

Tel: (203) 234-7862 Fax: (203) 234-9154

June 11, 2021

Mr. Kevin Pagini Town Planner Room #G-40 45 South Main Street Wallingford, CT 06492

Re: Traffic Peer Review- Response to Comments Proposed Delivery Station Building 5 Research Parkway Wallingford, Connecticut

Dear Mr. Pagini,

VN Engineers, Inc. (VNE) is pleased to provide this peer review of the revised traffic analysis, site plan, and response to comments for the proposed Delivery Station Building at 5 Research Parkway in Wallingford, Connecticut. Revisions to the traffic analysis and design were provided in response to the comments provided from our previous peer review letter dated April 1, 2021.

The following information was provided to VNE for review:

- Traffic Analysis Addendum #1 Full Closure of Carpenter Lane Entrance, prepared by BL Companies, dated May 2021.
- Response to Comments letter, prepared by BL Companies, dated April 22, 2021.
- Permit Documents for Proposed Development, 5 Research Parkway, Wallingford, Connecticut prepared by BL Companies, revised May 28, 2021.
- Traffic Study, Proposed Delivery Station Building, 5 Research Parkway, Wallingford, Connecticut prepared by BL Companies, revised May 28, 2021.

The comments from the previous peer review have largely been addressed. The revised study provides a representative analysis of the traffic conditions anticipated with the proposed Delivery Station Building. Based on our review of the new information and responses provided, we offer the following comments and clarifications:

Average Weekday Introduction

- 1. The site plan has been revised to eliminate the utilization of Site Drive #2 on Carpenter Lane. According to the report, this entrance will only be used by emergency vehicles. The distribution pattern for the site-generated traffic volumes has been revised to account for the closure of this driveway. The redistribution of the site-generated trips presented in the report, as a result of the elimination of this site driveway, is appropriate for this traffic study.
- 2. The study area that is presented in the Traffic Analysis Addendum includes the key signalized and unsignalized intersections that most of the trips to and from the proposed Delivery Station

would be expected to pass through with the elimination of Site Drive #2. The study area matches that presented in the previous traffic report and is appropriate for analyzing the impacts of the proposed development.

3. The number of parking spaces has been decreased from 1,508 spaces in the previous design to 1,269 spaces in the revised site plan. This is a reduction of 239 spaces. A comparison of the parking information presented for the previous site plan and the current site plan is provided below:

Parking Stall Type	Site Plan (1/8/2021)	Site Plan (5/28/2021)	Net Change
Associate (9' X 20')	355	264	-91
Associate (9' X18')	120	120	0
Van (11′ X 27′)	1,033	885	-148
Total	1,508	1,269	-239

Parking Comparison

According to the Estimation of Net Vehicles on Site: Holiday Season graph presented in Traffic Analysis Addendum #1, the peak number of vehicles on site will be approximately 1,400 vehicles during the holiday season. On an average weekday, the peak number of vehicles on site will be approximately 700 vehicles. According to the site plan, there are approximately 30 truck loading dock spaces and 240 designated van loading/queuing spaces that are located on the north and south sides of the delivery station building that are not accounted for in the above parking totals. The combination of the 1,269 parking spaces with the 240 van loading and 30 truck loading dock spaces provides space for approximately 1,539 vehicles, which exceeds the maximum 1,400 vehicles that are expected to be on site during the holiday peak. The proposed site plan provides sufficient parking spaces to accommodate the peak holiday season period and more than double the number of parking spaces needed to accommodate the average weekday operations.

Average Weekday Trip Distribution and Site Traffic Volumes

- 4. The site-generated traffic volumes presented in the Table A1- Peak Hour Trip Generation match the steady state tenant-specific traffic volumes presented in the appendices of the Traffic Analysis Addendum #1. The site generated volumes were appropriately distributed to the study area in Figures A2.1 and A2.2- Site Generated Traffic Volume Diagrams.
- 5. Has the tenant-specific trip generation presented in the study been approved by the Office of the State Traffic Administration for this project?
- 6. The trip distribution percentages presented in Figure A1 match the distribution previously presented in the original traffic report. The trip distribution percentages are listed below:
 - a. 20 percent to/from points north via I-91
 - b. 30 percent to/from points south via I-91
 - c. 20 percent to/from points east via Route 68 (Barnes Road)
 - d. 15 percent to/from points west via Route 68 (Barnes Road)
 - e. 15 percent to/from points north via Research Parkway

The trip distribution presented in Figure A1 is appropriate for use in the revised analysis.

