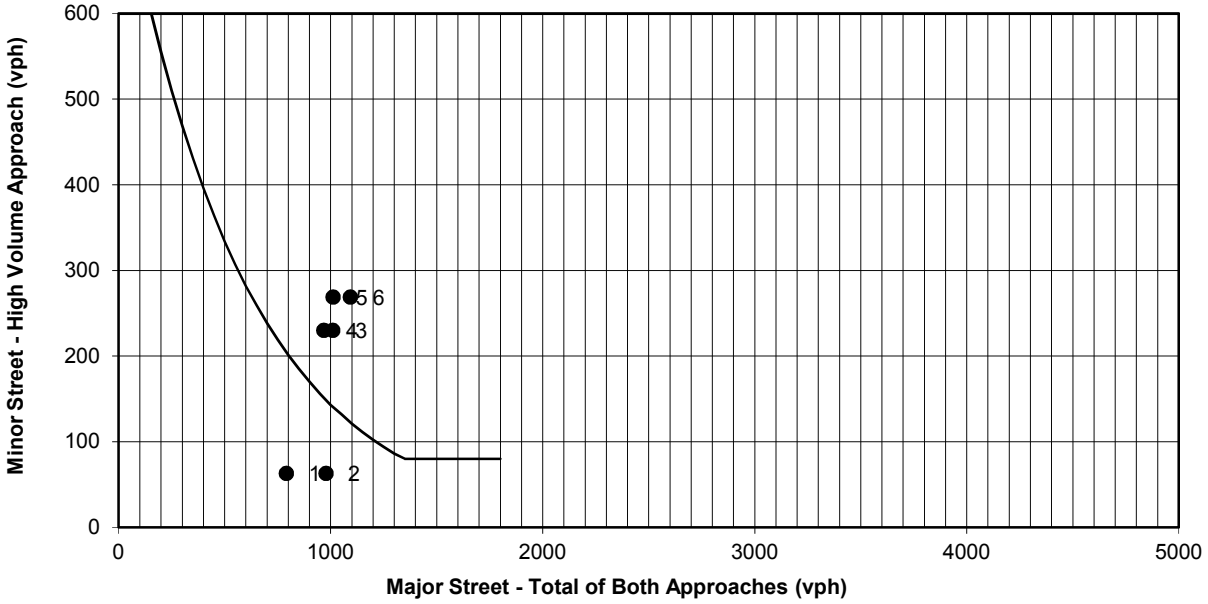
***Normal values apply***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | 35 | 292 | 39 | 40 | 332 | 53 | 38 | 0 | 25 | 18 | 0 | 5 |
| 2020 Projected 8-9am | 46 | 387 | 52 | 46 | 385 | 62 | 38 | 0 | 25 | 40 | 0 | 12 |
| 2020 Projected 4-5pm | 24 | 397 | 120 | 101 | 336 | 32 | 135 | 0 | 95 | 93 | 0 | 59 |
| 2020 Projected 5-6pm | 23 | 370 | 112 | 99 | 331 | 32 | 135 | 0 | 95 | 59 | 0 | 38 |
| 2020 Projected 11-12pm | 32 | 303 | 160 | 149 | 309 | 59 | 157 | 0 | 112 | 72 | 0 | 36 |
| 2020 Projected 12-1pm | 35 | 333 | 176 | 158 | 328 | 63 | 157 | 0 | 112 | 81 | 0 | 40 |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 791 | 63 | 204 | no |
| 2 | 2020 Projected 8-9am | 978 | 63 | 149 | no |
| 3 | 2020 Projected 4-5pm | 1010 | 230 | 141 | yes |
| 4 | 2020 Projected 5-6pm | 967 | 230 | 152 | yes |
| 5 | 2020 Projected 11-12pm | 1012 | 269 | 141 | yes |
| 6 | 2020 Projected 12-1pm | 1093 | 269 | 123 | yes |



