

November 30, 2018

Mr. Charles Blaichman
Hudson Valley Rhinebeck, LLC
161 Chrystie Street
New York, NY 10007

c/o Matthew Rudikoff
via email: mrudikoff@rudikoff.com

RE: Traffic Impact Analysis Addendum, Rock Ledge, Town of Rhinebeck, Dutchess County, New York; CM Project No. 114-053

Dear Mr. Blaichman:

Creighton Manning Engineering, LLP (CM) has prepared this Addendum to the April 20, 2018 *Traffic Impact Analysis* for the proposed *Rock Ledge* project located on Ackert Hook Road in the Town of Rhinebeck. This Addendum is based on the latest Site Plan prepared by Mark R. Graminski, P.E. L.S. P.C., Consulting Engineer & Land Surveyor, included with this December 3 submission.

1.0 Project Description

The proposed project was originally analyzed for 28 multifamily residential units as well as a 12-room Country Inn, which was addressed in a *Traffic Impact Analysis* letter report prepared by CM dated April 20, 2018. The proposed update will account for an additional 8 multifamily residential units and will no longer include the Country Inn when compared to the previous site plan. Access to the site will remain as previously analyzed, which includes reutilization and improvements to the existing driveways on Ackert Hook Road.

2.0 Traffic Forecasts & Assessment

Trip Generation

Trip generation determines the quantity of traffic expected to travel to/from a given site. The Institute of Transportation Engineers (ITE) *Trip Generation, 10th edition*, is the industry standard used for estimating trip generation for proposed land uses based on data collected at similar uses. Friday PM peak hour trips were estimated using the ITE trip generation rate for Recreational Homes (ITE land use code (LUC) 260) for the condominiums, and an average of the ITE trip generation rates for Hotel (LUC 310), All Suites Hotel (LUC 311), and Motel (LUC 320) for the Country Inn in the previous study. Since the Country Inn is no longer proposed as part of the project, the updated Friday PM peak hour trips were estimated using only the ITE trip generation rate for LUC 260 for the condominiums. The rate of trips generated per condominium unit was calculated and applied to full build-out of the site. The trip generation estimate of the proposed project based on the updated land uses and a comparison to both the trip generation of the originally proposed land uses as well as the trip generation of the former *Daytop* residential drug treatment facility, which had been analyzed in the previous study, are shown in Table 1.

Table 1 – Trip Generation Summary Comparison

| Land Use | Friday PM Peak Hour | | |
|--|---------------------|------------|------------|
| | Enter | Exit | Total |
| Former Site Traffic | | | |
| Drug Treatment Facility | 3 | 6 | 9 |
| Previously Proposed Site Traffic (April 20, 2018 Letter Report) | | | |
| Country Inn | 3 | 2 | 5 |
| 28 Condominiums | 18 | 13 | 31 |
| Previously Proposed Land Uses Trip Generation | 21 | 15 | 36 |
| Difference Between Former and Previously Proposed | +18 | +9 | +27 |
| Updated Proposed Site Traffic | | | |
| 36 Condominiums | 24 | 16 | 40 |
| Difference Between Former and Updated Proposed | +21 | +10 | +31 |
| <i>Difference Between Previously Proposed and Updated Proposed</i> | <i>+3</i> | <i>+1</i> | <i>+4</i> |

The trip generation summary shown in Table 1 indicates that the updated proposed project (36 condominium units) will generate 40 total trips during the Friday PM peak hour (24 entering and 16 exiting). This indicates that the site will generate 4 more trips during the Friday PM peak hour when compared to the trip generation estimate included in the April 20, 2018 *Traffic Impact Analysis* letter provided for the originally proposed project.

Traffic Operations

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Intersection evaluations were made using the Synchro 10 software which automates the procedures contained in the *Highway Capacity Manual*. Levels of service range from A to F with LOS A considered excellent with very little delay while LOS F represents conditions with very long delays. Table 2 shows the results of the updated Level of Service and delay calculations as compared to both the existing and previously proposed conditions for the Friday PM peak hour.

