



# City of Methuen, Massachusetts

## OFFICE OF THE MAYOR

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David P. Beauregard, Jr.  
Mayor

October 15, 2025

Town of Dracut Zoning Board of Appeals  
62 Arlington Street  
Dracut, MA 01826  
Attention: Brian Lussier, Chair

RE: Proposed 40B Project – The Homes at Murphy’s Farm, LLC (ZBA Case No. 2023-7)

Dear Chairman Lussier and Members of the Board:

The City of Methuen has been closely reviewing the above-referenced residential development project that has been filed with the Town of Dracut under G.L. c. 40B, SS 20-23. I appreciate the Zoning Board of Appeals (the “Board”) inviting the testimony that I provided on behalf of the City on July 17, 2025. The City, as a direct abutter to the project, continues to be deeply concerned regarding the level of traffic safety impacts from the project at key gateway intersections within the City of Methuen. Given the proximity of the project along the municipal boundary line and considering the predominant travel trends to the regional highway network and key retail and services to the east, the City of Methuen will be acutely and severely impacted by a significant majority of the vehicle trips that are generated by the project. These trips are prominently directed to Wheeler Street, a City-owned roadway, before reaching the broader network of State Highway routes via Routes 110 and 113, both of which lead directly to Interstate 93.

The City’s hired transportation engineering consulting firm, TEC, Inc., has nearly 20 years of peer review consulting and transportation design experience directly for the City of Methuen. TEC provided several letters and memoranda to summarize their independent peer reviews of the Applicant’s technical submittals that are part of the Town of Dracut case files. The City’s representatives and TEC reviewers met with the Applicant’s representative, Kevin O’Brien, and its traffic engineer from Vanasse & Associates, Inc. (VAI), Jeffrey Dirk, P.E., PTOE, FITE, on several occasions to provide and discuss the traffic safety impacts and recommendations regarding transportation-related mitigation. As noted in the attached letter from TEC dated February 20, 2025, *“The Applicant’s introduction of new vehicle trips to and from the Project to the intersections will exacerbate existing delays and safety-related concerns; and will contribute to the conditions that heighten the need for changes, such as auxiliary turn lanes for left-turning traffic, traffic signal(s), or other transportation infrastructure.”*

Consistent with TEC’s guidance, the City of Methuen requests the following elements of transportation mitigation for this project that are tied to the issuance of the first Certificate of Occupancy for the project:

1. *Route 113 / Wheeler Street Intersection* - the Applicant, through VAI’s correspondence, has committed to improving the sight lines for those waiting at the stop sign on Wheeler Street northbound by trimming brush at the edge of the right-of-way along the south side of Route 113.

2. *Wheeler Street Pavement Markings* – the Applicant, through VAI’s correspondence, has committed to restripe the yellow centerline pavement markings on the approaches to both Route 110 and 113.
3. *Wheeler Street / Wheeler Road Intersection* – the Applicant, through VAI’s correspondence, has committed to design and implement an all-way stop control at this intersection.
4. *Fair-Share Traffic Mitigation Funding at North Lowell Street (Route 113) / Wheeler Street* based on a proportional ratio of the Applicant’s influence on the turning movements while excluding the through traffic volumes on Route 113.
5. *Fair-Share Traffic Mitigation Funding at Lowell Street (Route 110) / Wheeler Street* based on a proportional ratio of the Applicant’s influence on the turning movements while excluding the through traffic volumes on Route 110.

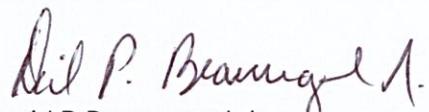
The Applicant has suggested a significantly lower fair-share percentage that is inappropriate and inadequate. The Applicant’s traffic study and subsequent correspondences provide clear evidence that the new trips from the Applicant’s project are sufficiently high enough to cause an exacerbation of the warranting conditions for improvements such as turn lanes and/or traffic signals at the intersection of the City’s roadways and State Highway. The Board’s peer review consultant, VHB, provided similarly supporting recommendations within their memorandum dated January 13, 2025, in which they note, “*Provide a “fair-share” cost contribution for the design and construction of capacity related improvements at the intersection such as the installation of a westbound left-turn lane, widening of Wheeler Street northbound to accommodate left and right-turn lanes, and/or a traffic signal (if warranted). The contribution will be based on the predicted increase in traffic volumes generated by the Project at the intersection over No-Build conditions. The Town of Dracut and City of Methuen should determine if the fair-share cost contribution is acceptable in lieu of the Applicant funding and constructing the improvements.*” VHB provides similar guidance to the Board in relation to the fair-share needs associated with the intersection of Wheeler Street / Route 110.

