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PLEASE REPLY TO PA OFFICE

October 29, 2010

Ms. Anne W. Klepfer, Township Manager
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Re: Traffic Engineering Review – McClennen Property Residential Development
East Rockhill Township, Bucks County, Pennsylvania
HCA File No. 10-096

Dear Ms. Klepfer:

Pursuant to your request, Horner & Canter Associates has completed a traffic engineering review for the McClennen Property Residential Development located along Old Bethlehem Pike and Hill Road in East Rockhill Township, Bucks County, Pennsylvania. The following was provided for our review:

- Traffic Impact Study for the McClennen Property Residential Development, prepared by Heinrich & Klein Associates, Inc., dated July 2010
- Sketch Plan, prepared by Kennedy & Associates, dated 7/19/10
- Traffic Accident Reports for the Intersection of Three Mile Road/Old Bethlehem Pike

We offer the following comments for your consideration:

1. The Traffic Impact Study was generally conducted in accordance with accepted traffic engineering methodologies. We have compared the study to the Traffic Impact Study requirements contained in the East Rockhill Township Subdivision and Land Development Ordinance (SALDO) Section 22-406 and found several areas where additional information is required:

   a. The general site description should provide an anticipated completion date for the project and should address whether the construction will be phased. (Section 22-406 5.A.)

b. The study should include documentation of the proposed internal transportation system, including vehicular, bicycle and pedestrian circulation, internal roadway widths and rights-of-way, parking conditions and intersection traffic control. (Section 22-406 5.B.)

c. The description of the external roadway system should include an identification of any limitations that may adversely affect access to the site during an emergency. (Section 22-406 5.B.)

d. All intersections included in the study area should be identified and sketched. (Section 22-406 5.B.)

e. Existing average daily traffic for the study area roadways should be documented and included within the study. (Section 22-406 5.C.(1))

f. A summarization of the most recent five-year accident data within the study area shall be provided if required by the Township. (Section 22-406 5.C.(3))

g. Roadway and intersection improvements committed by others should be included in the analysis. (Section 22-406 5.D.(3))

h. A queuing analysis shall be included in the study. (Section 22-406 5.F.(3))

i. Traffic calming improvements shall be incorporated as part of all improvement designs. (Section 22-406 5.G.(5))

2. The traffic study included the following intersections:

- Park Avenue/Three Mile Run Road
- Old Bethlehem Pike/Three Mile Run Road
- Old Bethlehem Pike/Park Avenue
- Old Bethlehem Pike/Rockhill Road/Weikel Road
- Three Mile Run Road/Hill Road
- Rockhill Road/Hill Road
- Hill Road/Stone Edge Road

We concur that these intersections should be included in the study. However, the study area should be expanded to also include the following intersections:

- Old Bethlehem Pike/Ridge Road
- Old Bethlehem Pike/Forrest Road
- Old Bethlehem Pike/Green Top Road
- Old Bethlehem Pike/Rich Hill Road
- Ridge Road/Park Avenue

3. The traffic counts on which the study is based were completed in June 2010. Clarification should be provided as to whether school was in session on the days that the traffic counts were completed. If it was not in session, there should be some information provided in the study to address the seasonal impact on traffic volumes.

4. The study provides the results of a detailed capacity analysis for the study area intersections. The results of this analysis indicate that all study intersections are currently operating at acceptable Level of Service (LOS) A, B or C during the peak periods. We have reviewed the methodology and results of the existing conditions analysis presented in the study and find them to be an acceptable representation of the intersection operations from a capacity standpoint.

5. The study should address non-LOS aspects of each of the study area intersections and roadways, such as sight distance, geometric configuration, accident history, etc. Areas of particular concern to the Township are the impact of the site-generated traffic volumes on the bridge structures within the study area and the accident history at the three intersections formed by Old Bethlehem Pike/Three Mile Run Road/Park Avenue. In addition, the applicant should investigate the needs/warrants for multi-way stop signs at various locations along Old Bethlehem Pike.

