



October 21, 2025

Ms. Alison Manugian  
Community Development Director  
Town of Dracut  
62 Arlington Street  
Dracut, MA 01826

**Subject: Traffic Engineering Peer Review  
Dracut Apartments  
2041 Bridge Street  
Dracut, Massachusetts**

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Dear Ms. Manugian:

On behalf of the Town of Dracut (the Town), Green International Affiliates, Inc. (Green) is submitting this letter to report the findings from our traffic engineering peer review of the application package for the proposed development. The proposed development consists of forty (40) rental units, including ten (10) affordable units. The proposed development is on a 230,868 square foot (sf) site located on Bridge Street (Route 38) and Marsh Hill Road in the Town of Dracut. The proposed development will include eighty-one (81) parking spaces. The scope of our review included performing two (2) reviews of the Comprehensive Permit Application under this proposal: an initial review of the application, and a second review of the revised application.

This review included an examination of the following documents submitted in support of the proposed project:

- Document titled “Application for a Comprehensive Permit” prepared by The RENO Companies, dated April 3, 2025, and containing sixty-nine (69) sheets;
- Plans titled “Ex 3 Site Development Plans”, prepared by Hancock Survey Associates, Inc, dated February 28, 2025, and containing eight (8) sheets;
- Document titled “Traffic Impact and Access Study & Stormwater Report” prepared by The RENO Companies, dated January 8. 2024, and containing forty-three (43) sheets;

In addition to the above documents, Green visited the project site and surroundings on August 21<sup>th</sup>, 2025, to gain a better understanding of the existing conditions and the context of the proposed project. Our review evaluated the documents for consistency with typical industry practices for traffic studies, the Town of Dracut’s regulations and general bylaws, and American with Disabilities Act (ADA) and Massachusetts Architectural Access Board (AAB) design standards.

Green offers the following comments resulting from our initial review of the Traffic Impact and Access Study & Stormwater Report (TIAS) and concerns put forth by the Planning Board:

1. Green concurs with the study area and intersections for the analysis.

*Fuss & O'Neill Response: Fuss & O'Neill concurs.*

**Green Response: We find this response acceptable and no further information is required.**

2. The TIAS or Comprehensive Permit did not include an appendix with relevant data to the analysis, thus Green was not able to review the raw data or calculations. Green requests that the traffic impact calculations be provided in the appendix.

*Fuss & O'Neill Response: Included with this response letter is a full Appendix, updated as appropriate based on comments within the Green comment letter.*

**Green Response: We find this response acceptable and no further information is required.**

3. The TIAS identified the segment of Bridge Street within the study area as a "rural minor arterial." Upon reviewing the "MassDOT Road Inventory Viewer" provided by MassDOT "MygeoDOT" GIS database Bridge Street is identified as a "Principal Arterial - Other." Upon reviewing the "Urban Boundaries 2020" provided by the "MassGIS Data Hub" the project location is within the Boston, MA-NH urbanized area. Thus, Green concludes that Bridge Street is classified as an Urban Principal Arterial - Other. Upon reviewing the "MassDOT Road Inventory Viewer" provided by MassDOT "MygeoDOT" GIS database Marsh Hill Road is identified as a "Major Collector." Marsh Hill Road is within the Boston, MA-NH urban boundary. Thus, Green concludes that Marsh Hill Road would be classified as an Urban Major Collector.

*Fuss & O'Neill Response: Fuss & O'Neill concurs.*

**Green Response: We find this response acceptable and no further information is required.**

4. Cross Road and Old Pasture Road are included in the study intersection analysis. Green recommends including an existing conditions roadway description for Cross Road and Old Pasture Road. Green recommends providing lane widths for the study roadways. The TIAS identified the "Bridge Street at Marsh Hill Road and Cross Street" as a study intersection. Green concurs with the general intersection description; however, the west leg of the intersection is "Cross Road."