7. The Site Generated Traffic Volume Diagram (Figure A2.1) shows the northbound thru movement at the intersection of Research Parkway at Joseph Carini Road with a volume of 0 during the Midday peak hour. This movement should have a volume of 22 vehicles during the Midday peak hour according to the trip distribution. The Build (2021) Traffic Volumes shown in Figure A4.1 for this movement appropriately account for these 22 new trips so this error has no impact on the analysis.

Average Weekday No-Build Volumes

8. At the Planning & Zoning public hearing on May 10, 2021, the Commission identified the proposed developments of 850 Murdock Avenue in Meriden and 1117 Northrop Road in Wallingford as background developments that will contribute additional traffic within the study area. The traffic volumes from these proposed developments have been accounted for in the revised traffic analysis.

Average Weekday Build Volumes

9. The 2021 Build Traffic Volume Diagram (Figure A4.1) shows the northbound thru movements at the intersections of Research Parkway at Joseph Carini Road and Marlin Software Drive with a volume of 142 during the PM peak hour. These movements should both have a traffic volume of 139 vehicles. The Build PM and Build Improved PM Synchro analyses account for the correct volumes at these movements so these minor errors have no impact on the analysis.

Average Weekday Intersection Analysis

- 10. The storage lengths provided in the Table A2.1 Peak Hour Levels of Service (AM, Mid-Day, and PM) and Table A3.2 Peak Hour Levels of Service (AM/PM Peak Hour Generator) do not accurately reflect the actual storage lengths provided in the field at the following locations:
 - a. Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps i. Route 68 WB Left: Should be listed at 715' instead of 910'
 - b. Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - i. Route 68 EB Left: Should be listed at 640' instead of 910'

Despite these differences, the maximum queues experienced in these lanes do not exceed the available storage provided for the peak periods analyzed.

- 11. The 95th percentile queues exceed the available storage at the following locations/time periods:
 - a. Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - i. Route 68 EB Thru (Available Storage: 345'):
 - 1. Weekday PM Peak- 2021 No-Build (Queue: 455')
 - 2. Weekday PM Peak- 2021 Build (Queue: 465')

At this location, the No-Build queues already exceed the available storage. The Build queues will exceed the No-Build queues by less than one car length.

- b. Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - i. Exit 15 Off-Ramp NB Left (Available Storage: 180')
 - 1. Weekday AM Peak- 2021 No-Build (Queue: 155')
 - 2. Weekday AM Peak- 2021 Build Improved (Queue: 190')

- 3. Weekday PM Peak- 2021 No-Build (Queue: 145')
- 4. Weekday PM Peak- 2021 Build Improved (Queue: 195')

At this location, the Build Improved queues will exceed the available storage by less than one car length and the queues will be extended on the off-ramp.

The remaining locations were all noted to have sufficient lane storage for the calculated 95th percentile queues.

- 12. The 2021 Build Improved PM Peak Hour of Generator Synchro models have incorrect volumes input for the following movements:
 - Research Parkway at Site Drive #1/Food Bank Drive
 - WB Left should be 187 vph.
 - WB Right should be 33 vph.
 - SB Thru should be 93 vph.
 - Research Parkway at Joseph Carini Road
 - NB Thru should be 136 vph.
 - SB Thru should be 125 vph.
 - Research Parkway at Marlin Software Driveway
 - NB Thru should be 136 vph.
 - SB Thru should be 124 vph.
 - Research Parkway at Carpenter Lane
 - WB Left should be 4 vph.
 - WB Right should be 7 vph.
 - NB Thru should be 115 vph.
 - Carpenter Lane at Site Drive #2
 - NB Left should be 0 vph.

The volumes input at these intersections for the Synchro analysis should reflect the volumes presented in Figure A4.2 (Build 2021 Traffic Volumes). Since no improvements are proposed at these intersections, the results presented in the 2021 Build columns should be used for comparison.