## *PARKWAY AVENUE &*
## *SHOPPING CENTER DRIVEWAY/WESTBOURNE DRIVE*

**Job #:** GMP.A.00030
**Intersection:** Parkway/Westbourne/SC Driveway

**4-Hour Volume Development (2020 Projected Conditions)**

**2015 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak | 4-5 P.M. | 5-6 P.M. | P.M. Peak | 11-12 P.M. | 12-1 P.M. | SAT Peak |
| EBL | 51 | 46 | **56** | 111 | 104 | **104** | 102 | 123 | **123** |
| EBT | 20 | 19 | **16** | 59 | 67 | **67** | 36 | 52 | **52** |
| EBR | 33 | 37 | **32** | 115 | 119 | **119** | 101 | 161 | **161** |
| WBL | 15 | 13 | **18** | 20 | 19 | **19** | 4 | 9 | **9** |
| WBT | 19 | 24 | **21** | 35 | 29 | **29** | 47 | 41 | **41** |
| WBR | 37 | 45 | **28** | 0 | 18 | **18** | 17 | 21 | **21** |
| NBL | 43 | 48 | **48** | 90 | 63 | **63** | 93 | 108 | **108** |
| NBT | 597 | 508 | **616** | 308 | 364 | **364** | 232 | 290 | **290** |
| NBR | 0 | 6 | **2** | 6 | 4 | **4** | 5 | 4 | **4** |
| SBL | 13 | 29 | **18** | 33 | 22 | **22** | 13 | 23 | **23** |
| SBT | 155 | 187 | **172** | 365 | 470 | **470** | 203 | 175 | **175** |
| SBR | 35 | 69 | **52** | 90 | 94 | **94** | 130 | 118 | **118** |
| **Total** | **1018** | **1031** | **1079** | **1232** | **1373** | **1373** | **983** | **1125** | **1125** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **1.00** | **0.98** | **---** | **0.98** | **1.00** | **---** | **0.71** | **1.00** | **---** |
| **WB K-Factor** | **1.06** | **1.22** | **--** | **0.83** | **1.00** | **--** | **0.96** | **1.00** | **--** |
| **NB K-Factor** | **0.96** | **0.84** | **--** | **0.94** | **1.00** | **--** | **0.82** | **1.00** | **--** |
| **SB K-Factor** | **0.71** | **1.18** | **---** | **0.83** | **1.00** | **---** | **1.09** | **1.00** | **---** |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBL | **57** | 57 | 56 | **107** | 105 | 107 | **126** | 90 | 126 |
| EBT | **16** | 16 | 16 | **69** | 68 | 69 | **53** | 38 | 53 |
| EBR | **33** | 33 | 32 | **122** | 120 | 122 | **165** | 117 | 165 |
| WBL | **18** | 19 | 22 | **19** | 16 | 19 | **9** | 9 | 9 |
| WBT | **22** | 23 | 27 | **30** | 25 | 30 | **42** | 40 | 42 |
| WBR | **29** | 31 | 35 | **18** | 15 | 18 | **22** | 21 | 22 |
| NBL | **49** | 47 | 41 | **65** | 61 | 65 | **111** | 91 | 111 |
| NBT | **649** | 624 | 548 | **409** | 383 | 409 | **339** | 278 | 339 |
| NBR | **2** | 2 | 2 | **4** | 4 | 4 | **4** | 3 | 4 |
| SBL | **18** | 13 | 21 | **23** | 19 | 23 | **24** | 26 | 24 |
| SBT | **194** | 138 | 228 | **520** | 433 | 520 | **230** | 252 | 230 |
| SBR | **53** | 38 | 62 | **96** | 80 | 96 | **121** | 132 | 121 |
| **Total** | **1140** | **1041** | **1090** | **1482** | **1329** | **1482** | **1246** | **1097** | **1246** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Parkway Ave | 1 | 25 | North-South |
| Minor Street: | SC Driveway/Westbourne Drive | 1 | | East-West |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | No |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