TEC’s review concluded that “*the need to advance improvements at one or both locations could create a hardship for the City to identify, program, and implement a funding program for the balance of the mitigation costs.*” While the City may petition MassDOT and the Merrimack Valley Planning Commission (MVPC) for regional funding for improvements in the future, there is no predictable horizon for funds or any certainty that funds will be provided. As stated in TEC’s February 20, 2025, letter, “*If State or Federal funds are not available, MassDOT would likely permit the City to pursue the improvements under an Access Permit Project, which would require the City to fund both design and construction.*” The City of Methuen has neither identified nor programmed Capital Improvement Project (CIP) funds for these endeavors. If left unmitigated at the time of occupancy of the Applicant’s project, it would create an increasing and untenable risk of motor vehicle crashes at the key easterly gateway intersections for the project at both ends of Wheeler Street.

We hope that the Board will respect the City of Methuen’s concerns and requests and carefully deliberate this case. I request that the Board votes to deny the project because the Applicant has not provided sufficient written commitment to the City of Methuen to responsibly mitigate the traffic safety impacts within the City’s roadway network as it meets the State Highway system. But, should the Board vote to approve the application, we would expect the Board to consider conditions of approval that appropriately and reasonably address the traffic safety concerns within the City of Methuen consistent with the above-referenced mitigation requests and a fair-share contribution formula that is consistent with our consultant’s recommendations as more thoroughly described in the attached documents.

On behalf of the residents of the City of Methuen, I want to express great appreciation to all Board members as dedicated volunteers who can shape this development project and provide controls that are essential to the protection of public health and safety for both communities.

Sincerely,



David P. Beauregard, Jr.

Mayor

City of Methuen

Attachments:

TEC, Inc. Letter dated August 28, 2024

TEC, Inc. Letter dated February 20, 2025

TEC, Inc. Memorandum dated February 26, 2025



**TEC, Inc.**  
282 Merrimack Street  
Lawrence, MA 01843  
978.794.1792

## MEMORANDUM

**TO:** Kathleen Bradley-Colwell  
Planning Division Director  
City of Methuen Department of  
Economic & Community Development

**FROM:** Kevin R. Dandrade, PE, PTOE  
Principal

**RE:** Murphy's Farm Development Project  
Estimate of Fair-Share Contribution for Traffic Improvements

**DATE:** 2/26/2025

**PROJECT NO.:** T0222.00.001

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The following is an assessment of the percentage of traffic impacts for the Murphy's Farm project based on a proportional relationship of the 2031 No-Build condition (without the project) and the 2031 Build condition (including new trips from the project at full build-out). TEC only used the turning movements at the key gateway intersections of Lowell Street (Route 113) at Wheeler Street and Lowell Boulevard (Route 110) at Wheeler Street because the volume of the turning movements is the key contributing factor in any potential changes in traffic control. All traffic volumes shown below were obtained from the Applicant's traffic study and follow-up response letters prepared by Vanasse & Associates Inc. (VAI).

TEC's estimate of a 33% proportional impact, as noted within our letter dated February 20, 2025 was based on a relationship between the existing traffic volumes and the future trips from the project. Based on this adjusted proportion, which uses the future 2031 No-Build condition as the baseline, TEC recommends the following fair share values be assessed for the Project:

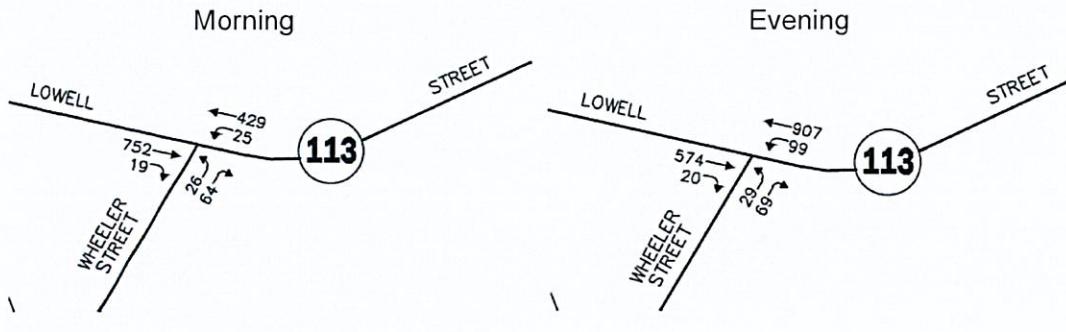
Route 113 at Wheeler Street = 30.2%  
Route 110 at Wheeler Street = 23.4%  
Average of Both Intersections = 26.8%