*Fuss & O'Neill Response: Following is a summary of existing conditions of Cross Road, Old Pasture Road and the intersection of Bridge Street, Marsh Hill Road and Cross Road.*

#### Roadways

##### *Bridge Street*

*Bridge Street is a two-lane, Urban Principal Arterial under the jurisdiction of the Town of Dracut. Bridge Street traverses the study area in a general north/south direction*

*through the Town of Dracut. Travel lanes are generally twelve (12) to thirteen (13) feet wide and are separated by a double yellow centerline. Marked shoulders are also provided. The posted speed limit on Bridge Street in the vicinity of the site is 35 miles per hour (mph). Land use along Bridge Street in the study area consists of residential properties and commercial uses.*

#### *Marsh Hill Road*

*Marsh Hill Road is a two-lane, Urban Major Collector under the jurisdiction of the Town of Dracut. Marsh Hill Road traverses the study area in a general east/west direction from Bridge Street easterly to Broadway Road (Route 113). Travel lanes are generally twelve (12) feet wide. The posted speed limit on Marsh Hill Road in the vicinity of the site is 30 mph. Land use along Marsh Hill Road in the site vicinity consists of residential properties.*

#### *Cross Road*

*Cross Road is a two-lane, Urban Major Collector under the jurisdiction of the Town of Dracut. Cross Road traverses the study area in a general east/west direction from Bridge Street westerly to its terminus at the intersection with Colburn Avenue. Travel lanes are generally twelve (12) feet wide. The posted speed limit on Cross Road is 30 mph. Land use along Cross Road consists of residential properties.*

#### *Old Pasture Road*

*Old Pasture Road is a two-lane, Local Street under the jurisdiction of the Town of Dracut. Cross Road traverses the study area in a general north/south direction from Marsh Hill Road to its terminus just beyond the intersection with Butternut Road. Travel lanes are generally twelve (12) feet wide. There is no posted speed limit on Old Pasture Road. Land use along Old Pasture Road consists of residential properties.*

Intersections

*Bridge Street, Cross Road and Marsh Hill Road*

*Bridge Street forms the north and south legs of this four-legged intersection with Cross Road (west leg) and Marsh Hill Road (east leg). The Bridge Street approaches each consist of an exclusive left-turn lane and a shared through/right-turn lane. The Cross Road approach consists of a single lane and permits all movements. The Marsh Hill Road approach consists of a single lane and permits all movements. The intersection is controlled by a traffic signal. Land use in the vicinity consists of the site and residential and commercial properties.*

**Green Response: We find this response acceptable and no further information is required.**

5. In the executive summary and in Section 2, the TIAS indicates that the traffic counts were collected in November 2023. The traffic counts consisted of automatic traffic recorders (ATRs) and turning movement counts (TMCs). Green concurs with applying the seasonal factor. Green recommends including the traffic count narrative in the “Section 2 - Existing Traffic Volume” as well for consistency. The narrative is in the “Executive Summary” while the data is in “Section 2 - Table 1.”

*Fuss & O'Neill Response: The narrative in the “Executive Summary” is also included in the text of Section 2 prior to the data summarized in Table 1.*

**Green Response: We find this response acceptable and no further information is required.**

6. The TIAS or Comprehensive Permit did not include an appendix with relevant data to the analysis, thus Green was not able to review the raw data or calculations. In order to determine the Seasonal Adjustment Factor that was referenced, Green reviewed the 2019, 2021, 2022, 2023, 2024 MassDOT Weekday Seasonal Factors. The TIAS indicated that, “November volumes to be slightly lower than average month conditions. Therefore, the November traffic volumes were adjusted upward by a factor of 1.012 and used to represent average month conditions.” As previously noted, Green concurred that the roadway classification for Bridge Street was inconsistent with MassDOTs resources. Green referred to the U3 or Urban Principal Arterial calculation to evaluate if a seasonal adjustment factor needed to be applied to the data. Based on the MassDOT Seasonal Adjustment Factors for 2019, 2021, 2022, 2023, and 2024, traffic volumes collected in November on U3 classified roadway do not need a seasonal adjustment factor. This indicates that typically traffic volumes are higher than the average daily traffic, meaning the traffic volumes do not need to be rounded up or adjusted. As such, seasonal adjustment was not strictly necessary; however, due to the traffic volumes being rounded up rather than down, this results in a more conservative analysis and Green does not take issue with this assumption.