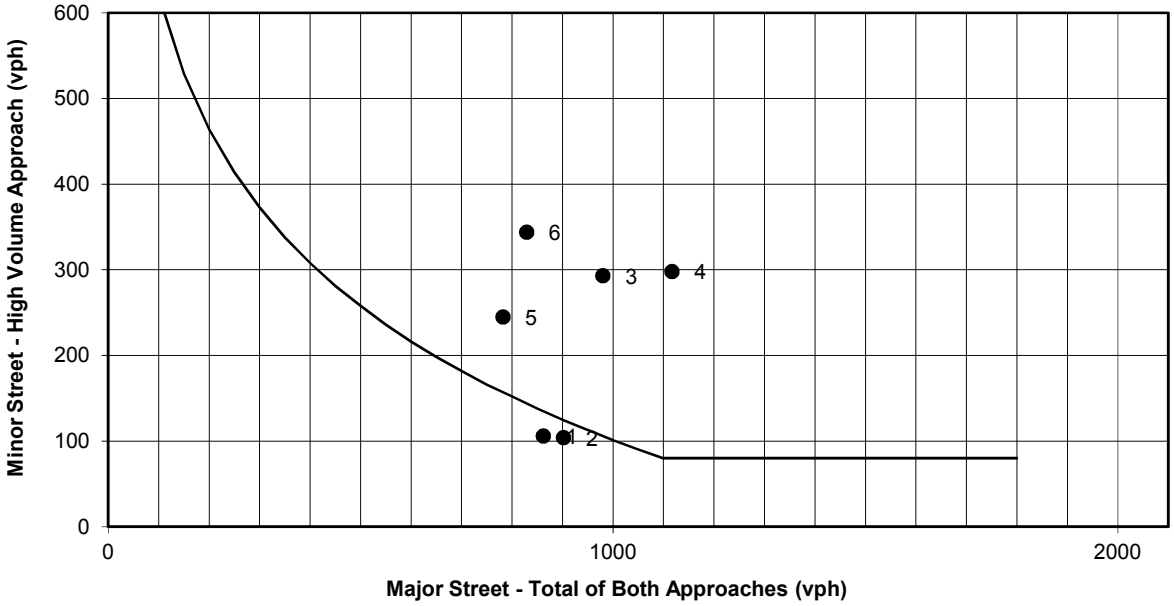
***Normal values apply***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | 57 | 16 | 33 | 19 | 23 | 31 | 47 | 624 | 2 | 13 | 138 | 38 |
| 2020 Projected 8-9am | 56 | 16 | 32 | 22 | 27 | 35 | 41 | 548 | 2 | 21 | 228 | 62 |
| 2020 Projected 4-5pm | 105 | 68 | 120 | 16 | 25 | 15 | 61 | 383 | 4 | 19 | 433 | 80 |
| 2020 Projected 5-6pm | 107 | 69 | 122 | 19 | 30 | 18 | 65 | 409 | 4 | 23 | 520 | 96 |
| 2020 Projected 11-12pm | 90 | 38 | 117 | 9 | 40 | 21 | 91 | 278 | 3 | 26 | 252 | 132 |
| 2020 Projected 12-1pm | 126 | 53 | 165 | 9 | 42 | 22 | 111 | 339 | 4 | 24 | 230 | 121 |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 862 | 106 | 135 | no |
| 2 | 2020 Projected 8-9am | 902 | 104 | 124 | no |
| 3 | 2020 Projected 4-5pm | 980 | 293 | 106 | yes |
| 4 | 2020 Projected 5-6pm | 1117 | 298 | 76 | yes |
| 5 | 2020 Projected 11-12pm | 782 | 245 | 157 | yes |
| 6 | 2020 Projected 12-1pm | 829 | 344 | 143 | yes |