See the following pages for a more detailed accounting of the traffic volume attributes for each intersection.

TEC nor VAI have published preliminary estimates for the intersection improvements to date. Both roadways are under the jurisdiction of the Massachusetts Department of Transportation (MassDOT). TEC will seek to find examples of comparably scaled Transportation Improvement Program (TIP) and MassDOT permit projects that can be considered as part of an assessment of reasonably projected engineering and construction costs, with future-year construction cost escalation adjustments, to which the proportional impact fee percentages can be applied.

**Route 113 at Wheeler Street**

2031 No-Build Peak-Hour Traffic Volumes (See Figures 4 & 5)

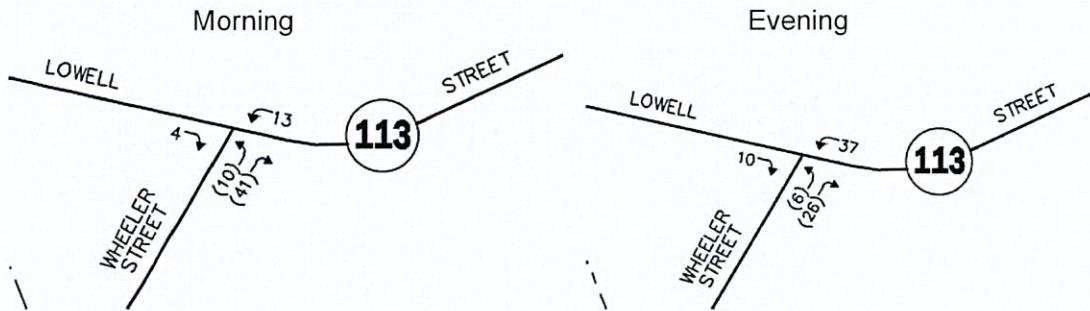


Total 2031 Baseline Turning Movements

$$\text{Morning Peak Hour} = 19 + 25 + 26 + 64 = 134$$

$$\text{Evening Peak Hour} = 20 + 99 + 29 + 69 = 217$$

Project-Generated Peak Hour Traffic Volumes (See Figures 7 & 8)



Total Project-Related Turning Movements Added to Intersection:

$$\text{Morning Peak Hour} = 4 + 13 + 10 + 41 = 68$$

$$\text{Evening Peak Hour} = 10 + 37 + 6 + 26 = 79$$

Proportional Impact:

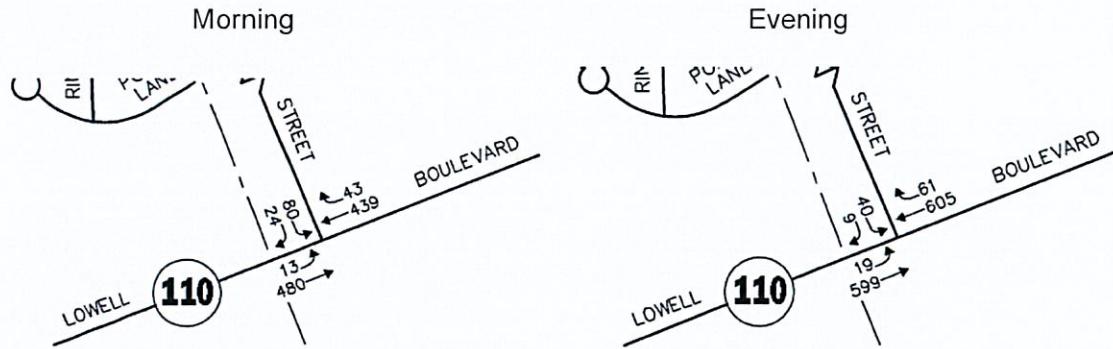
$$\text{Morning Peak Hour Impact} = 68 \backslash (134 + 68) = 0.337 = 33.7\%$$

