

29-0196-110
January 12, 2018

Mr. Frank Smeriglio, P.E.
Town Engineer
Town of Trumbull
5866 Main Street
Trumbull, CT 06611

Re: **Review of Traffic Impact Study and Site Plan**
Paugusset Village
147 Daniels Farm Road (State Route 734), Trumbull, CT

Dear Mr. Smeriglio,

As requested, Tighe & Bond has performed a peer review of traffic impact study and site development plan associated with the proposed Paugusset Village residential development at 147 Daniels Farm Road (State Route 734). Tighe & Bond has reviewed the following documents with regards to traffic operations and site access:

- Traffic Study – Proposed Residential Development – 147 Daniels Farm Road, Trumbull, Connecticut, prepared by Frederick P. Clark Associates, Inc., dated October 17, 2017
- Paugusset Village Site Plan, 147 Daniels Farm Road, Trumbull, Connecticut, prepared by Spath-Bjorklund Associates, Inc., dated October 18, 2017
- Paugusset Village Line of Sight Plan and Profile, 147 Daniels Farm Road, Trumbull, Connecticut, prepared by Spath-Bjorklund Associates, Inc., dated October 18, 2017

Project Description

Per the provided documents, the project is to demolish one existing single-family house, reconfigure the site, and build 32 new single-family homes at 147 Daniels Farm Road. Access to the site will be via a private site roadway on the west side of Daniels Farm Road. Each home will have an individual driveway and garage to the new internal roadway. The site will provide 2-car garage and 2 parking spaces within the driveway spaces for each home plus a total of 16 visitor spaces throughout the area. The project is expected to be constructed and occupied by the end of 2019.

Traffic Study Review Comments

Based on the information provided, FP Clark has conducted a traffic impact study that is largely consistent with industry standard methodology. The following comments are offered to facilitate review of the study by the Town.

1. Study Area – per industry standards, the study area included only the intersection of the proposed site driveway at Daniels Farm Road. If desired by the Engineering Department or the Planning and Zoning Commission, a review of the adjacent roadway intersections could be considered to quantify the impacts of the site traffic on the local intersections.
2. Traffic Volumes – automatic traffic recorder (ATR) counts were collected from September 25, 2017 to October 2, 2017 on Daniels Farm Road adjacent to the site frontage. The counts were collected on days free from severe weather and when the schools were in

session. The ATR data vehicle classification analysis should be provided, identifying the percentage of heavy vehicles traveling the Daniels Farm Road, as it is designated as State Route 734. This information is required to prepare accurate traffic capacity analyses (See Comment #9).

According to the ATR data, the typical weekday peak hours were identified as 7:00 to 8:00 A.M. in the morning and 5:00 to 6:00 P.M. in the afternoon. These peak hour periods are appropriate for the project. The daily traffic volumes on Daniels Farm Road in vicinity of the site were also identified during a typical weekday in 2017 and shown in Figure 4. However, a summary of Connecticut Department of Transportation (CTDOT) average daily traffic data should be provided, examining the historical trend of traffic volumes in the project area in comparison to the collected ATR data. CTDOT has average daily traffic data on Daniels Farm Road adjacent to the site available for year 2013, 2010, and 2007 to verify the correlation between State data and data provided in the Study.