## *EAGLE ROAD & WEST ROLLING ROAD*

**Job #:** GMP.A.00030
**Intersection:** Eagle/West Rolling

**4-Hour Volume Development (2020 Projected Conditions)**

**2015 Existing Counts:**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7-8 A.M. | 8-9 A.M. | A.M. Peak | 4-5 P.M. | 5-6 P.M. | P.M. Peak | 11-12 P.M. | 12-1 P.M. | SAT Peak |
| EBT | 226 | 206 | **235** | 325 | 325 | **339** | 176 | 203 | **195** |
| EBR | 25 | 19 | **27** | 109 | 166 | **167** | 41 | 48 | **43** |
| WBL | 41 | 55 | **42** | 248 | 337 | **349** | 85 | 106 | **121** |
| WBT | 435 | 331 | **437** | 317 | 331 | **315** | 268 | 291 | **294** |
| NBL | 224 | 145 | **240** | 43 | 52 | **40** | 63 | 65 | **69** |
| NBR | 301 | 256 | **314** | 110 | 88 | **92** | 111 | 129 | **123** |
| **Total** | **1252** | **1012** | **1295** | **1152** | **1299** | **1302** | **744** | **842** | **845** |
| **K-Factor Calculations** | | | | | | | | | |
| **EB K-Factor** | **0.96** | **0.86** | **---** | **0.86** | **0.97** | **---** | **0.91** | **1.05** | **---** |
| **WB K-Factor** | **0.99** | **0.81** | **--** | **0.85** | **1.01** | **--** | **0.85** | **0.96** | **--** |
| **NB K-Factor** | **0.95** | **0.72** | **---** | **1.16** | **1.06** | **---** | **0.91** | **1.01** | **---** |

K-Factor = Hourly Volume ÷ Peak Hour Volume

**2020 Projected Conditions**

| Movement | Time Period | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A.M. Peak | 7-8 A.M. | 8-9 A.M. | P.M. Peak | 4-5 P.M. | 5-6 P.M. | SAT Peak | 11-12 P.M. | 12-1 P.M. |
| EBT | **248** | 238 | 213 | **372** | 319 | 361 | **226** | 206 | 238 |
| EBR | **28** | 27 | 24 | **193** | 166 | 187 | **69** | 63 | 73 |
| WBL | **43** | 43 | 35 | **393** | 334 | 395 | **163** | 139 | 156 |
| WBT | **448** | 445 | 361 | **344** | 293 | 346 | **334** | 284 | 320 |
| NBL | **246** | 233 | 178 | **60** | 70 | 64 | **102** | 92 | 103 |
| NBR | **322** | 305 | 233 | **129** | 150 | 137 | **174** | 158 | 176 |
| **Total** | **1335** | **1291** | **1044** | **1491** | **1332** | **1490** | **1068** | **942** | **1066** |

# Traffic Signal Warrant Summary
# MUTCD WARRANT 2 - Four Hour Volume

| | | | |
|---|---|---|---|
| Municipality: | Marple Twp | Analyst: | MB |
| County: | Delaware | TPD Project #: | GMP.A.00030 |
| Condition: | 2020 Projected Conditions | | |

| | Street Name | Lanes | Speed | Direction |
|---|---|---|---|---|
| Major Street: | Eagle Road | 1 | 35 | East-West |
| Minor Street: | West Rolling Road | 2 | | North-South |

## Volume Level Criteria

| | |
|---|---|
| 1. Is the critical speed of major street > 40 mph? | No |
| 2. Is the intersection in a built-up area of isolated community of <10,000 population? | No |