$$\text{Evening Peak Hour Impact} = 79 \backslash (217 + 79) = 0.267 = 26.7\%$$

$$\text{Average Peak Hour Impact} = (33.7\% + 26.7\%) / 2 = 30.2\%$$

**Route 110 at Wheeler Street**

2031 No-Build Peak-Hour Traffic Volumes (See Figures 4 & 5)

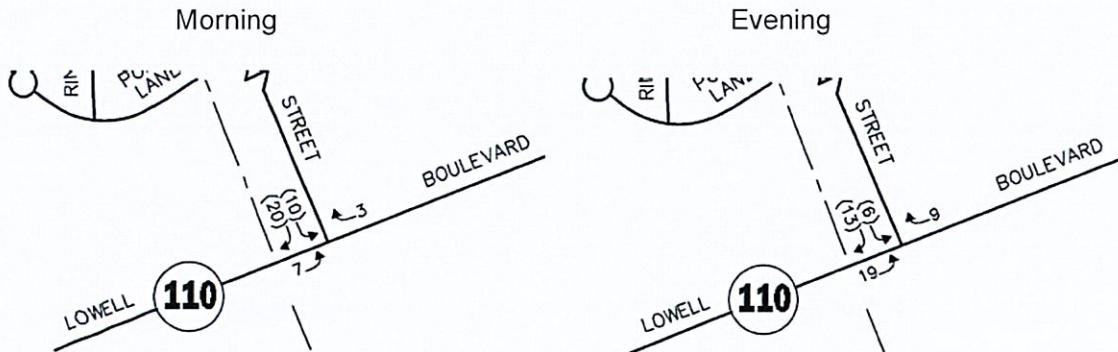


Total 2031 Baseline Turning Movements

$$\text{Morning Peak Hour} = 24+80+13+43 = 160$$

$$\text{Evening Peak Hour} = 9+40+19+61 = 129$$

Project-Generated Peak Hour Traffic Volumes (See Figures 7 & 8)



Total Project-Related Turning Movements Added to Intersection:

$$\text{Morning Peak Hour} = 20+10+7+3 = 40$$

$$\text{Evening Peak Hour} = 13+6+19+9 = 47$$

Proportional Impact:

$$\text{Morning Peak Hour Impact} = 40 \backslash (160+40) = 0.200 = 20.0\%$$

$$\text{Evening Peak Hour Impact} = 47 \backslash (129+47) = 0.267 = 26.7\%$$

$$\text{Average Peak Hour Impact} = (20.0\% + 26.7\%) / 2 = 23.4\%$$

Kathleen Bradley-Colwell  
Planning Division Director  
Department of Economic and Community Development  
City of Methuen  
41 Pleasant Street, Suite 217  
Methuen, MA 01844

February 20, 2025

Ref. T0222.00.01

Re: Murphy's Farm – Dracut, Massachusetts  
Traffic Engineering Peer Review #2

Dear Ms. Bradley-Colwell:

On behalf of the City of Methuen, TEC, Inc. (TEC) has reviewed supplemental documents as part of the traffic engineering peer review for the proposed Murphy's Farm development in Dracut, Massachusetts ("the Project"). The following document was reviewed as part of our follow-up peer review effort:

- *Response to Traffic Engineering Peer Review, Murphy's Farm – 231 Wheeler Street - Dracut, MA*, prepared by Vanasse & Associates, Inc. (VAI), dated December 23, 2024

The Applicant, through VAI, has indicated a willingness to provide a fair-share cost contribution toward the off-site transportation facilities within the City of Methuen at the following locations:

- Route 113 at Wheeler Street
- Route 110 at Wheeler Street

We understand that the City of Methuen has not identified funding for design or construction at these locations because they fall within the limits of State Highway and are owned and controlled by the Massachusetts Department of Transportation (MassDOT). As such, and with the understanding that improvements at these two locations will require extensive project development activities with MassDOT, it is unclear if or when improvements may be constructed. The Applicant's introduction of new vehicle trips to and from the Project to the intersections will exacerbate existing delays and safety-related concerns; and will contribute to the conditions that heighten the need for changes, such as auxiliary turn lanes for left-turning traffic, traffic signal(s), or other transportation infrastructure.