Table 2 – Level of Service Summary Comparison

| Intersection | Control | Friday PM Peak Hour | | |
|---|---------|---------------------|------------------|-----------------|
| | | Existing | Build – Previous | Build – Updated |
| Primrose Hill Road/Ackert Hook Road | U | | | |
| Primrose Hill Road EB L | | A (7.2) | A (7.3) | A (7.3) |
| Primrose Hill Road WB L | | A (7.2) | A (7.2) | A (7.2) |
| Ackert Hook Road NB LTR | | A (9.0) | A (9.1) | A (9.1) |
| Ackert Hook Road SB LTR | | A (9.1) | A (9.1) | |
| Ackert Hook Road/Ackert Hook Road Extension | U | | | |
| Ackert Hook Road Extension EB LR | | A (8.6) | A (8.8) | A (8.8) |
| Ackert Hook Road NB L | | A (0.7) | A (0.3) | A (0.3) |
| Primrose Hill Road/Ackert Hook Road Extension | U | | | |
| Primrose Hill Road EB L | | A (7.3) | A (7.3) | A (7.3) |
| Ackert Hook Road Extension SB LR | | A (8.5) | A (8.5) | A (8.5) |
| Primrose Hill Road/Haggerty Hill Road | U | | | |
| Primrose Hill Road EB L | | A (7.2) | A (7.2) | A (7.2) |
| Haggerty Hill Road East Leg SB L | | A (8.6) | A (8.7) | A (8.7) |
| Haggerty Hill Road West Leg SB R | | A (8.3) | A (8.3) | A (8.3) |
| Haggerty Hill Road West Leg EB L | | A (8.6) | A (8.7) | A (8.7) |
| US Route 9/Haggerty Hill Road | U | | | |
| Haggerty Hill Road WB LR | | B (10.6) | B (10.5) | B (10.5) |
| US Route 9 SB L | | A (8.2) | A (8.2) | A (8.2) |
| Ackert Hook Road/Site Driveway | U | | | |
| Site Driveway EB LR | | -- | A (8.6) | A (8.6) |
| Ackert Hook Road NB L | | -- | A (7.3) | A (7.3) |

Key: X (Y.Y) = Level of Service (Delay, seconds per vehicle).
 U = Unsignalized intersections.
 NB, SB, WB, EB = Northbound, Southbound, Westbound, Eastbound intersection approaches.
 LTR = Left-turn, through, and/or right-turn movements

Table 2 shows that there will be no change in level of service or average vehicle delay on any intersection movement with the update to the originally proposed project. Consistent with the original analysis, no site-specific geometric mitigation is recommended at any of these locations.

Roadway Assessment

Recognizing that the level-of-service analysis shows no traffic impact based on accepted traffic engineering methodologies, and because of neighborhood traffic concerns, an additional qualitative assessment was completed to assess livability and quality of life traffic impacts. As described in the April 20, 2018 *Traffic Impact Analysis* letter provided for the originally proposed project, the study area roadways are environmentally rated as “Good” to “Excellent” for residential roads. Table 3 summarizes the results of the roadway segment volume assessment for the previous condition and the updated proposal.

Table 3 – Build Condition Daily Volume Summary Comparison

| Location | K* Factor | Site Generated Traffic (vehicles) | | Daily Segment Volumes (vehicles) | | |
|--|--------------|---|-----------------------------|----------------------------------|----------------------------------|--------------------------------|
| | | Friday PM Peak Hour Trips – Update | Daily Volume – Update | Existing Conditions | Build Condition – Previous | Build Condition – Update |
| 1. Haggerty Hill Rd 750 ft west of Primrose Hill Rd | 0.09 | 13 | 145 | 275 | 410 | 420 |
| 2. Primrose Hill Rd 250 ft east of Haggerty Hill Rd | 0.08 | 15 | 190 | 390 | 565 | 580 |
| 3. Ackert Hook Rd 600 ft south of Primrose Hill Rd | 0.05 | 2 | 40 | 185 | 225 | 225 |
| 4. Primrose Hill Rd 1,100 ft east of Ackert Hook Rd | 0.07 | 13 | 185 | 455 | 625 | 640 |
| 5. Ackert Hook Rd 350 ft north of Springwood Dr | 0.09 | 30 | 335 | 215 | 525 | 550 |

* "K factor" is the proportion of annual average daily traffic (AADT) occurring during the peak hour.

Based on the environmental rating threshold volumes outlined in the April 20, 2018 *Traffic Impact Analysis*, there will be no additional change in the environmental rating of any roadway segments as a result of this update, as compared to the originally proposed project. A review of roadway conditions indicates that all roads previously projected to operate Excellent, Good or Acceptable from a traffic environmental quality standpoint, will operate at the same levels as part of this site plan update.

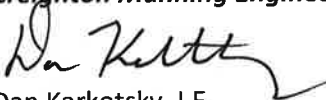
Furthermore, recreational homes do not have the same trip generation characteristics as traditional homes. A review of ITE land use code 260 (recreational home) shows that recreational homes peak on Friday afternoons, and do not exhibit typical peaks during the weekday commuter time periods. Consequently, the number of peak periods and amount of traffic through-out the week is far less than if this site were developed with a comparable number of traditional homes.


3.0 Conclusions

This Addendum assesses the traffic impacts of the latest site plan which eliminates the proposed Country Inn, and adds eight (8) more residential units, generating four (4) more peak hour trips during the Friday PM peak hour than the original proposal. The analysis shows that the conclusions of the previous study remain valid.

If you have any questions regarding the above analysis, please feel free to contact our office.

Respectfully submitted,
Creighton Manning Engineering, LLP


 Dan Karkotsky, I.E.
 Project Engineer


 Mark Sargent, P.E.
 Project Manager

Attachments