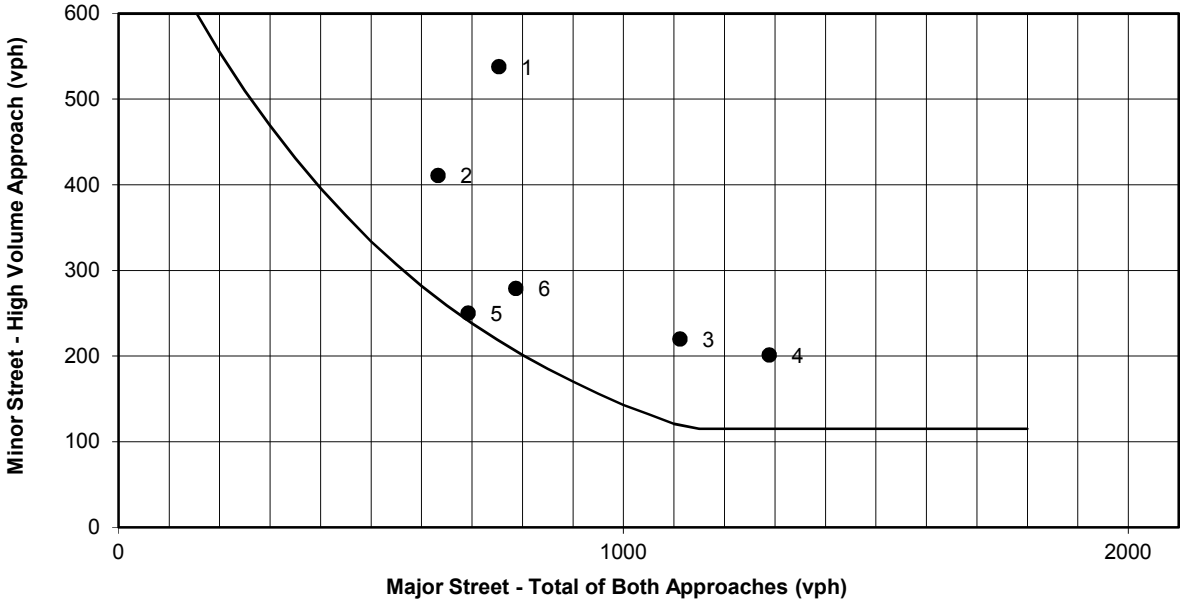
***Normal values apply***

## PennDOT Warrant xii - Four Hour Volume

| Hour | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 2020 Projected 7-8am | | 238 | 27 | 43 | 445 | | 233 | | 305 | | | |
| 2020 Projected 8-9am | | 213 | 24 | 35 | 361 | | 178 | | 233 | | | |
| 2020 Projected 4-5pm | | 319 | 166 | 334 | 293 | | 70 | | 150 | | | |
| 2020 Projected 5-6pm | | 361 | 187 | 395 | 346 | | 64 | | 137 | | | |
| 2020 Projected 11-12pm | | 206 | 63 | 139 | 284 | | 92 | | 158 | | | |
| 2020 Projected 12-1pm | | 238 | 73 | 156 | 320 | | 103 | | 176 | | | |

## Results

| | Condition | Major Street Volume | Minor Street Volume | Minor Street Warrant | Meets Warrant? |
|---|---|---|---|---|---|
| 1 | 2020 Projected 7-8am | 753 | 538 | 218 | yes |
| 2 | 2020 Projected 8-9am | 633 | 411 | 267 | yes |
| 3 | 2020 Projected 4-5pm | 1112 | 220 | 119 | yes |
| 4 | 2020 Projected 5-6pm | 1289 | 201 | 115 | yes |
| 5 | 2020 Projected 11-12pm | 692 | 250 | 242 | yes |
| 6 | 2020 Projected 12-1pm | 787 | 279 | 206 | yes |