MassDOT recently received bids for, and will soon be commencing construction of, a pavement resurfacing project along Route 110 in Methuen and Dracut (MassDOT Project No. 608816). The work should be substantially completed within the 2025 construction season. This State-funded project will seek to improve pavement quality and better identify multi-modal accommodations for bicyclists along Route 110. MassDOT is currently planning to widen the roadway on Route 110 westbound as it approaches Wheeler Street to introduce an exclusive right-turn lane. This is expected to provide additional room for motorists to decelerate outside of the "through" lane on Route 110 westbound as they turn onto Wheeler Street northbound. MassDOT is not currently planning other vehicle travel lanes or the installation of a traffic signal. The Applicant's analysis shows that some of these items may be appropriate, but they likely fell outside of the scope of MassDOT's originally planned resurfacing project.

The concept of a fair-share contribution is appropriate for the City to consider if it can be coupled with other municipal or private funds, which together could provide a financial catalyst to implement improvements. Without having already commenced the MassDOT project development process, the need to advance improvements at one or both locations could create a hardship for the City to identify, program, and implement a funding program for the balance of the mitigation costs. The process to secure State and/or Federal funding for one or both intersection projects under the Commonwealth's Transportation Improvement Program (TIP) requires considerable time to work with MassDOT and the Merrimack Valley Metropolitan Planning Organization (MVMPO) and other stakeholders. It also typically requires the municipality to fund the design and any permitting activities associated with the requested improvements. If State or Federal funds are not available, MassDOT would likely permit the City to pursue the improvements under an Access Permit Project, which would require the City to fund *both design and construction*.

The need for improvements at a particular intersection is primarily driven by the volume of turning traffic to and from the side street. The Applicant's analysis substantiates the warranting condition for traffic signals based on the volume of side street traffic. The potential need for "mainline" left-turn lanes (to turn from Route 110 or 113 onto Wheeler Street) is understandably driven by the number of left-turning vehicles in relation to number of conflicting vehicle in the on-coming traffic stream. If left unmitigated, the increased turning traffic at each intersection could lead to an increased likelihood of vehicle crashes.

TEC recommends that any fair-share cost contribution be based on a proportion of the Applicant's new trips that turn to and from Routes 110 and 113 in relation to the existing level of turning traffic at each intersection (i.e. a relationship between the level of turning traffic in the No-Build and Build scenarios documented in VAI's study). We recommend that the calculations ignore the volume of "mainline" traffic on Routes 110 and 113 because it would otherwise minimize the influence of the Applicant's traffic impacts. TEC's initial calculations, using the traffic volume figures from the Applicant's study, suggest a fair-share percentage of approximately 33% based on this approach.

The MassDOT project development and design process will likely cost approximately \$300,000 per location (\$600,000 total). The comprehensive reconstruction of the intersections as a MassDOT, with signalization and the potential need for at least one auxiliary left-turn lane on both Route 110 and 113, will likely cost in excess of \$1,500,000 per location (\$3,000,000 total). If the total exposure for the design and construction is approximately \$3,600,000, the Applicant's fair-share cost contribution could be \$1,200,000.

The Applicant has also committed to construct the following transportation mitigation measures on roadways within the jurisdiction of the City of Methuen in advance of other longer-term improvements:

- *Route 113 / Wheeler Street Intersection* - in advance of any long-term improvements that may be designed, the Applicant has committed to improve the sight lines for those waiting at the stop sign on Wheeler Street northbound by trimming brush at the edge of the right-of-way along the south side of Route 113;
- *Wheeler Street Pavement Markings* – In response to Comment #19, the Applicant is willing to restripe the yellow centerline markings on the approaches to both Route 110 and 113;
- *Wheeler Street / Wheeler Road Intersection* – as stated in VAI's response to Comment #20, the Applicant will design and implement an all-way stop control;

Murphy's Farm – Dracut, Massachusetts  
Traffic Engineering Peer Review #2  
February 20, 2025  
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TEC recommends that the physical improvements noted immediately above, and the fair-share cost contribution for the intersections be provided prior to the issuance of the first Certificate of Occupancy for the Project.

Please do not hesitate to contact me if you have any questions concerning this peer review at 978-794-1792. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
*"The Engineering Corporation"*

A handwritten signature in blue ink that appears to read 'Kevin R. Dandrade'.