*Fuss & O'Neill Response: Fuss & O'Neill concurs with Green's assessment of the seasonal adjustment factors. For analysis purposes within this response to comments letter, the original 2023 Existing traffic volumes from the TIAS were held.*

**Green Response: We find this response acceptable and no further information is required.**

7. The TIAS crash analysis summarized the crash analysis in Section 2 Table 2 - Motor Vehicle Crash Data Summary. The crash data analyzed a six-year timeframe from 2017-2022. According to the MassDOT TIAS guidelines, the analysis should be based on five years of data, or a minimum of three years. The TIAS indicates that there were 27 crashes at the Bridge Street at Cross Street and Marsh Hill Road during the six-year timeframe. According to the MassDOT TIA Guidelines, collisions diagrams shall be provided for any study intersection with an average of more than three crashes per year unless otherwise directed by MassDOT. This analysis could be triggered as part of the MassDOT permitting process. If so the TIAS may require a collision diagram, unless otherwise directed by MassDOT. The intersection safety narratives shall discuss the potential crash causes and potential remediation strategies. The collision diagram shall be based on actual crash reports with collision diagrams and narratives. Based off the six-year time frame, the study intersection averaged 4.5 crashes per year. In accordance with the State Highway Access permitting process the Applicant should confirm if MassDOT will request this analysis.

*Fuss & O'Neill Response: MassDOT will not be requesting any additional analysis as there is no State permit associated with this project. All of the study area roadways are under the jurisdiction of the Town of Dracut.*

**Green Response: We find this response acceptable and no further information is required.**

8. Intersection crash data is typically presented by year in order to identify trends in the yearly crashes. The TIAS reported this information as the total number rather than by year. For example, there were thirteen angle collisions during the six-year timeframe. The TIAS reported the total number of angle crashes, rather than the total angle total for each year. Green recommends summarizing the crash data by year in order to identify crash trends and if there is any yearly variation.

*Fuss & O'Neill Response: Summarized in Table 1 are the crashes with crash data presented by year in order to identify trends in the yearly crashes. The most prevalent type of crashes were angle collisions, with an average of 2.2 crashes per year.*

**Green Response: We find this response acceptable and no further information is required.**

9. Green request that relevant information from the Lowell Regional Transit Authority (LRTA) and the Massachusetts Bay Transportation Authority (MBTA) be provided. Green concurs with the TIAS public transportation narrative. According to the Site Developments "Layout and Materials Plan" there is a proposed bus shelter located at the northern side of the site driveway at Marsh Hill Road. Please confirm that the shelter and adjacent walkway conform to ADA/PROWAG requirements.

*Fuss & O'Neill Response: The bus route information is included in the Appendix. The shelter and adjacent walkway will conform to ADA/PROWAG requirements.*

**Green Response: We find this response acceptable and no further information is required.**

10. A future analysis year of 2030 was selected based on MassDOT TIAS standards to utilize a seven-year traffic volume projection. The TIAS indicates that the background growth rate information was supplied by the Central Transportation Planning Staff (CTPS). The TIAS reported that the “the Central Transportation Planning Staff (CTPS) indicate that a 0.17 percent (minor arterials) to 0.08 percent (interstate) compounded growth rate would be appropriate to develop future No-Build conditions.” The TIAS utilized a background growth rate of 1%. Green concurs that 1% is an appropriate background growth rate in order to have a conservative analysis. Green requests that the correspondence with CTPS be included in the appendix.

