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Joseph W. McMahon, P.E.

December 2, 2019

Mr. Francis J. Hanney  
Pennsylvania Department of Transportation  
District Traffic Services Manager, Engineering District 6-0  
7000 Geerdes Boulevard  
King of Prussia, PA 19406

RE: **Robinson Tract Residential Development**  
**EPS No. 196830**  
**Westtown Township, Chester County, PA**  
**McMahon Project No. 816451.11**

Dear Mr. Hanney:

McMahon Associates, Inc. is in receipt of the Department's comment letter, dated October 11, 2019, in regards to the *Transportation Impact Study for the Robinson Tract*, prepared by our office and dated August 13, 2019. The development is proposed to be located on the Crebilly Farm property along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania. On behalf of the applicant, below is a summary of the comments in italics, with our responses following each comment.

**General**

*Comment #1: This project must be coordinated with the Department project for improvements to the intersection of SR 0202 and SR 0926 (MPMS No. 95430). Contact the Department's consultant project manager, Paul Valliere, for coordination.*

Response: Complies. The applicant has and will continue to coordinate with the Department with regard to the intersection project.

*Comment #2: PLEASE SUBMIT A CHECK FOR \$100.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.*

Response: Complies. A check will be provided with a future HOP submission when appropriate.

*Comment #3: PennDOT Form M-950MPC, Land Use Questionnaire, must be completed and submitted with all Highway Occupancy Permit applications. (Sections 619.2 and 1105 of the Municipal Planning Code and PennDOT Publication 282, Chapter 3.3)*

*Response: Complies. The form is included in this submission.*

## **Application**

*Comment #1: The application must be submitted in the name of the person who holds fee title to the land or a person who holds an estate or other legal interest in property, such as an easement, a lease, a license, subsurface rights, or an equitable interest under a sales agreement or option to purchase. Submit the supporting documentation with the next submission. (Pa Code Title 67, Chapter 441.3(b) and 441.5(b))*

*Response: Complies. A copy of the Agreement of Sale is included in this submission.*

*Comment #2: The proposed access must be revised from a driveway to a local road classification on the ePermitting application. Please contact Mary Ellen Culhane, District 6 Permits Supervisor, at (610) 205-6825 to have the application modified.*

*Response: Complies. The application has been revised.*

*Comment #3: Please note that consistent with current Department Policy, applicants for Highway Occupancy Permits must apply for an EPS Business Partner ID (BPID). The EPS BPID is to be used in the establishment of a billing account for the invoicing of inspection costs. After an EPS BPID is obtained and activated by the applicant's system administrator, a user ID will then need to be created in order to ensure that the EPS BPID is integrated into EPS and searchable through the "looking glass" feature. Once this has been established, please provide the following information in the applicant contact information tab under "Applicant Team":*

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

*For information on obtaining an EPS BPID, you may visit:*  
*<https://www.dot14.state.pa.us/EPS/home/manageBPRegistration.jsp> (follow the instructions that are in the pink shaded row) or contact the ECMS Help Desk. Please be aware that having an ECMS BPID does not guarantee the establishment of an EPS BPID as they are not reciprocal to one another.*

*Free online tutorials are also available detailing BPID registration at:*  
*<http://www.dot14.state.pa.us/epsTraining/BPID%20Registration%20for%20Municipalities%20and%20Planning%20Commissions.html> Please note that there are two applicable tutorials on the*

*webpage (tabs on the left side bar), one providing info on ECMS registration and one providing info on creating an EPS user.*

Response: Complies. The applicant has completed the BPID registration process. (BPID #015032)

### **Transportation Impact Study/ Transportation Impact Assessment**

*Comment #1a: The intersection of Wilmington Pike (SR 0202) and Skiles Boulevard/Stetson School Drive is projected to have an increase in delay due to diverted traffic in conjunction with the new connector road required for this development. Provide mitigation.*

Response: Based on the revised traffic counts and traffic analysis (as shown in Table 8) with the proposed development and Collector Road diversions, there is no overall impact at the intersection of Wilmington Pike (U.S. Route 202) and Skiles Boulevard / Stetson School per PennDOT criteria. However, as requested by the Township and detailed in the revised TIS, the applicant is committed to providing capacity improvements at the intersection to mitigate the Township's Collector Road traffic impact, subject to the ability to acquire any necessary additional right-of-way. These improvements are described in the Executive Summary of the revised TIS, and documented in the traffic analysis results.

