

May 15, 2015

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

Re: **Response Letter – Traffic Impact Study**  
Cardinal Crossings  
Marple Township, Delaware County, PA  
Township# MRPL 0132  
TPD# GMP.A.00030

Dear Mr. Hamaday:

Traffic Planning & Design, Inc. (TPD) has had an opportunity to review the February 3, 2015, review letter prepared by Pennoni Associates, Inc., pertaining to the submitted Transportation Impact Study (TIS) for the proposed Cardinal Crossing, dated November 5, 2014. A copy of the PennDOT review letter is attached for reference. Review comments are shown below in bold and italics with TPD's responses following.

## **REVIEW 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.***

This driveway does not exist on the most recent site plan. As discussed at the most recent meeting between representatives from PennDOT, Marple Township, and the Project Team, this driveway was determined to be infeasible due to existing grading on-site. Figure 1 has been updated accordingly in the revised TIS.

- 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.***

Per Comment #10 in PennDOT's Review Letter, dated December 29, 2014, the Department

will allow the methodology utilized by TPD for this project only. All future projects will utilize the newest methodology. It should be noted that the newest methodology contains no interaction data for retail-to-retail, nor does it contain any midday data for Saturday interaction, which does not appear reasonable. Finally, the highest interaction percentage utilized during any peak hour in the TIS is 10%, which is not unreasonable in TPD's opinion.

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.*

Will Comply – The lane configurations were updated accordingly at this intersection in the capacity analysis contained in the revised TIS.

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.*

The proposed improvements have been revised at the proposed site access locations in order to maintain ILOS D or better and LOS E or better for any movement under 2025 Design Year Conditions.

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 A venue*

*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.*

Based on the revised capacity analysis contained in the TIS, only two locations remain un-mitigated due to site-related impact. These locations are as follows:

- Sproul Road (S.R. 0320) & Springfield Road (S.R. 1009) – This intersection continues to operate at ILOS D or better, which is acceptable in urban settings. Additional improvements are considered feasible based on the location of two bridges over I-476, just south of the intersection.
- State Road (S.R. 0001) & Springfield Road (S.R. 1009) – At the recent PennDOT meeting, the Department and Township agreed that, in lieu of mitigation at this intersection, they will accept additional improvements at an alternate location in the study area.

**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.***

Based on other PennDOT review comments, TPD revised its gravity model assumptions to/from all adjacent municipalities utilizing Google Maps. This re-evaluation resulted in a significant increase to/from the east via Eagle Road, which presumably accounts for the noted cut-thru in real-life via Burmont-Eagle Road noted above. In order to account for a cut-thru route using West Rolling-Eagle Road, TPD assumed a small percentage of vehicles predicted to-from the east via State Road, will access the site to/from the south via West Rolling Road (blanket assumption of 3% of new trips which is 19% to 23% of the traffic from the east via State Street).

**7. *Based on the 95<sup>th</sup> 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***

The Applicant is proposing significant roadway improvements at this intersection that mitigate the ILOS issues due to site traffic. The remaining queuing issues are issues that are anticipated to occur without the proposed site. It is TPD's opinion that these queuing issues would require a shorter cycle length to reduce queuing, and/or an additional SBL lane on Sproul Road, and/or an additional thru lane on NB Sproul Road. It is TPD's opinion that none of these improvements are feasible.

**b. *Sproul Road (SR 0320) & Williamsburg Drive***

No resultant queuing issues remain at this intersection.

**c. *Sproul Road (SR 0320) & Crum Creek Road/Realigned Reed Road***

The Applicant is proposing significant roadway improvements at this intersection, including the re-alignment of Reed Road and lanes on all approaches, including an additional thru lane on NB Sproul Road. The only deficient queuing issue occurs on SAT, and is the NB Sproul Road queue that will impact the proposed RI/RO/LI driveway on Sproul Road. The 50<sup>th</sup> Percentile Queue will not impact this driveway location. It is

TPD's opinion that this queuing issue would require a shorter cycle length to reduce queuing and/or an additional thru lane on NB Sproul Road. It is TPD's opinion that none of these improvements are feasible.

**d. *Sproul Road (SR 0320) & Cemetery Driveway/Don Guanella Driveway***

No resultant queuing issues remain at this intersection.

**e. *Sproul Road (SR 0320) & Springfield Road (SR 1009)***

With the proposed improvements, this intersection will operate at ILOS D or better. As discussed at the recent PennDOT Meeting, additional improvements are considered feasible based on the location of two bridges over I-476, just south of the intersection. It is TPD's opinion that the only improvements that will mitigate this issue is to provide dual left-turn lanes on SB Sproul Road at this intersection and/or a shorter cycle length to reduce queues. It is TPD's opinion that none of these improvements are feasible at this intersection, as dual lanes would require an additional receiving lane over the Springfield Road Bridge over I-476, and the shorter cycle length will result in a lower LOS at this intersection.

**f. *Sproul Road (SR 0320) & Old Marple Road (consider the addition of a southbound right-turn lane)***

No resultant queuing issues remain at this intersection.

**g. *Sproul Road (SR 0320) & State Road (SR 0001)***

The remaining queuing issues are issues that are anticipated to occur without the proposed site. It is TPD's opinion that these queuing issues would require additional lanes on Sproul Road, which would allow for more green time to the side streets where the majority of the remaining queue issues occur. However, these lanes are not feasible since Sproul Road is a bridge over State Road in this area. It should be noted that the ILOS impact of the proposed site is mitigated at this intersection.

**h. *Springfield Road (SR 1009) & State Road (SR 0001)***

The remaining queuing issues are issues that are anticipated to occur without the proposed site. It is TPD's opinion that these queuing issues would require additional lanes on State Road, which would allow for more green time for the left-turn phases the majority of the remaining queue issues occur. However, based on the most recent PennDOT meeting, the Department and Township agreed that, in lieu of mitigation at this intersection, they will accept additional improvements at an alternate location in the study area.

**i. *Springfield Road (SR 1009) & Eagle Road***

No resultant queuing issues remain at this intersection.

**j. *Lawrence Road & Parkway Avenue***

No resultant queuing issues remain at this intersection.

We trust that the responses to each comment are satisfactory. Please feel free to call with any further questions or if additional information is required. Your cooperation in this matter is greatly appreciated.

Respectfully submitted,



A handwritten signature in blue ink, which appears to read "Matthew I. Hammond", is written over a light blue horizontal line.

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

Attachments: Review Letter – February 3, 2015

cc: Fran Hanney, PennDOT  
M. Miele - PennDOT  
L.R. Belmonte - PennDOT  
Joseph Mastronardo, Pennoni Associates  
Joe Romano, Marple Township Director of Code Enforcement  
Adam Matlawski, Esq. – Marple Township Solicitor  
Delaware County Planning Commission  
Bruce Goodman, Goodman Properties  
Chris Anderson, Goodman Properties  
TPD File

Board of Commissioners

Michael K. Molinaro, President  
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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



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February 3, 2015

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

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:

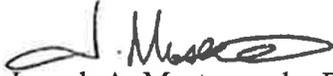
- a. Sproul Road (SR 0320) & Springfield Road (SR 1009)
- b. Sproul Road (SR 0320) & State Road (SR 0001)
- c. Sproul Road (SR 0320) & Crum Creek Road – Reed Road
- d. Springfield Road (SR 1009) & State Road (SR 0001)
- e. Lawrence Road (SR 1020) & Parkway Avenue

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.

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  - 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

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