*Fuss & O'Neill Response: The growth rate information is included in the Appendix.*

**Green Response: We find this response acceptable and no further information is required.**

11. The TIAS report states that the Town was contacted to identify planning developments in the vicinity of the study that could impact future traffic conditions. The Town identified one potential project location on Avis Avenue that could impact traffic flows in the surrounding area. The development consists of 19 single-family detached homes. The TIAS states that the provided Trip Assessment conducted by TEPP LLC was referred to for the trip generation. Green requests that the trip generation worksheets be included in the appendix.

*Fuss & O'Neill Response: The trip assignment information is included in the Appendix.*

**Green Response: We find this response acceptable and no further information is required.**

12. The following Land Use Code (LUC) from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* was used to estimate trips expected to be generated by the proposed development:

- a. LUC 220 – Multi-family housing (Low-Rise) applied to the 40 residential department units

Green concurs with the LUCs utilized for the trip generation calculation. However, the ITE *Trip Generation Handbook* calculates an  $R^2$  value (R-square) that indicates how strong of a strong correlation between the independent variable and the dependent variable. An  $R^2$  value of 0.75 or higher indicates a strong correlation between the variables. An  $R^2$  value of 0.74 or below indicates a weak correlation between the variables. The ITE calculates the trip generation with fitted curve and average rate. Where the  $R^2$  value is 0.75 or higher, the fitted curve should be utilized. Where the  $R^2$  value is 0.74 or lower, the average rate should be utilized.

Based on the TIAS Table 4 – Trip Generation Summary, the ITE calculated trips did not take into account the  $R^2$  value. Below is a summary of the discrepancy in the data for the 40 residential unit analysis when referring to the weekday, AM and PM peak hour volumes:

- a. Weekday results: 0.86  $R^2$  value (strong correlation)
  - a. Average Rate: 270 (Total), 135 (Entry), 135 (Exit)
  - b. Fitted Curve: 332 (Total), 166 (Entry), 166 (Exit)
- b. AM Peak Hour results: 0.79  $R^2$  value (strong correlation)
  - a. Average Rate: 16 (Total), 4 (Entry), 12 (Exit)
  - b. Fitted Curve: 35 (Total), 8 (Entry), 27 (Exit)
- c. PM Peak Hour results: 0.84  $R^2$  value (strong correlation)
  - a. Average Rate: 20 (Total), 13 (Entry), 7 (Exit)
  - b. Fitted Curve: 38 (Total), 24 (Entry), 14 (Exit)

The report utilized the “Average Rate” for the daily, AM and PM peak hour volumes. Due to the high  $R^2$  or strong correlation the “Fitted Curve” trip generation should have been used. Green recommends the analysis utilize the Fitted Curve trip generation before conducting the future condition analysis. Green recommends revising the trip generation, trip distribution, and Synchro analysis.

*Fuss & O'Neill Response: The trip generation calculations were re-evaluated and re-calculated using the 12th Edition of the ITE Trip Generation manual. The updated trip generation calculations are summarized in Table 2 using the appropriate methodology using the fitted curve trip generation where the  $R^2$  value exceeds 0.75.*

TABLE 2

TRIP-GENERATION SUMMARY

|                                    | <i>Proposed Residential Trips<sup>a</sup></i> |
|------------------------------------|---|
| <i>Average Weekday Daily Trips</i> | 248   |
| <i>Weekday Morning Peak Hour:</i>  |   |
| <i>Entering</i>                    | 6   |
| <i>Exiting</i>                     | <u>21</u>                                     |
| <i>Total</i>                       | 27  |
| <i>Weekday Evening Peak Hour:</i>  |   |
| <i>Entering</i>                    | 17  |
| <i>Exiting</i>                     | <u>10</u>                                     |
| <i>Total</i>                       | 27  |

<sup>a</sup>Based on ITE LUC 220, Single-Family Housing Attached; 40 dwelling units.