- 13. The Peak Hour Levels of Service table for AM/PM Peak Hour Generator (Table A3.2) shows the EB left/right-turn movement at the intersection of Research Parkway at Marlin Software Driveway operating at LOS B during the AM Peak Hour of Generator for the Build scenario. According to the Build AM Peak Generator Synchro report, this movement operates at LOS A.
- 14. The timings from the Synchro reports were compared against the time-space diagrams for the intersections along Route 68. There were inconsistencies found between the time-space diagram phase split values and the phase splits input for the Existing Midday, No-Build Midday, Build Midday, and Build Improved Midday Synchro analyses at the intersection of Route 68 (Barnes Road) with Research Parkway/Hotel Drive. The phase splits in the Midday Synchro models should correspond with the phase splits from the time-space diagrams. It is not expected that the updated phase splits will cause a noticeable change to the analysis results as the lengths of the phases are only off by a maximum of three seconds and the same phase splits were modeled for all the Midday scenarios. In addition, this intersection already operates at acceptable level of service during the Midday peak-hour scenarios.
- 15. The intersection of Research Parkway at Site Drive #1/Food Bank Drive currently operates in "Flash" mode for existing conditions. This signal was modeled in Synchro for all the build scenarios with the timing information from the existing signal plan. The Build Midday, Build PM

Peak Generator, Build Improved Midday, and Build Improved PM Peak Generator Synchro models have the default vehicle extension value of 3 seconds entered for all phases, however, the existing signal plan shows lower vehicle extension values of 1 or 2 seconds. The vehicle extension values should reflect the values from the existing signal plan. These changes are not expected to have an impact on the results reported.

- 16. The modifications made as part of the Build Improved scenario for the Holiday Peak analysis includes restriping the center lane at the northbound approach of the I-91 NB Exit 15 On/Off-Ramps at the intersection of Route 68 (Barnes Road) and optimizing the signal timing at this intersection for the weekday PM peak period. The improvements were limited to this intersection as the intersection degrades from overall LOS D in the no-build PM peak hour condition to LOS E during the Holiday Build PM Peak scenario. These optimized signal timings were not used in the average weekday Build Improved analysis for the PM peak. The optimized timings from the holiday analysis should be applied to the average weekday Build Improved analysis for the PM peak hour since these improvements would be implemented for both conditions. This update would be expected to improve the operation of the intersection of Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps during the 2021 Build Improved PM Peak scenario.
- 17. As noted in the report, the southbound left-turn movement at the intersection of Route 68 (Barnes Road) at Research Parkway/Hotel Drive deteriorates from LOS D to LOS E during the weekday PM peak hour between the no-build and build conditions. While there is adequate queuing space available for this movement, have timing adjustments been investigated to reduce the delay for this movement?

Average Weekday Conclusion

- 18. The clearing of the vegetation at the intersection of Research Parkway at Carpenter Lane has been recommended to improve sightlines due to the crash patterns at this intersection and field visits that observed overgrown vegetation. A plan should be provided to the town in conjunction with this recommendation that displays the proposed limits of clearing.
- 19. The stop bar at the northbound approach at the intersection of Research Parkway at Site Drive #1/Food Bank Drive is proposed to be relocated further south to accommodate left-turning trucks out of the site driveway. With the stop bar located further back from its current location, the clearance intervals for this intersection should be recalculated as part of the project. These adjustments are not expected to have a significant impact on the analysis but should be implemented with any other off-site improvements proposed with the project.
- 20. Sheet No. TT-3 shows the proposed modifications at the intersection of Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps along with the truck turning maneuver for a WB-67 semi-trailer. The proposed modifications eliminate the channelization for the left-turn lane at the intersection of Route 68 (Barnes Road) at Research Parkway/Hotel Drive. Cat tracks are proposed directing the center lane right-turning vehicles to the far-left exclusive left-turn lane for the intersection to the east with Research Parkway.
 - a. Additional information should be provided on the reasoning for the proposed pavement markings and the proposed lane configuration. It is preferable from a traffic operations and safety standpoint to maintain the current channelization and have the

proposed dual-right turns from the I-91 NB Exit 15 off-ramp turn into the two eastbound thru-lanes on Route 68 (Barnes Road). The existing double yellow channelization that is proposed to be removed deters drivers in the eastbound left-turn lane at the intersection of Barnes Road and the I-91 NB off-ramp from traveling through the intersection to the downstream eastbound left-turn lane to access Research Parkway.

