



December 27, 2016

Chris Patriarca, Zoning Officer  
Westtown Township  
1039 Wilmington Pike  
West Chester, PA 19382

**RE: *Crebilly Residential Development  
Traffic Engineering Review  
Westtown Township, Chester County, Pennsylvania***

Dear Mr. Patriarca:

As requested, Kimley-Horn has reviewed the following materials provided on behalf of Toll Brothers, Inc. for the Crebilly Residential Development:

- Transportation Impact Study, prepared by McMahon Associates, Inc., dated October 13, 2016.
- Conditional Use Subdivision Plan for Crebilly Farm (Plan A/Proposed Development), prepared by ESE Consultants, Inc., revised December 8, 2016

The proposed development is located on the Crebilly Farm property along the west side of US Route 202, between West Pleasant Grove Road and PA Route 926 (Street Road). The submitted study evaluates three proposed alternatives for the development, however only Alternative A (317 new dwelling units) is currently being considered per the Applicant's most recent communications with the Township. The development is served by a series of internal roadways including several closed loops and three cul-de-sacs. The internal roadways generally appear to be designed to Minor Street standards, providing 24' paved cart ways.

The current plan provides four access points to the surrounding roadways: two unsignalized accesses to West Pleasant Grove Road (opposite Dunvegan Road and Hidden Pond Way), one signalized access to PA 926 (between Bridlewood Boulevard and Caleb Drive) and one restricted access (right-in/right-out) to US 202. The project is projected to generate 2,742 new vehicular trips per day and 266 trips during the evening peak hour. The majority of traffic is anticipated to utilize US 202. However, a significant volume will use the other adjacent roadways.

This review has been completed to determine compliance with applicable Township Code as well as reasonable and customary standards of Traffic Engineering practice. Please note that this review should be considered preliminary and subject to change based on the submission of revised materials to address the comments presented herein.

The following comments are offered to the Township for consideration:

**General**

1. The materials provided to the Township do not clearly demonstrate that peak traffic will be accommodated in a safe and efficient manner, or identify improvements that the applicant is committed to complete or fund. {§170-2009 D(1)(h)}

2. The proposed accesses and improvements along US 202 and PA 926 (Street Road) will require PennDOT approval as well as further action by the Township. The applicant should include the Township in all communications and correspondence with PennDOT.

**Transportation Impact Study**

3. The intersection of New Street and West Pleasant Grove Road should be included in the study. {§149-804.A}
4. The study should include a description of the internal road network, including proposed street width and non-vehicular accommodations.
5. The 2016 traffic volumes should be reviewed to verify the following:
  - a. The null eastbound right turn volume from West Pleasant Grove Road to US 202 during the evening peak period.
  - b. The decreased through volumes along US 202 compared to the most recent previous study of the subject site.
6. Assess the magnitude of traffic associated with the pending Tigie Road residential development within East Bradford Township and include in the study if warranted.
7. Revise the assumed distribution of traffic associated with the Arborview Commercial development to address the anticipated access/roadway connection from West Pleasant Grove Road to Stetson Middle School Drive.
8. Provide quantitative justification for the assumed project build-out based on experience with similar developments.
9. The distribution of project traffic should be revised to consider:
  - a. The location and density of dwellings throughout the site.
  - b. Traffic accessing points north and west via New Street.
10. The capacity analyses should be revised to utilize the appropriate heavy vehicle percentages from the submitted traffic counts.
11. The study should include post-development turn lane warrant analyses for the following intersections:
  - a. PA 926 and New Street
  - b. New Street and West Pleasant Grove Road
  - c. US 202 and West Pleasant Grove Road (southbound right turn only)
12. Provide formal documentation of the status of the pending PennDOT project to improve the intersection of US 202 and PA 926. It is the Township's understanding that the project is still in Preliminary Engineering, not Final Design.
13. The study should include an alternative analysis of US 202 and PA 926 without the anticipated PennDOT improvements.
14. Ensure that the sight distance for the West Pleasant Grove Road accesses are evaluated consistent with Township requirements. {§149-915K(5)} As presented it appears that improvements and/or alternative intersection control (e.g. roundabouts) may be warranted.
15. The study assumes modified traffic signal timings at the intersection of PA 926 and New Street. The analyses should be revised to utilize the current signal timings and the study should note the modified timings as an improvement to be made by the applicant.
16. The study must include a description of the necessary improvements to accommodate future traffic at the intersection of US 202 and PA 926. {§149-804.A(9)}

**Conditional Use Subdivision Plan**

17. The network of internal roadways should be revised to provide a more continuous connection between PA 926 and West Pleasant Grove Road generally consistent with the Township Growth Management Plan except as noted below. {§149-102}
18. The intersections of the continuous connection between PA 926 and West Pleasant Grove Road should be aligned with Bridlewood Boulevard at PA 926 and the future road extension through the Arborview Commercial parcel at West Pleasant Grove Road. {§149-300}
19. It is acknowledged that the Township Growth Management Plan shows an access between the internal connection roadway and US 202 within the Crebilly Farm. Based on the current scope of PennDOT improvements (Arterial in lieu of Limited Access and minor improvements to the intersection of US 202 and PA 926) this access may no longer be appropriate. Consideration should be given to removing the proposed access/Connector Road extension to US 202. {§170-1512.B}
20. The internal roadways appear to provide the minimum 24-foot paved width for a Minor Street. Consideration should be given to requiring additional width or adjacent sidewalks to accommodate pedestrian traffic. {§149-916}
21. The plans should reflect the applicable elements of the Township Trails Plan. {§149-102}

**Items for the Planning Commission to Consider****22. Access**

- a. Adjustments to the location of the West Pleasant Grove Road and PA 926 accesses appear warranted for safety and connectivity.
- b. Alternative control (roundabouts) should be considered for the West Pleasant Grove Road accesses.
- c. Consideration should be given to providing an access to New Street for connectivity and eliminating the US 202 access for safety and regional operations.
- d. Accesses should be designed to include connections identified in the Township Trails Plan.