*Comment #1b: Concept plans of full mitigation must be prepared with sufficient detail to describe their feasibility. The plans must also show right-of-way lines. The plan scale should be 50-scale unless otherwise agreed to at the scoping meeting. Ensure that the travel lane and shoulder widths are in accordance with PennDOT's Resurfacing, Restoration and Rehabilitation (3-R) Design Criteria found in PennDOT Publication 13M, Design Manual Part 2. Please note that the concept plan will be reviewed to determine if the recommended improvements are feasible. A full review of the plans will be completed upon submission of the Highway Occupancy Permit (HOP) package.*

Response: Acknowledged. Conceptual roadway improvement plans for the proposed Collector Road intersection along Street Road (S.R. 0926) will be provided in a future submission.

*Comment #2a: This HOP application is expected to include the creation of a medium volume or high volume local road, the addition of a leg to an existing intersection (SR 0926 and Bridlewood Blvd), the addition of a turning lane at an existing intersection (SR 0926 and Bridlewood Blvd), and modification of control at an existing intersection (SR 0926 and Bridlewood Blvd). As such, the applicant shall comply with PennDOT's Intersection Control Evaluation (ICE) Policy. Please refer to Appendix AI of Publication 10X (DM-1X) and the ICE portion of PennDOT's Traffic Signal Portal for additional information, guidance, and standard forms.*

Response: Acknowledged. The ICE Policy evaluation will be provided in a future submission with the conceptual roadway improvement plans.

*Comment #3a: Based on the submitted turn lane warrant analysis, left turn lanes are needed on all 4 approaches at the intersection of Street Road (SR 0926) and New Street. Revise the TIS to provide this improvement and include a conceptual plan to show how it will be constructed.*

**Response:** Based on the new traffic counts and revised traffic projections for this intersection, left-turn lanes are not warranted on the northbound or southbound New Street approaches under any condition. Left-turn lanes along Street Road (S.R. 0926) are warranted under existing conditions. As illustrated in the graphic provided within the revised study in Appendix I, additional right-of-way is required along properties which the applicant does not control in order to provide eastbound and westbound Street Road (S.R. 0926) left-turn lanes. The applicant will contact these property owners in order to determine the feasibility of acquiring the necessary right-of-way. As stated in the revised TIS, the applicant is committed to provide a dedicated westbound Street Road (S.R. 0926) right-turn lane, which can be completed with additional right-of-way from the subject property. It is further noted that the development has no traffic impact at this intersection, as illustrated in Table 6 of the TIS.

*Comment #3b: Based on the turn lane warrant analysis, a right turn deceleration lane is needed on the southbound approach of Wilmington Pike (SR 0202) at W Pleasant Grove Rd. Please update the "Committed Improvements" section of the TIS to identify that the lane will be constructed by the applicant.*

**Response:** Complies. While not required for mitigation, the applicant will provide a dedicated southbound Wilmington Pike (U.S. Route 202) right-turn lane at the West Pleasant Grove Road intersection, which is included in the revised study.

*Comment #3c: The report should include a traffic signal warrant analysis and turn lane warrant analysis section along with summary of results.*

**Response:** Complies. Tables 2,3 and 5 of the revised TIS includes a summary of the traffic signal warrant and turn lane warrant analyses.

*Comment #3d: Please include the input page of the traffic signal warrant analysis in the appendices.*

**Response:** Complies. The traffic signal warrant analysis input page has been provided in Appendix G.

*Comment #4: Side-by-side eastbound and westbound left turn lanes must be provided on W Pleasant Grove Road between Collector Road and Orvis Road.*

**Response:** Left-turn lanes are not warranted and are not needed to achieve acceptable traffic operations, and therefore, are not proposed.

*Comment #5: A dedicated right-turn lane along westbound Street Road (SR 0926) along the Robinson Tract property frontage is proposed but not shown on the Synchro files. Please verify and revise.*

Response: Complies. The future with-development analysis includes a dedicated westbound Street Road (S.R. 0926) right-turn lane at the New Street intersection. Additionally, the off-site improvements section of the TIS has been revised to include the provision of this lane.