- b. The proposed configuration will also cause a weaving condition for vehicles making a right-turn from the center right-turn lane from the off-ramp into the eastbound left-turn lane for Research Parkway. Drivers making this turn will be forced to either turn left or change lanes into the adjacent thru-lane to continue eastbound on Barnes Road.
- c. The proposed modifications at the I-91 NB Exit 15 on/off-ramps will ultimately need to be approved by CTDOT. Have the proposed modifications been discussed with CTDOT?

Holiday Analysis Introduction

21. An additional analysis was provided for the holiday season peak to address the comments from the previous peer review. As stated in the Traffic Analysis Addendum #1, CTDOT does not currently require holiday season analysis as part of the OSTA process. While we acknowledge that OSTA does not require holiday season analyses, this additional analysis was requested for this application to provide the town stakeholders with an understanding of the operating conditions that can be expected with the proposed development during the peak season of operations.

Holiday No-Build Volumes

22. The holiday background traffic volumes use a seasonal adjustment factor of 1 to adjust the average weekday volumes to the volumes that would be expected during the peak season of operations in December. This adjustment factor is greater than the 0.99 provided by CTDOT and is acceptable for use in the holiday analysis. As such, the 2021 background volumes shown in Figures 3.1 and 3.2 are appropriately identical to the average weekday background volumes shown in Figures A3.1 and A3.2.

Holiday Trip Distribution and Site Traffic Volumes

- 23. The site-generated traffic volumes presented in the Table 2.2- Peak Hour Trip Generation (Holiday) match the holiday tenant-specific traffic volumes presented in the appendices of the Traffic Analysis Addendum #1. The site generated volumes were appropriately distributed to the study area in Figures 5.3 and 5.4- Holiday Peak Site Generated Traffic Volume Diagrams.
- 24. The holiday traffic distribution summary indicates that a "new trip distribution pattern" is used and later states that the distribution patterns are the same as the average weekday in the main report. It should be clarified that the trip distribution percentages used for the holiday analysis match those used for the average weekday analysis. The use of the same distribution percentages is appropriate for the holiday analysis.

Holiday Build Volumes

- 25. The Midday and PM traffic volumes presented in the Holiday Build 2021 Traffic Volume Diagram (Figure 6.3) do not represent the summation of the 2021 background volumes with the holiday peak site generated volumes for the following movements:
 - Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - EB Thru should be 1113 vehicles for PM peak.
 - SB Left should be 335 vehicles for PM peak.
 - Route 68 (Barnes Road) at Research Parkway/Hotel Drive
 - WB Right should be 133 vehicles for the PM peak.
 - Research Parkway at Site Drive #1/Food Bank Drive
 - NB Thru should be 136 vehicles for the PM peak.
 - NB Right should be 394 vehicles for the PM peak.
 - WB Left should be 237 vehicles during the Midday peak.
 - WB Right should be 42 vehicles during the Midday peak.
 - SB Left should be 69 vehicles during the PM peak.
 - SB Thru should be 132 vehicles during the Midday peak.
 - Research Parkway at Joseph Carini Road
 - NB Thru should be 133 vehicles during the Midday peak and 162 vehicles during the PM peak.
 - SB Thru should be 103 vehicles during the Midday peak and 425 vehicles during the PM peak.
 - Research Parkway at Marline Software Drive
 - NB Thru should be 134 vehicles during the Midday peak and 162 vehicles during the PM peak.
 - SB Thru should be 145 vehicles during the Midday peak and 412 vehicles during the PM peak.
 - Research Parkway at Carpenter Lane
 - NB Thru should be 123 vehicles during the Midday peak.
 - NB Right should be 15 vehicles during the PM peak.
 - WB Left should be 8 vehicles during the Midday peak.
 - WB Right should be 12 vehicles during the Midday peak.
 - SB Thru should be 357 vehicles during the PM peak.
 - SB Left should be 25 vehicles during the PM peak.

Although the numbers are inaccurate in this figure, the holiday peak Synchro reports show the accurate volumes for these movements. Therefore, the revisions to this figure will not have an impact on the results reported.