**23. On-site Circulation**

- a. The internal network should be revised to provide a greater level of connectivity consistent with the goals of the Township's Growth Management Plan and to address various geometric issues.
- b. Additional information regarding the anticipated ownership and operations is required to verify that the proposed widths are adequate.
- c. Perimeter circulation elements of the Township Trails Plan should be provided.

**24. Off-site Impact**

- a. Revisions and supplemental analyses are required to assess the scope of improvements warranted to address the project's impacts.
- b. As presented in this study improvements appear warranted at two intersections (US 202/PA 926 and PA 926/New Street). However, the scope cannot be confirmed based on the materials submitted to date.
- c. Consideration must be given to potential increased volumes on local adjacent roadways and potential means to address adverse impacts.

Please contact me at 267.687.0153 or [albert.federico@kimley-horn.com](mailto:albert.federico@kimley-horn.com) should you have any questions regarding the above.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.



Albert Federico, P.E., PTOE

cc: Robert Pingar, P.E. – Township Manager  
Kristin Camp – Planning Commission Solicitor



February 6, 2017

Chris Patriarca, Zoning Officer  
Westtown Township  
1039 Wilmington Pike  
West Chester, PA 19382

**RE: *Crebilly Residential Development  
Traffic Engineering Review  
Westtown Township, Chester County, Pennsylvania***

Dear Mr. Patriarca:

As requested, Kimley-Horn has reviewed the following materials provided on behalf of Toll Brothers, Inc. for the Crebilly Residential Development:

- o Resubmission correspondence, prepared by McMahon Associates, Inc., dated January 20, 2017, and
- o Transportation Impact Study for the Crebilly Residential Development, prepared by McMahon Associates, Inc., revised January 20, 2017

The proposed development is located on the Crebilly Farm property along the west side of US Route 202, between West Pleasant Grove Road and PA Route 926 (Street Road). The submitted revised study continues to evaluate three proposed alternatives for the development, however only Alternative A (317 new dwelling units) is considered for this review.

This review has been completed to determine compliance with applicable Township Code as well as reasonable and customary standards of Traffic Engineering practice. Please note that this review should be considered preliminary and subject to change based on the submission of revised materials to address the comments presented herein.

The following comments are offered to the Township for consideration:

**General**

1. The revised Transportation Impact Study and associated correspondence only addressed a portion of the comments in the previous review letter dated December 27, 2016.
2. As previously noted the materials provided to the Township do not clearly demonstrate that peak traffic will be accommodated in a safe and efficient manner, or identify improvements that the applicant is committed to complete or fund. {§170-2009 D(1)(h)} Specifically:
  - a. The revised analyses of the intersection of US 202 and PA 926 indicate that the southbound queues will extend beyond the proposed access during both morning and evening peak periods, and beyond West Pleasant Grove Road during the evening peak. This will have a significant impact on the arrival and departure patterns of project traffic.
  - b. The study states that the eastern access to West Pleasant Grove Road will be relocated such that adequate sight distance will be provided, however measurements of sight distance for exiting and entering traffic at the proposed location have not been provided.

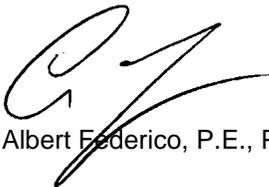
**Transportation Impact Study**

3. The explanation provided for the variation in volumes along US 202 is insufficient given the critical nature of this route. As presented 70% of project traffic will utilize US 202 and the operation of the US 202 and PA 926 intersection will significantly influence the operation of the proposed site accesses. These variations, in some cases exceeding 10% of the critical volumes, warrant additional consideration, both to provide context for the apparent changes in travel patterns and to support other study assumptions such as “regional” growth. This intersection has been the subject of numerous studies over the last several decades by PennDOT, various developers and the Regional Planning Commission. This data should be assembled and reviewed to ensure that the volumes utilized to assess the site accesses and impacts are reasonably accurate.
4. Existing condition peak hour traffic counts are to be collected on a Thursday or Friday during any month from April to November. {§149-804.A(3)(g)}. As part of the Land Development Approval process the applicant should request a waiver from the Township for the counts of New Street and West Pleasant Grove Road.
5. The TIS should include figures and volume development tables for the “Site Access Opposite Bridlewood Boulevard” alternative.
6. The TIS tables should summarize the results of the future build out 2023 analyses to clearly demonstrate that peak traffic will be accommodated in an efficient manner.
7. The study should include post-development turn lane warrant analyses for Alternative A for the off-site study area intersections. Additionally, the study should note locations where project related traffic significantly impact the results.
8. The optimized signal timings used in the analysis for the intersection of Street Road (SR 926) and New Street result in unacceptable increases in delays for the eastbound approach during the morning peak hour. A more balanced traffic signal timing should be utilized.
9. Provide documentation that sight distance requirements for vehicles entering and exiting the site via West Pleasant Grove Road at the East Site Access will be met if the proposed access is relocated to the crest of the vertical curve. Ensure that the sight distance for the West Pleasant Grove Road accesses are evaluated consistent with Township requirements. {§149-915K(5)}.

Please contact me at 267.687.0153 or [albert.federico@kimley-horn.com](mailto:albert.federico@kimley-horn.com) should you have any questions regarding the above.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.



Albert Federico, P.E., PTOE

cc: Robert Pingar, P.E. – Township Manager  
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