Kevin R. Dandrade, PE, PTOE  
Principal / Practice Area Leader for Transportation Planning

Kathleen Bradley-Colwell  
Planning Division Director  
Department of Economic and Community Development  
City of Methuen  
41 Pleasant Street, Suite 217  
Methuen, MA 01844

August 28, 2024

Ref. T0222.00.01

Re: Murphy's Farm – Dracut, Massachusetts  
Traffic Engineering Peer Review

Dear Ms. Bradley-Colwell:

On behalf of the City of Methuen, TEC, Inc. (TEC) has reviewed documents as part of the traffic engineering peer review for the proposed Murphy's Farm development in Dracut, Massachusetts ("the Project"). The Project consists of constructing a 268-unit multifamily residential development at 231 Wheeler Street. The residential buildings will consist of one-, two- and three-bedroom units. Access/egress to the site will be provided via the Rinzee Road / Wheeler Street intersection in Methuen and the Wilshire Circle / Wheeler Road intersections in Dracut. A new roadway, proposed between existing cul-de-sacs on Poppy Lane and Elizabeth Drive (both in Dracut), will serve as the Applicant's proposed access connection.

The following materials were considered as part of our review:

- *Transportation Impact Assessment, Murphy's Farm - Dracut, MA*, prepared by Vanasse & Associates, Inc. (VAI), dated October 2023 and revised July 2024.
- *Draft Layout, Grading, and Utilities Plan – Murphy's Farm - Dracut, MA*, prepared by Civil Design Consultants, Inc., undated.

TEC completed a review of these documents for the City of Methuen and provides transportation-related comments below.

1. The *Transportation Impact Assessment* (TIA) included the following intersections within the study area:
  - North Lowell Road (Route 113) at Wheeler Street (MassDOT Jurisdiction)
  - Wheeler Street at Wheeler Road
  - Wheeler Street at Rinzee Road
  - Lowell Boulevard (Route 110) at Wheeler Street (MassDOT Jurisdiction)
  - Wheeler Road at Wilshire Circle and Paddock Lane
  - Wheeler Road at Wilshire Circle
  - Wheeler Road at Parker Road
  - Broadway (Route 113) at Wheeler Road / Jones Avenue (MassDOT Jurisdiction)

TEC concurs with this study area and believes it is appropriate for the scale of the project.  
*No response required.*

2. Automatic Traffic Recorder (ATR) counts were conducted on Wheeler Street and Wheeler Road on March 7 and 8, 2023. Turning Movement Counts (TMCs) were conducted at all study area intersections, except Wheeler Road/Parker Road and Route 113/Wheeler Road/Jones Avenue, on March 7, 2023 between the hours of 7:00 AM and 9:00 AM for the weekday morning peak period and between the hours of 4:00 PM and 6:00 PM for the weekday evening peak period. In response to local comments, the study area was expanded to include the aforementioned intersections and TMCs were subsequently conducted for them on April 7, 2024. *No response required.*
3. VAI reviewed traffic volumes for weekday seasonal adjustments based on historical traffic-volume data from Massachusetts Department of Transportation (MassDOT). Traffic counts for March and April reflect above average conditions, so they were not seasonally adjusted. TEC concurs with this methodology. *No response required.*
4. Contrary to the description for the intersection of Route 110 / Wheeler Street within the TIA, TEC notes that there is only one sidewalk provided on the north side of Route 110 at the intersection of Wheeler Street, rather than on both sides of Route 110 as written. This should be confirmed and corrected accordingly in the TIA if it is submitted to MassDOT for any permitting.
5. Public transportation consists of Merrimack Valley Regional Transit Authority (MVRTA) bus service between Lawrence and Lowell along Route 110 on Bus Route 24. There are no services currently available at the project site. The closest regular stop is located at the Casa Blanca restaurant, about 1.5 miles southeast of the site. The Route 24 bus also operates in a "flag stop" where riders along the route in the area of Wheeler Street can signal the bus driver to stop where it is safe to do so. The MVRTA also provides Dial-a-Ride paratransit service outside of the fixed route to eligible persons with physical, cognitive or mental disabilities. *No response required.*
6. In conjunction with the ATR counts noted in Comment #3, spot speed measurements were also conducted. Measured 85<sup>th</sup> percentile speeds were determined to be 30-32 MPH on Wheeler Street (south of Rinzee Road), 34-38 MPH on Wheeler Road near Wilshire Circle, and 16 MPH on Wheeler Street north of Wheeler Road. The TIA states that the posted speed limit at all locations is 30 MPH. However, TEC notes that speed limits signs are not posted on Wheeler Street north of Wheeler Road. *No response required.*
7. VAI evaluated MassDOT's crash records for the years 2015-2019 and the data is shown in Table 4 of the TIA. Six of the eight (8) study area intersections had at least one crash over the 5-year period. Route 110 at Wheeler Street and Wheeler Road at Wilshire Circle and Paddock Lane had crash rates above the MassDOT Statewide and District 4 averages, both 0.57 crashes per million entering vehicles (MEV) for unsignalized intersections. It should be noted, however, the latter intersection experienced only two crashes in the 5-year period. Also, in a subsequent review of data from 2016-2020 (contained in the Appendix), the former intersection had a crash rate below the Statewide and District averages. Regardless, the TIA describes specific off-site mitigation measures to be performed by the Applicant to reduce these crash rates or directly address safety at both locations.
8. To obtain future year volumes (2031), VAI adjusted the March 2023 and April 2024 counts with a growth rate of 1% per year compounded, based on area growth between 2009 and 2019. This growth rate accounts for background traffic as well as for specific developments