*On a typical weekday, the proposed project is expected to generate 248 vehicle trips (124 vehicles entering and 124 vehicles exiting). During the weekday morning peak hour, 27 vehicle trips (6 vehicles entering and 21 vehicles exiting) are expected. During the weekday evening peak hour, 27 vehicle trips (17 vehicles entering and 10 vehicles exiting) are expected. These volumes were used in the updated intersection capacity analyses.*

**Green Response: We find this response acceptable and no further information is required.**

13. The residential trip distribution is based on the existing traffic patterns and anticipated commuter patterns. Green concurs that utilizing U.S. Census Journey to Work data for the residents of the Town of Dracut is the correct method for distributing the residential trips. Green requests that the census data be provided in the appendix in order to confirm the trip distribution percentages.

*Fuss & O'Neill Response: The gravity model is included in the Appendix.*

**Green Response: We find this response acceptable and no further information is required.**

14. Green requests for the Synchro reports to be provided in the appendix in order to evaluate the level of service results. The Synchro analysis should be updated to account for the updated trip generation and trip distribution.

*Fuss & O'Neill Response: The updated Synchro Analyses are included within the Appendix along with the updated traffic flow networks.*

**Green Response: The Synchro printouts provided for the intersections of Marsh Hill Road at Bridge Street and at Old Pasture Road appear to reference the previous report's trip generation. It is acknowledged that the change in number of trips is slight so it is anticipated that operations results will not change much from the summary tables provided in the responses.**

15. Green requests that the "Table 9 – Unsignalized Level-of-Service Analysis Summary" show the level-of-service results for each approach rather than just the southbound direction. Table 9 only shows the Synchro results for the southbound movements, for example from the site driveway or from Old Pasture Road. Green requests that the delay, LOS, V/c and queue length be provided for all movements.

*Fuss & O'Neill Response: The unsignalized level of service summary table has been updated to include the results at each intersection for each approach. These results are summarized in Table 3. Table 4 summarizes the updated signalized level of service results.*

**Green Response: The Synchro printouts provided for the intersections of Marsh Hill Road at Bridge Street and at Old Pasture Road appear to reference the previous report's trip generation. It is acknowledged that the change in number of trips is slight so it is**

anticipated that operations results will not change much from the summary tables provided in the responses.

16. "Table 11 - Sight Distance Summary" indicates that the stopping sight distance and intersection sight distance used the AASHTO "A Policy on Geometric Design of Highways and Streets, 2018, 7<sup>th</sup> Edition" for the sight distance calculations. Based on the non-standard intersection sight distances depicted in Table 11, Green surmises the AASHTO "Table 3-2. Stopping Sight Distance on Grades" was considered in evaluating the sight analysis. Green requests confirmation of (if used) roadway grades used for the sight distance calculations. Green conducted a field visit to confirm existing conditions and sight distance at the existing driveway. Table 1 depicts the sight distance analysis comparison.

**Table 1 – Sight Distance Analysis Comparison**

| Location                                   | Sight Distance               |                       |                          |                |
|--|------------------------------|-----------------------|--------------------------|----------------|
|  | Peer Review<br>Measured (ft) | TIAS<br>Measured (ft) | Minimum<br>Required (ft) | Desirable (ft) |
| <b>Stopping Sight Distance</b>             |                              |                       |                          |                |
| Marsh Hill Road and Proposed Site Driveway |                              |                       |                          |                |
| Marsh Hill Road approaching from the east  | 360'                         | 350'                  | 327'                     | -              |
| Marsh Hill Road approaching from the west  | 240'                         | 240' *                | 253'                     | -              |
| <b>Intersection Sight Distance</b>         |                              |                       |                          |                |
| Marsh Hill Road and Proposed Site Driveway |                              |                       |                          |                |
| Site Driveway looking to the east          | 365'                         | 350'                  | 373'                     | 430'           |
| Site Driveway looking to the west          | 240'                         | 240' *                | 373'                     | 430'           |

\* Distance to the center of Bridge Street

*Fuss & O'Neill Response: Grades were included in the sight distance assessment. The sight distance worksheets are included in the Appendix*

**Green Response: We find this response acceptable and no further information is required.**

17. The following parking space requirements are noted in the Table 6.1.6 of Off-Street Parking Requirements from Town's Zoning By-Laws. Green concurs with the number of proposed parking spaces.