6. One specific area of concern at the intersection of Ridge Road/Park Avenue is the existing signal timing and the impact of the site-generated traffic on the signal operation. The applicant should provide recommendations for signal timing modifications, if needed.

7. A specific area of concern at the intersection of Ridge Road/Old Bethlehem Pike is the back-up of traffic through this intersection from the adjacent traffic signal at Ridge Road/Bethlehem Pike. The applicant should evaluate the site traffic impact on this condition.

8. The applicant should address the structural condition and width of the Hill Street bridge to the south of the proposed site access as it may be affected by the additional traffic generated by this development.

9. The applicant should investigate modifications to the Three Mile Run/Park Avenue/Old Bethlehem Pike intersections which will discourage traffic from diverting from Old Bethlehem Pike to Ridge Road.

10. The traffic study indicates that the site will generate approximately 1770 daily trips and 137 AM peak hour trips and 166 PM peak hour trips. We have reviewed the site traffic generation calculations and find them to be an appropriate representation of the of the peak hour traffic generation.

11. The traffic study states that the distribution of the site-generated traffic was based on the existing traffic patterns. Additional documentation should be provided to support the distribution percentages that are provided in the report.

12. No reference is made in the study to other approved or potential developments that will have an effect on the study area prior to the ultimate build-out of the site. The study should address other developments in both East Rockhill Township and West Rockhill Township or provide confirmation that this was researched and that there are none noted.

13. The traffic study provides a comparison of the future 2017 post-development LOS results with the future 2017 pre-development results. The results indicate that all LOS at the study intersections will continue to operate within the Ordinance-defined design threshold (LOS D or better). There are three locations where the post-development LOS decline relative to the pre-development LOS. For these locations (Park Avenue/Three Mile Run Road, Old Bethlehem Pike/Three Mile Run Road and Old Bethlehem Pike/Park Avenue) the Ordinance requires that mitigation be identified to address these LOS declines. (Section 22-406 5.G.(1))

14. The development proposes two accesses, one intersecting Old Bethlehem Pike and one intersecting Hill Road directly opposite Stone Edge Road. We concur with the provision of two accesses to serve this development and we are in general agreement with the access layout as presented on the Concept Plan.

15. The Old Bethlehem Pike access <u>must</u> be located such that appropriate sight distance is available in both directions to allow for safe ingress and egress. The traffic study states that sight distance is met based on the posted speed limit of 35 miles per hour on Old Bethlehem Pike. A speed study should be provided to measure the 85th percentile travel speeds on Old Bethlehem Pike to ensure that desirable sight distance is attainable.

16. The study finds that a separate left-turn lane along Old Bethlehem Pike is warranted to accommodate inbound left-turns into the development. We agree with this recommendation and would advise that the applicant bear full responsible for its implementation. A conceptual layout of this left-turn lane should be submitted for review and consideration.

17. The Hill Road access is aligned directly opposite Stone Edge Road. Given the various factors to consider (i.e. sight distance, property frontage limitations), we concur with the location of this access to form a four-way intersection with this existing residential roadway. However, this alignment may enhance the likelihood for use of both roadways as cut-through roads between Three Mile Run Road and Old Bethlehem Pike. To address this concern, the applicant should evaluate traffic calming measures or internal roadway realignment to control speeds and reduce cut-through demands.

18. The study concludes that there are no auxiliary turn lanes warranted at the Hill Road access intersection. We concur with this finding, but would recommend that the

existing pavement section of Hill Road along the property frontage be widened to meet the minimum cartway/shoulder standards for local roads within the Township.

19. Both access intersections must be designed to accommodate the largest vehicle anticipated to enter/exit the development (including emergency vehicles). A truck turning template plan should be provided to illustrate that the intersection configuration will meet the large vehicle requirements.

20. The applicant should demonstrate that viable truck access and circulation through the townhouse section of the development is provided.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

David H. Horner, P.E., PTOE

DHH/mac

cc: East Rockhill Board of Supervisors
East Rockhill Planning Commission
Steven Baluh, P.E.