# APPENDIX N

## *CONFLICT FACTOR ANALYSIS*

# *SPROUL ROAD & CRUM CREEK ROAD/ REALIGNED REED ROAD*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Sproul Road (N/S) & Reed/Crum Creek (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | Y | 0.50 | 15 | 296 | 2 | 4,440 | 65,000 | |
| | WB L | Y | 9.40 | 282 | 58 | 2 | 16,356 | 65,000 | |
| | NB L | Y | 1.87 | 56 | 1,735 | 2 | 97,160 | 65,000 | |
| | SB L | Y | 14.53 | 436 | 2,236 | 2 | 974,896 | 65,000 | XXX |
| PM PEAK | EB L | Y | 0.77 | 23 | 218 | 2 | 5,014 | 65,000 | |
| | WB L | Y | 7.70 | 231 | 49 | 2 | 11,319 | 65,000 | |
| | NB L | Y | 1.97 | 59 | 1,066 | 2 | 62,894 | 65,000 | |
| | SB L | Y | 8.17 | 245 | 2,289 | 2 | 560,805 | 65,000 | XXX |
| SAT PEAK | EB L | Y | 0.43 | 13 | 300 | 2 | 3,900 | 65,000 | |
| | WB L | Y | 12.47 | 374 | 71 | 2 | 26,554 | 65,000 | |
| | NB L | Y | 1.57 | 47 | 2,279 | 2 | 107,113 | 65,000 | |
| | SB L | Y | 13.97 | 419 | 171 | 2 | 71,649 | 65,000 | XXX |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 120
**PM Cycle Length (Seconds) -** 120
**SAT Cycle Length (Seconds) -** 120

*****SBL Satisfies Over Two Hours - Protected/Prohibited*****

## *SPROUL ROAD & MAIN DRIVEWAY*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Sproul Road (N/S) & Northern Driveway (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | Y | 0.13 | 4 | 40 | 1 | 160 | 50,000 | |
| | WB L | Y | 2.67 | 80 | 6 | 1 | 480 | 50,000 | |
| | NB L | Y | 0.60 | 18 | 1,255 | 2 | 22,590 | 65,000 | |
| | SB L | Y | 2.50 | 75 | 2,392 | 2 | 179,400 | 65,000 | XXX |
| PM PEAK | EB L | Y | 0.03 | 1 | 191 | 1 | 191 | 50,000 | |
| | WB L | Y | 16.67 | 500 | 3 | 1 | 1,500 | 50,000 | |
| | NB L | Y | 0.03 | 1 | 2,274 | 2 | 2,274 | 65,000 | |
| | SB L | Y | 6.77 | 203 | 1,763 | 2 | 357,889 | 65,000 | XXX |
| SAT PEAK | EB L | Y | 0.67 | 20 | 226 | 1 | 4,520 | 50,000 | |
| | WB L | Y | 17.17 | 515 | 137 | 1 | 70,555 | 50,000 | XXX |
| | NB L | Y | 0.97 | 29 | 1,380 | 2 | 40,020 | 65,000 | |
| | SB L | Y | 8.63 | 259 | 1,857 | 2 | 480,963 | 65,000 | XXX |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 120
**PM Cycle Length (Seconds) -** 120
**SAT Cycle Length (Seconds) -** 120

*****SBL Satisfies Two Hours - Protected/Prohibited*****

## *SPROUL ROAD & SOUTHERN DRIVEWAY*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Sproul Road (N/S) & Southern Driveway (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | Y | 0.00 | 0 | 54 | 1 | 0 | 50,000 | |
| | WB L | Y | 2.00 | 60 | 0 | 1 | 0 | 50,000 | |
| | NB L | Y | 0.00 | 0 | 1,453 | 2 | 0 | 65,000 | |
| | SB L | Y | 1.70 | 51 | 2,375 | 2 | 121,125 | 65,000 | |
| PM PEAK | EB L | Y | 0.03 | 1 | 112 | 1 | 112 | 50,000 | |
| | WB L | Y | 5.40 | 162 | 9 | 1 | 1,458 | 50,000 | |
| | NB L | Y | 0.00 | 0 | 2,552 | 2 | 0 | 65,000 | |
| | SB L | Y | 3.00 | 90 | 1,893 | 2 | 170,370 | 65,000 | XXX |
| SAT PEAK | EB L | Y | 0.40 | 12 | 115 | 1 | 1,380 | 50,000 | |
| | WB L | Y | 5.67 | 170 | 70 | 1 | 11,900 | 50,000 | |
| | NB L | Y | 0.00 | 0 | 1,821 | 2 | 0 | 65,000 | |
| | SB L | Y | 4.27 | 128 | 2,176 | 2 | 278,528 | 65,000 | XXX |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 120
**PM Cycle Length (Seconds) -** 120
**SAT Cycle Length (Seconds) -** 120