*Fuss & O'Neill Response: Fuss & O'Neill and Hancock Associates concur.*

**Green Response: We find this response acceptable and no further information is required.**

18. Green reviewed the parking requirements depicted on sheet 3 of the “Comprehensive Permit Site Plan.” Green concurs that 80 parking spaces are to be provided to meet the minimum requirements of two parking spaces per unit according to the Town’s bylaws.

*Fuss & O’Neill Response: Fuss & O’Neill and Hancock Associates concur.*

**Green Response: We find this response acceptable and no further information is required.**

19. The U.S. Department of Justice Civil Rights Division published accessible parking space requirements in sections 208.2 of the 2010 ADA Standards for Accessible Design. The ADA Standards for Accessible Design indicates that in parking lots with 76 to 100 parking spaces four ADA parking are to be provided, one of which is van accessible. The current site plans meets the minimum requirements to satisfy the ADA parking standards.

*Fuss & O’Neill Response: Fuss & O’Neill and Hancock Associates concur.*

**Green Response: We find this response acceptable and no further information is required.**

20. A waiver has been requested to reduce the width and depth of the proposed parking spaces. The current site plans indicates that all of the proposed parking will have a width of nine feet and depth of 18-feet, with a maneuver width of 22-feet. All of the proposed parking spaces fall in the 45 to 90 degree standard. According to the Town’s bylaws, in section 6.1.8.1 General Standards D. Parking Dimensions the “Minimum Parking Stall Dimensions” for a standard 45 to 90 degree parking space shall be ten-feet-wide, 20-feet deep, with a maneuver width of 22-feet. According to the Town’s bylaws, in section 6.1.8.1 General Standards D. Parking Dimensions the “Minimum Parking Stall Dimensions” for an accessible 45 to 90 degree parking space shall be 12-feet-wide, 19-feet deep, with a maneuver width of 22-feet. Due to the minimum maneuver width of 22-feet requirement being met, Green concurs that the parking waiver should be considered to be granted.

*Fuss & O’Neill Response: Fuss & O’Neill and Hancock Associates concur.*

**Green Response: We find this response acceptable and no further information is required.**

21. A previous peer review conducted by Green was submitted and the plan set was revised in August 2025. The Green peer review had a comment of “The applicant is requesting a waiver for smaller parking depth from 20' to 18'. We recommend aisle with be a minimum of 24' for 18' long parking spaces. Please revise.” The applicant response was “The required drive aisle width is 22'. Increasing the drive aisle width would increase site impacts and push the development closer to the adjacent resource area.” The revisions are not compliant with the Town’s regulations or the industry practices in the Urban Land Institute’s *Dimensions of Parking* recommends. Green requests the site plans and proposed parking be revised to be compliant with the town’s regulations and the industry practices in the Urban Land Institute’s *Dimensions of Parking* recommends.

*Fuss & O'Neill Response: The purpose of the variance request is to minimize impact to the adjacent resource area while maintaining industry accepted parking space dimensions. While it is understood that a wider aisle width would provide more room for parking maneuvers and access, widening the aisle will result in similar impacts to the resource area as increasing the parking space size in conformance with the by-law.*

**Green Response:** We recommend if the Applicant can demonstrate that their proposed parking layout works (aside from the fire truck movements included in the responses) by performing additional turning movements then we defer to the Board for waiver approval.