*Comment #6a: The report indicates that a signal is warranted at the site driveway access with Street Road, however all Traffic Signal Warrant analyses in Appendix G (all Alternatives) do not indicate whether volumes utilized are for the 2030 Design Year or 2025 Build-Out Year. Please clarify.*

Response: Complies. The traffic signal warrant analysis has been revised to indicate that the 2025 build-out year volumes were utilized in the analysis.

*Comment #6b: If signalization is the chosen alternative for the intersection of Street Road (SR 0926) and Bridlewood Boulevard/ Site Access, it is likely that signalization won't meet warrants for several years while the site is built out. As such, traffic volumes must be monitored during development to determine when a traffic signal is warranted. An intersection monitoring condition statement will be required.*

Response: The intersection is not a Site Access, but rather a Collector Road as requested by Westtown Township, which will serve non-development traffic. Therefore, the revised study includes a traffic signal warrant analysis with only the diverted traffic volumes to the Collector Road (no site traffic), which satisfies the four-hour warrant for signalization.

*Comment #7a: Provide documentation from Westtown Township indicating their review/acceptance of the study.*

Response: Complies. A copy of the Township Traffic Engineer's review letter, dated October 15, 2019 is provided in Appendix A.

*Comment #7b: Provide documentation from Thornbury Township indicating their review/acceptance of the study showing a signalized access along Street Road (SR 0926) opposite Bridlewood Blvd.*

Response: The study was submitted to Thornbury Township. No review letter has been received to date.

*Comment #8: 50 percent of southbound Wilmington Pike (SR 0202) right turns to eastbound Street Road (SR 0926) were diverted to Orvois Way. Provide justification for such a substantial amount of trips.*

Response: Complies. As stated in the revised TIS, all diversion assumptions are based on vehicular travel times along the traditional and diverted routes, in which the diversions were

determined by equalizing these travel times. The details regarding the travel times and diversion assumptions are provided in Appendix K of the revised study.

*Comment #9a: In the Executive Summary and study recommendations, indicate that all improvements will be constructed to accommodate non-motorized access/circulation and be ADA-compliant unless otherwise approved by the Department. Describe how these connections connect to existing nonmotorized facilities (e.g., Township Trails Plan). If pedestrian accommodations are not proposed, engineering justification must be provided in accordance with PennDOT Publications 236, 46, and 149. Walking school children and school bus stops shall also be noted.*

Response: Complies. The study has been revised.

*Comment #9b: The study must describe how the proposed development was designed to accommodate pedestrians, bicycles and transit operations.*

Response: Complies. The study has been revised.

*Comment #10: Provide an updated site plan and/or conceptual improvement plan that reflects all the latest findings of the study and developer commitments.*

Response: Acknowledged. Conceptual roadway improvement plans will be provided in a future submission.

*Comment #11: Provide photographs at all study intersections, including the proposed access driveways. Photos must be in color, 4"X6" in size, and two views of each approach must be provided (approximately 200 feet from the intersection and approximately 50 feet from the intersection showing the opposite approach).*

Response: Complies. Photographs for each of the study intersections has been provided in Appendix B.

*Comment #12a: Contact the municipality to obtain non-reportable crash data for the study area intersections. Include this crash data in the analysis if it is available.*

Response: Complies. Our office is coordinating with the Westtown East Goshen Regional Police Department in order to obtain non-reportable crash information for the study area. At this time, a summary of the total number of crashes at each intersection was provided, which does not provide enough detail to complete a comprehensive crash evaluation. We have requested detailed crash reports from the police department, but have yet to receive the information at the time of submission.

*Comment #12b: The traffic crash data analyses for several of the study area intersections/corridors indicate that crash trends exist, particularly at signalized intersections within the study area. Discuss how*

*traffic generated from the development may impact these locations, and if any improvements would be beneficial in mitigating these trends.*

Response: Complies. The crash data for three study intersections along U.S. Route 202 indicate crash trends exist, which include Street Road (S.R. 0926), Skiles Boulevard/Stetson School Drive and West Pleasant Grove Road. Within the crash data, nearly 75 percent of all crashes at these intersections are rear-end crashes. With construction of the Collector Road through the site, and with no direct site access along U.S. Route 202, the development traffic will be limited along the U.S. Route 202 through these intersections.