*****SBL Satisfies Two Hours - Protected/Prohibited*****

## *SPROUL ROAD & OLD MARPLE ROAD*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Sproul Road (N/S) & Old Marple Road (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | N | 2.25 | 135 | 239 | 1 | 32,265 | 35,000 | |
| | WB L | N | 3.62 | 217 | 112 | 1 | 24,304 | 35,000 | |
| | NB L | Y | 2.82 | 169 | 966 | 2 | 163,254 | 65,000 | XXX |
| | SB L | Y | 0.02 | 1 | 1,234 | 2 | 1,234 | 65,000 | |
| PM PEAK | EB L | N | 3.43 | 206 | 154 | 1 | 31,724 | 35,000 | |
| | WB L | N | 2.55 | 153 | 221 | 1 | 33,813 | 35,000 | |
| | NB L | Y | 1.22 | 73 | 1,645 | 2 | 120,085 | 65,000 | |
| | SB L | Y | 0.07 | 4 | 1,180 | 2 | 4,720 | 65,000 | |
| SAT PEAK | EB L | N | 4.02 | 241 | 149 | 1 | 35,909 | 35,000 | XXX |
| | WB L | N | 2.98 | 179 | 158 | 1 | 28,282 | 35,000 | |
| | NB L | Y | 1.12 | 67 | 1,421 | 2 | 95,207 | 65,000 | |
| | SB L | Y | 0.05 | 3 | 1,695 | 2 | 5,085 | 65,000 | |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 60
**PM Cycle Length (Seconds) -** 60
**SAT Cycle Length (Seconds) -** 60

*****No Movement Satisfies Two Hours*****

## *SPRINGFIELD ROAD & OLD MARPLE ROAD*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Springfield Road (N/S) & Old Marple Road (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | N | 2.00 | 60 | 898 | 1 | 53,880 | 35,000 | XXX |
| | SB L | | | | | | | | |
| PM PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | N | 0.87 | 26 | 1,064 | 1 | 27,664 | 35,000 | |
| | SB L | | | | | | | | |
| SAT PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | N | 2.47 | 74 | 875 | 1 | 64,750 | 35,000 | XXX |
| | SB L | | | | | | | | |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 120
**PM Cycle Length (Seconds) -** 120
**SAT Cycle Length (Seconds) -** 120

*****NBL Satisfies Two Hours (Permitted/Protected)*****

## *SPRINGFIELD ROAD & EAGLE ROAD*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Springfield Road (N/S) & Eagle Road (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | | | | | | | | |
| | SB L | Y | 0.65 | 39 | 909 | 2 | 35,451 | 65,000 | |
| PM PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | | | | | | | | |
| | SB L | Y | 3.55 | 213 | 835 | 2 | 177,855 | 65,000 | XXX |
| SAT PEAK | EB L | | | | | | | | |
| | WB L | | | | | | | | |
| | NB L | | | | | | | | |
| | SB L | Y | 1.70 | 102 | 871 | 2 | 88,842 | 65,000 | XXX |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 60
**PM Cycle Length (Seconds) -** 60
**SAT Cycle Length (Seconds) -** 60