Holiday Intersection Analysis

- 26. The storage lengths provided in the Table A5.3 Peak Hour Levels of Service (AM, Mid-Day, and PM) do not accurately reflect the actual storage lengths provided in the field at the following locations:
 - a. Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - i. Route 68 WB Left: Should be listed at 715' instead of 910'
 - b. Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - i. Route 68 EB Left: Should be listed at 640' instead of 910'

Despite these differences, the maximum queues experienced in these lanes do not exceed the available storage provided for the peak periods analyzed.

- 27. The 95th percentile queues exceed the available storage at the following locations/time periods:
 - a. Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - i. Route 68 EB Thru (Available Storage: 345'):
 - 1. Weekday PM Peak- 2021 No-Build (Queue: 455')
 - 2. Weekday PM Peak- 2021 Build Improved (Queue: 500')

At this location, the No-Build queues already exceed the available storage. The Build queues will exceed the No-Build queues by approximately two car lengths.

- b. Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - i. Exit 15 Off-Ramp SB Left (Available Storage: 240')
 - 1. Weekday PM Peak- 2021 No-Build (Queue: 205')
 - 2. Weekday PM Peak- 2021 Build Improved (Queue: 255')

At this location, the Build Improved queues will exceed the available storage by less than one car length and the queues will be extended on the off-ramp.

- c. Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - i. Exit 15 Off-Ramp NB Left (Available Storage: 180')
 - 1. Weekday AM Peak- 2021 No-Build (Queue: 155')
 - 2. Weekday AM Peak- 2021 Build Improved (Queue: 195')
 - 3. Weekday PM Peak- 2021 No-Build (Queue: 145')
 - 4. Weekday PM Peak- 2021 Build Improved (Queue: 270')

At this location, the Build Improved queues will exceed the available storage by one car length during the AM peak and by 4 car lengths during the PM peak. The queues on the off-ramp will be extended.

- d. Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - i. Exit 15 Off-Ramp NB Right (Available Storage: 180')
 - 1. Weekday PM Peak- 2021 No-Build (Queue: 305')
 - 2. Weekday PM Peak- 2021 Build Improved (Queue: 260')

At this location, the Build Improved queues will exceed the available storage by approximately 3 car lengths during the PM peak but will be less than the No-Build queues. The queues on the off-ramp will be extended.

The remaining locations were all noted to have sufficient lane storage for the calculated 95th percentile queues.

- 28. The Holiday Build Midday Peak and Holiday Build Improved Midday Peak Synchro reports have traffic volumes input that do not match those presented in Figure 6.3 Holiday Build 2021 Traffic Volumes at the following movements:
 - Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps
 - WB Left should be 215 vph for both scenarios.

- Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps
 - WB Thru should be 638 vph for both scenarios.
 - WB Right should be 199 vph for both scenarios.

These volume differences are minor and are not expected to have a significant impact on the results reported.

- 29. The analysis for the Holiday Build PM Peak Generator models a shared left/thru/right-turn center lane for the northbound approach at the intersection of Route 68 (Barnes Road) at the I-91 NB Exit 15 on/off-ramps. This should be modeled as a shared left/thru lane for the holiday build analysis and as a left/thru/right-turn lane for the improved scenarios. This change will affect the analysis results. It is anticipated that this intersection would have worse operating conditions during the Holiday Build PM Peak Generator scenario than that reported in the table since the modification of the center lane arrangement would not be in place. Based on the results of the Build Improved scenario for this intersection, it is anticipated that this intersection would operate at acceptable levels of service for this scenario without the changes to the lane configurations.
- 30. The timings from the Synchro reports were compared against the time-space diagrams for the intersections along Route 68. There were inconsistencies found between the time-space diagram phase split values and the phase splits input for the Holiday Build Midday and Holiday Build Improved Midday Synchro analyses at the intersection of Route 68 (Barnes Road) with Research Parkway/Hotel Drive. The phase splits in the Midday Synchro models should correspond with the phase splits from the time-space diagrams. It is not expected that the updated phase splits will cause a noticeable change to the analysis results as the lengths of the phases are only off by a maximum of three seconds and the same phase splits were modeled for all the Midday scenarios. In addition, this intersection already operates at acceptable level of service during the Midday peak-hour scenarios.
- 31. The intersection of Research Parkway at Site Drive #1/Food Bank Drive currently operates in "Flash" mode for existing conditions. This signal was modeled in Synchro for all the build scenarios with the timing information from the existing signal plan. The Holiday Build Midday, Holiday Build PM Peak Generator, Holiday Build Improved Midday, and Holiday Build Improved PM Peak Generator analyses have the default vehicle extension value of 3 seconds for all phases, however, the existing signal plan shows lower vehicle extension values of 1 or 2 seconds. The vehicle extension values should reflect the values from the existing signal plan. These changes are not expected to have an impact on the results reported.
- 32. The eastbound left-turn movement at the intersection of Route 68 (Barnes Road) at Research Parkway degrades from LOS C to LOS F during the weekday PM peak between no-build and Holiday build conditions. This movement also degrades from LOS D to LOS F during the AM Peak Hour of Generator between no-build and Holiday build conditions. Have signal timing or phasing adjustments been investigated for this movement to improve these operations? Has consideration been given to implementing a similar phasing plan to that used during the AM peak hour where the left thru-lane at the Barnes Road eastbound approach to the intersection with Research Parkway operates as a left-turn lane?
- 33. The southbound left-turn movement at the intersection of Route 68 (Barnes Road) at Research Parkway/Hotel Drive deteriorates from LOS D to LOS E during the weekday PM peak hour between the no-build and Holiday build conditions. While there is adequate queuing space

