

July 13, 2015

Mr. John Nagel
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

PRINCIPALS
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RE: Elk Drive and Planebrook Road Evaluation Reveiw
East Whiteland Township, Chester County
McMahon Project No. 815280.11

Dear Mr. Nagel:

Heinrich & Klein Associates, Inc. completed an evaluation of the intersection of Planebrook Road and Elk Drive, dated July 7, 2015. Among the existing residential streets along Planebrook Road in this area, Elk Drive appears to contain the most homes. Therefore, an operational analysis of this intersection provides a good case study of traffic conditions along Planebrook Road. The other existing neighborhood streets in the area contain less homes, which would equate to less traffic. Therefore, an operational evaluation of the other residential streets should yield similar or even better results.

The following is a summary of key conclusions from the Heinrich & Klein study.

1. Data from the Institute of Transportation Engineers indicates that the homes along Elk Drive would generate approximately 24 trips (6 inbound and 18 outbound) during the weekday morning peak hour and 25 trips (16 inbound and 9 outbound) during the weekday afternoon peak hour. These estimates may be slightly high based on an actual traffic count conducted by Heinrich & Klein.
2. The intersection operates at highly acceptable level of service A overall during the weekday morning and afternoon peak hours, and all movements operate at level of service C or better. The level of service grades correlate to the measure of delay experienced at an intersection. The results realized at this intersection indicate very favorable conditions, for which no operational improvements are necessary. That said, there may be occasions when the peak hour delay experienced by a motorist may be worse than these results, and especially as of lately with the construction along Planebrook Road associated with Route 202. However, during typical peak hour conditions, this intersection operates at acceptable conditions based on accepted traffic engineering parameters. In addition, the results of a gap study previously completed by Heinrich & Klein along Planebrook Road reveal there are more than sufficient gaps

within the Planebrook Road traffic stream to support traffic turning to/from the various side streets along Planebrook Road.

3. Planebrook Road is posted at 35 miles per hour; however, based on a speed study conducted by Heinrich & Klein, it does appear there is a slight speeding problem along this road, with the majority of traffic (85th percentile speed) travelling at or below 42 to 43 miles per hour. Although 15 percent of traffic is travelling above 42 to 43 miles per hour, the majority of traffic is less than ten miles per hour of the posted speed limit, and therefore, these conditions may not be indicative of a serious speeding problem. That said, we defer to the opinion of the police department on this matter.
4. Although there is no need for traffic control improvements based on the favorable level of service results described above, the Heinrich & Klein evaluation includes a review of the objective warrants for a traffic signal and multi-way stop signs at this intersection. The warrants are primarily based on the traffic volumes at the intersection. In short, the intersection does not satisfy any traffic volume warrants for signalization or all-way stop control. The reason is there is insufficient traffic volume exiting Elk Drive to warrant additional traffic control. During the highest commuter peak hours, the estimated or observed traffic exiting Elk Drive does not exceed 20 vehicles. In comparison, in order to warrant a traffic signal, anywhere between 50 to 60 vehicles per hour would be needed to exit Elk Drive over a four to eight hour period of a typical day. Furthermore, in order to warrant all way stop control, 140 vehicles/pedestrians/bicyclists would be needed to exit Elk Drive over an eight hour period of a typical day. Therefore, unless there is a pattern of a crash/safety issue at this intersection, for which we would defer to the police department, based on the traffic volumes, and the favorable level of service results, this intersection does not warrant traffic control changes.
5. Heinrich & Klein also completed a sight distance evaluation. Based on their findings, there is more than adequate sight distance for traffic entering and exiting Elk Drive in accordance with PennDOT criteria.

Based on our review of the Heinrich & Klein evaluation, there is no recommendation to implement traffic control changes at the intersection of Planebrook Road and Elk Drive at this time.

Furthermore, we understand the proposed residential development of the Celia Tract and the Cockerham Tract will generate additional traffic to the area; however, with access to both Planebrook Road and Frame Avenue, this new traffic will be efficiently distributed in all directions. The added traffic from these developments will not be concentrated on any one

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road, and the level of added traffic is not anticipated to result in substandard operations (levels of service) at any of the surrounding intersections.

If there are any questions regarding any of the above comments, please do not hesitate to contact our office.

Sincerely,

A handwritten signature in cursive script that reads "Christopher J. Williams".

Christopher J. Williams, P.E.

Vice President & General Manager – Exton

CJW/ab

cc: Terry H. Woodman, East Whiteland Township
Eric Reed, East Whiteland Township
Andreas Heinrich, P.E., PTOE, Heinrich & Klein Associates, Inc.
John A. Jaros, Esq., Riley Riper Hollin & Colagreco
Victor Kelly, Jr., P.E., Commonwealth Engineers, Inc.
Scott Risbon, Earth Care, Inc.