*****SBL Satisfies Two Hours - Protected/Permitted*****

# *REED ROAD & LAWRENCE PARK/PROPOSED DRIVEWAY*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Reed Road (E/W) & Lawrence Park/Driveway (N/S)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | EB L | Y | 0.77 | 46 | 447 | 1 | 20,562 | 50,000 | |
| | WB L | Y | 0.77 | 46 | 439 | 1 | 20,194 | 50,000 | |
| | NB L | Y | 0.70 | 42 | 52 | 1 | 2,184 | 50,000 | |
| | SB L | N | 0.67 | 40 | 28 | 1 | 1,120 | 35,000 | |
| PM PEAK | EB L | Y | 0.42 | 25 | 402 | 1 | 10,050 | 50,000 | |
| | WB L | Y | 1.83 | 110 | 529 | 1 | 58,190 | 50,000 | XXX |
| | NB L | Y | 2.50 | 150 | 126 | 1 | 18,900 | 50,000 | |
| | SB L | N | 1.28 | 77 | 105 | 1 | 8,085 | 35,000 | |
| SAT PEAK | EB L | Y | 0.58 | 35 | 391 | 1 | 13,685 | 50,000 | |
| | WB L | Y | 2.63 | 158 | 509 | 1 | 80,422 | 50,000 | XXX |
| | NB L | Y | 2.90 | 174 | 121 | 1 | 21,054 | 50,000 | |
| | SB L | N | 1.35 | 81 | 124 | 1 | 10,044 | 35,000 | |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 60
**PM Cycle Length (Seconds) -** 60
**SAT Cycle Length (Seconds) -** 60

*****WBL Satisfies Over Two Hours - Protected/Prohibitted*****

## *REED ROAD & MARPIT DRIVE/PROPOSED DRIVEWAY*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Reed Road (N/S) & Driveway/Marpit (E/W)**

| Time | Left Turn | | | | Opposing | | Calculated | Required |
|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor |
| AM PEAK | EB L | Y | 0.29 | 14 | 40 | 1 | 560 | 50,000 |
| | WB L | Y | 1.63 | 78 | 25 | 1 | 1,950 | 50,000 |
| | NB L | Y | 0.77 | 37 | 246 | 1 | 9,102 | 50,000 |
| | SB L | Y | 0.92 | 44 | 1,276 | 1 | 56,144 | 50,000 |
| PM PEAK | EB L | Y | 0.75 | 36 | 106 | 1 | 3,816 | 50,000 |
| | WB L | Y | 6.23 | 299 | 115 | 1 | 34,385 | 50,000 |
| | NB L | Y | 1.56 | 75 | 856 | 1 | 64,200 | 50,000 |
| | SB L | Y | 0.85 | 41 | 563 | 1 | 23,083 | 50,000 |
| SAT PEAK | EB L | Y | 0.88 | 42 | 103 | 1 | 4,326 | 50,000 |
| | WB L | Y | 4.19 | 201 | 123 | 1 | 24,723 | 50,000 |
| | NB L | Y | 2.27 | 109 | 513 | 1 | 55,917 | 50,000 |
| | SB L | Y | 1.71 | 82 | 524 | 1 | 42,968 | 50,000 |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 75

**PM Cycle Length (Seconds) -** 75

## *EAGLE ROAD & WEST ROLLING ROAD*

# LEFT TURN SIGNALIZATION DOCUMENTATION

2020 Projected Conditions

COUNTY: **Delaware County**
MUNICIPALITY: **Marple Township**
INTERSECTION: **Eagle Road (E/W) & West Rolling Road (N)**

| Time | Left Turn | | | | Opposing | | Calculated | Required | |
|---|---|---|---|---|---|---|---|---|---|
| | Direction | Exclusive Lane | Per Cycle | Volume | Volume | # of Lanes | Conflict Factor | Conflict Factor | |
| AM PEAK | WB L | N | 0.84 | 43 | 276 | 1 | 11,868 | 35,000 | |
| PM PEAK | WB L | N | 8.73 | 393 | 565 | 1 | 222,045 | 35,000 | **xxx** |
| SAT PEAK | WB L | N | 3.62 | 163 | 295 | 1 | 48,085 | 35,000 | **xxx** |

***Volumes based upon 2020 Projected Conditions**

**AM Cycle Length (Seconds) -** 70
**PM Cycle Length (Seconds) -** 80
**SAT Cycle Length (Seconds) -** 65

*****WBL Satisfies Two Hours*****