3. Collision History – the traffic study provided a summary of the collision data obtained from CTDOT and Connecticut Crash Data Repository (CCDR) on Daniels Farm Road in vicinity of the site. The collision history was reviewed for a period between January 1, 2014 and December 31, 2016. The available crash data from 2017 should be added, as data is available through the CCDR and the study should consider traffic collision data for the most recent three years of available data.
4. 2019 No Build Traffic Volumes – future No Build traffic volumes were estimated to reflect the ambient traffic conditions during the year of site completion but without the site traffic volumes as shown in Figure 5. An annual growth rate of two percent per year was employed to 2019 to estimate the ambient traffic growth between 2017 and 2019. The two percent annual growth rate is conservative when compared to the growth rates shown by available CTDOT ADT data in the local area. The methodology for selecting the 2 percent annual growth rate should be provided and verified with CTDOT Bureau of Policy and Planning. A planned development at 965 White Plains Road was included in future No Build traffic conditions. This inclusion is appropriate for a standard traffic assessment.
5. Site Traffic Generation - The traffic study utilized trip generation data in the industry standard publication, *Trip Generation – 9th Edition*, by the Institute of Transportation Engineers (ITE), to estimate the volume of traffic accessing the site during the peak hours. The data estimates that the 32 single-family houses will generate 32 trips (8 in, 24 out) during the weekday morning peak hour and 38 trips (24 in, 14 out) during the weekday afternoon peak hour. The methodology to estimate the site generated traffic is appropriate.
6. Intersection Sight Distance – the study reviewed intersection sight distances in accordance with Town and State Standards. Based on the 85th percentile speeds 44 miles per hour (mph) traveling northbound and 46 mph traveling southbound on Daniels Farm Road, sight distances of 489 feet of visibility looking left (north) and 511 feet of visibility looking right (south) are required. A review of Line of Sight Plan and Profile prepared by Spath-Bjorklund Associates, dated October 18, 2017, indicates that the available intersection sight lines exceed the requirements.
7. Trip Distribution - the site generated trips were distributed to the roadway network based on the existing traffic patterns on Daniels Farm Road. The study estimated that during the weekday morning peak hour, 50 percent of the site traffic would be oriented to/from the north while the remaining 50 percent would be oriented to/from the south

on Daniels Farm Road. During the weekday afternoon peak hour, 46 percent of the site traffic would be oriented to/from the north while the remaining 54 percent would be oriented to/from the south on Daniels Farm Road. Due to the proximity of the Route 25 interchange, approximately 0.3 miles north of the site, and its ability to connect to other major regional routes, there may be a higher percentage of site traffic oriented to/from the north on Daniels Farm Road compared to the existing traffic stream distributions. However, revisions to the distribution are not likely to significantly change the results of the capacity analysis.

8. 2019 Build Traffic Volumes - the 2019 Build traffic volumes, shown in Figure 10, should be revised with respect to any revisions to the 2019 No Build traffic volumes and site generated trips per previous comments.
9. Capacity Analysis – traffic capacity analyses were prepared in accordance with industry standards and prepared with Synchro 10 Software utilizing the Highway Capacity Manual 6th Edition Methodology. As mentioned in Comment 2, the heavy vehicle percentages utilized for the capacity analyses should be confirmed with the ATR classification analysis. In addition, to verify the results of the traffic analyses, the peak hour factor utilized should be confirmed, as it was set at the default value of 0.92.

A summary of the traffic operation analyses performed for the site driveway intersection with Daniels Farm Road under 2019 Build traffic conditions is provided in Table 4. The analysis indicates that the exiting movements from the site driveway onto Daniels Farm Road are expected to operate at Level of Service (LOS) C during both weekday morning and afternoon peak hours. The northbound left-turn movement from Daniels Farm Road into the site is expected to operate at LOS A with minimal vehicle queues. This represents acceptable traffic operations for a residential driveway to a minor arterial roadway.

Site Plan Review Comments

Tighe & Bond has reviewed the Paugusset Village Site Plan prepared by Spath-Bjorklund Associates, dated October 18, 2017, and offer the following comments to facilitate review of the Site Plan by the Town.

1. The site includes three perpendicular visitor parking spaces and a mailbox access loop immediately adjacent to the egress point from/to Daniels Farm Road. Alternative locations should be considered to relocate the parking area and mailbox loop to avoid potential operational issues with the driveway intersection with Daniels Farm Road.
2. Further review should be conducted to determine if the proposed crosswalk on Daniels Farm Road is appropriate given the nature of the high travel speeds on Daniels Farm Road and the limited pedestrian activity in the area. If the crossing is installed, handicapped sidewalk ramps and appropriate pedestrian crossing warning signage should be provided.
3. The proposed construction activities within the Connecticut Department of Transportation (CTDOT) Right of Way will require approval and issuance of an encroachment permit from CTDOT District 3. Preliminary review of the plans by CTDOT should be considered during the Town review process to avoid potential issues following Town approval.

We hope this review is helpful in in your review of the proposed residential development at 147 Daniels Farm Road. Please let us know if you have any questions or concerns.

Sincerely,

TIGHE & BOND, INC.



Jianhong Wang, P.E.
Senior Engineer



Dana C. Huff, P.E
Vice President

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