Comment #13a: *The available storage for eastbound left turns at Wilmington Pike (SR 0202) and Skiles Boulevard/Stetson School Drive is 200 feet. The future queue with development is 478 feet. This will block the through and right turn movements. Please revise the analysis and recommendations to address this queue.*

Response: As shown in Table 9 of the revised TIS, with implementation of the improvements proposed by the applicant to mitigate the Township's Collector Road traffic impact, the maximum eastbound left-turn queues under future 2030 with-development with improvements are 238 feet and 210 feet, while 200 feet of storage is provided for two left-turn lanes. A graphic illustration of the queues is provided in Appendix U.

Comment #13b: *The available storage for southbound right turns at Wilmington Pike (SR 0202) and Skiles Boulevard/Stetson School Drive is 200 feet. The future queue with development of southbound traffic is 700 feet. This will block the right turn movements. Please revise the analysis and recommendations to address this queue.*

Response: As shown in Table 7 of the revised TIS, the maximum projected southbound Wilmington Pike (U.S. Route 202) right-turn queue at Skiles Boulevard under 2030 future with-development conditions is 215 feet, which is less than one vehicle length greater than the existing available storage.

Comment #13c: *The available storage for southbound left turns at Street Road (SR 0926) and Bridlewood Boulevard/Collector Road is 150 feet. The future queue with development of southbound through/right traffic is 360 feet. This will block the left turn movements. Please revise the analysis and recommendations to address this queue.*

Response: As shown in Table 7 of the revised TIS, the maximum projected Collector Road southbound through/right-turn queue is 415 feet and, due to the relatively low volume of this movement, the southbound left-turn queue is 25 feet. Providing more storage for this lane would result in an excessively long storage area and additional pavement which must be maintained by the Township. The geometric details for the intersection design can be discussed with PennDOT and the Township upon completion of the conceptual improvement plans in a future submission.

### **Sight Distance – Driveways / Local Roads**

*Comment #1: Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for any driveway. It is the designer's responsibility to ensure that this minimum requirement is satisfied. Furthermore, it should also be understood that any comments made (or guidance given) in this correspondence are preliminary in nature and the Department reserves the right to change, alter, withdraw, or amend them as it deems necessary in the future.*

Response: Acknowledged.

### **Signal Section (Publication 46, 148 And 149)**

*Comment #1a: The peak hour warrant would not apply for this location.*

Response: Complies. The traffic signal warrant analysis provided in Appendix G includes an evaluation of the four-hour warrant only.

*Comment #1b: Provide signal plans for review.*

Response: Acknowledged. Traffic signal permit plans will be provided for review in a future submission.

*Comment #1c: Provide a TE-160 form and resolution.*

Response: Acknowledged. A TE-160 form and Township resolution will be provided for review in a future submission.

*Comment #1d: Provide a Traffic Signal Design Report.*

Response: Acknowledged. A Traffic Signal Design Report will be provided for review in a future submission

*Comment #1e: Interconnect proposed signal at Street/Bridlewood and Street/New signal, and provide communications back to the District Office.*

Response: Complies. The traffic analyses and improvement descriptions within the revised study include interconnection.

*Comment #1f: The intersection of SR 0202 and SR 0926 is scheduled to be adaptive under an active state project. The 165-second cycle being proposed is not realistic, even for an adaptive system. This intersection has capacity concerns.*



Response: Complies. Based on coordination with the Department, the cycle length utilized for the Wilmington Pike (U.S. Route 202) intersections, which will be equipped with traffic adaptive signal equipment, has been reduced to 120 seconds under future conditions within the revised study. Correspondence with the Department has been provided in Appendix A.

Comment #1g: *Refer to the TIS comments regarding the left turn warrants at the intersection of Street Road (SR 0926) and New Street.*

Response: Acknowledged.

### **Drainage**

Comment #1: *Please be aware that the installation of drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities. Specific information relating to five potential drainage scenarios, as well each scenario's submission requirements, is presented in Publication 282.*

Response: Acknowledged. Details regarding the installation of drainage facilities within the Legal Right-of-Way will be provided in a future submission.

If there are any questions or if additional information is needed, please feel free to contact me at [nkline@mcmahonassociates.com](mailto:nkline@mcmahonassociates.com) or (610) 594-9995.

Sincerely,



Nicole R. Kline-Elsier, P.E., PTOE  
Regional Service Leader - Traffic

NRKE

cc: Robert Pingar, P.E., Westtown Township  
Will Ethridge, Westtown Township  
Andrew Semon, Toll Brothers  
Michael Downs, P.E., Toll Brothers  
Gregg Adelman, Esq., Kaplin Stewart