22. Green reviewed the “Layout and Materials Plan” depicted on sheet 3 of the Site Development Plans. There is a proposed accessible ramp located near the two proposed accessible parking spaces outside of the building. There is no proposed accessible ramp provided for the accessible parking spaces in the parking garage to access the elevator room. Green requests that an ADA compliant curb ramp be provided within the parking garage in order to access the elevator.

*Fuss & O'Neill Response: The parking garage is proposed to be flush with the interior elevation of the lobby and the elevator room; no ramp will be necessary. Drainage within the garage will be provided via minimally sloping the pavement to floor drains.*

**Green Response:** We find this response acceptable and no further information is required.

23. Green recommends conducting apparatus turning movements within the proposed site that are modeled based on the largest fire truck owned by the Dracut Fire Department. The turning movements should confirm that fire trucks will be able to maneuver the entire site in the case of emergencies.

*Fuss & O'Neill Response: A swept-path analysis was performed for the Dracut fire engine. The analysis, along with a letter from the Dracut Deputy Chief indicating their approval of the plan is included in the Appendix.*

**Green Response:** We find this response acceptable and no further information is required.

24. Due to the discrepancies noted previously in the seasonal adjustment, trip generation calculations and trip distribution, Green cannot evaluate the Synchro results for their accuracy. Green recommends that the errors in the seasonal adjustment, trip generation and trip distribution be addressed then the Synchro analysis can be conducted. Green recommends updating the capacity analysis based on the recommended trip generation. However, Green recognizes that the additional 18 to 19 trips per hour should not significantly worsen the operations presented in the report.

*Fuss & O'Neill Response: In the response to Comment No. 15, the trip generation was updated to respond to the comments and to conform with the 12th Edition of the Trip*

*Generation Manual. Updated intersection capacity analyses were performed and are summarized in Table 3.*

**Green Response: We find this response acceptable and no further information is required.**

25. Green recommends using the latest Synchro 12 software to conduct the capacity analysis. The site driveway analysis should use the HCM 7<sup>th</sup> TWSC analysis, as it is the most updated Synchro analysis methodology. The “HCM 7<sup>th</sup> Signalized Intersection Summary” should be used for the analysis where the “HCM 7<sup>th</sup> Edition Methodology” is supported. The “HCM 7<sup>th</sup> Edition Methodology” is the preferred analysis for signalized intersections, unless the intersection has a unique or non-HCM signal phasing. Green recommends utilizing the “HCM 7<sup>th</sup> Edition Methodology” where applicable at the study intersections. In addition, for Synchro analysis for future year conditions, a Peak Hour Factor (PHF) of 0.92 shall be used per MassDOT standards.

*Fuss & O'Neill Response: Fuss & O'Neill is currently using Synchro Version 11 software and does not have access to the newer Synchro 12 software. The consistent use of HCM 2000 for signalized intersections and HCM 6 for unsignalized intersections is adequate to provide a comparison of operational changes during Existing, No-Build, Build, and Build Mitigated conditions. We agree that MassDOT suggests the use 0.92 for future year (No-Build and Build) condition Peak Hour Factors (PHF). For development projects not on state roadways, Fuss & O'Neill evaluates future conditions based on the observed PHFs (by approach). Since the observed PHF are largely lower than 0.92, a global increase would reflect improved operations and would not significantly change the conclusions presented.*

**Green Response: We find this response acceptable and no further information is required.**

26. Green concurs with all of the TIAS recommendations.

*Fuss & O'Neill Response: Fuss & O'Neill concur.*

**Green Response: We find this response acceptable and no further information is required.**

If either the Town staff or Applicant's engineer would like to discuss any of these comments further, please feel free to contact me at (978) 923-0400.

Sincerely,  
*Green International Affiliates, Inc.*

*Corinne Tobias*

Corinne Tobias, P.E., PTOE  
Technical Manager

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