available for this movement, have timing adjustments been investigated to reduce the delay for this movement?

34. The westbound thru-lane at the intersection of Route 68 (Barnes Road) at Research Parkway/Hotel Drive deteriorates from LOS E to LOS F during the weekday AM peak hour between the no-build and Holiday build conditions. While the queues will remain the same between these scenarios, are any timing adjustments possible to improve this condition?

Holiday Conclusions

35. A summary is provided identifying the movements that operate at an undesirable level of service (LOS E/F) during the holiday peak analyses. It should be noted that the movements with undesirable levels of service at the intersections of Route 68 (Barnes Road) at I-91 SB Exit 15 On/Off-Ramps and Route 68 (Barnes Road) at Hotel Drive/Research Parkway continue to operate at an undesirable LOS during the Holiday Build Improved scenarios. In addition, the list of movements with undesirable levels of service for the intersection of Route 68 (Barnes Road) at I-91 NB Exit 15 On/Off-Ramps is incomplete as the northbound left-turn movement during the Holiday Build Improved PM peak and the eastbound left-turn movement during the Holiday Build Improved PM peak both operate at undesirable levels of service.

On-site Circulation and Parking

- 36. The number of accessible parking spaces provided is less than that required by ADA. The Parking Information Table on Sheet SP-0 (Overall Site Plan) lists that 15 accessible parking spaces are required/provided for the proposed development. Per ADA, for parking facilities with 1,001 or greater parking spaces, the number of accessible spaces must be 20 plus 1 for each 100, or fraction thereof, over 1,000. Based on this requirement, the number of accessible parking spaces should be 23 based on the overall parking count of 1,269 spaces.
- 37. According to the traffic report, Site Drive #2 on Carpenter Lane has been converted to an emergency access driveway. Per Site Plan SP-8, two breakaway gates were added at this driveway for emergency access. The applicant should provide additional information on the emergency access driveway regarding the following items:
 - a. The emergency access driveway is shown with a 30' width with 40' radii on the curb returns. Can this driveway width be reduced and continue to provide sufficient space for a fire truck? A turning template for a town of Wallingford fire truck could be applied to determine the required geometry to accommodate the fire truck access into and out of the site. The current layout appears to be larger than needed.
 - b. Are pavement markings and two-way circulation (i.e. stop bar, double yellow line, and painted arrows) needed at the emergency access?
 - c. Can the emergency access gate located closest to Carpenter Lane be relocated so it is outside of the Carpenter Lane right-of-way?
- 38. The proposed site plan on Sheet SP-5 shows a new driveway connection to the existing driveway connection that ties into Barnes Road at the west side of the site. Can additional information be provided on how this driveway will be used and if site traffic will be directed to this driveway?

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We hope that this letter is useful in your review for the proposed project. If you have any questions, please do not hesitate to call us. Sincerely,

Christopher T. Van Zanten, P.E., PTOE Senior Transportation Engineer

Sydney Brooks LaLuna, EIT Project Engineer