by others (Berube Farms, Wheeler Road, Dracut). TEC concurs with this adjustment. *No response required.*

9. The project's trip generation calculations were generated based on the industry standard Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11<sup>th</sup> Edition* for Land Use Code (LUC) 215 *Single-family Attached Housing*. TEC concurs with this methodology. *No response required.*
10. The trip distribution provided in the TIA appears to match the Journey to Work US Census data provided in the Appendix and has been reasonably estimated. *No response required.*
11. The Applicant provided a table of peak hour traffic volume increases (Table 6 in the TIA). While many of the percentage increases in traffic are between 1.0% and 4.3%, there are others on Wheeler Street and Wheeler Road that are as high as 50.7%. In addition, the residential access points for the site (Rinzee Road and Wilshire Circle) have substantially higher increases ranging between 258.3% and 877.8%. While there are no apparent level of service issues or high motorist delays following the introduction of new trips from the Project, the change in the volume of traffic on the neighborhood streets will likely be obvious to nearby residents, but one that likely cannot be reasonably mitigated.
12. VAI analyzed the signalized and unsignalized intersections using Synchro 12<sup>TM</sup> software. The methodology utilized was discussed in the TIA and appears compatible with MassDOT guidelines and is appropriate. For signalized and unsignalized intersections, the *Highway Capacity Manual* (HCM) 7<sup>th</sup> Edition was used. TEC concurs with the use of these analysis tools. *No response required.*
13. The analyses for the intersection of Route 113 at Wheeler Road / Jones Avenue shows levels of service (LOS) B or better for all movements. *No response required.*
14. For the unsignalized analyses, the side street movements at Route 113/Wheeler Street and Route 110/Wheeler Street intersections will operate at LOS D, E, or F, depending on the condition analyzed. A LOS of "D" or better is generally defined as "acceptable" operating conditions. Off-site mitigation has been described in the TIA to improve the LOS E and F conditions noted.
15. A Traffic Signal Warrant Analysis (TSWA) was conducted for 2024 Existing, 2024 Build, and 2031 Build conditions at the intersection of Route 113 / Wheeler Street with results shown in Table 12. A design speed of  $\leq 40$  MPH was used. Traffic volumes from April 2024 were not adjusted downward to reflect average month conditions, consistent with MassDOT guidelines for counts conducted in a year that Weekday Seasonal and Axle Correction Factors are not published. Since 68% of the traffic exiting Wheeler Street turns right, a 20% reduction of right turns was applied to 2024 Build and 2031 Build conditions. The TIA indicates that the intersection meets Traffic Signal Warrants 1, 2 and 3 under some of the conditions analyzed. However, as the intersection is under MassDOT control, MassDOT typically requires that Warrant 1 (Eight-Hour Vehicle Warrant) be met to consider traffic signal installation at State Highway intersections. Warrant 1 is not met under 2024 Existing conditions, nor under 2024 Build or 2031 Build conditions with the 20% reduction in right turns applied. As such, the Applicant is not proposing signal installation. TEC generally concurs with the analysis parameters and results. However, the Applicant should provide supporting documentation justifying the 20% traffic volume reduction in a response to comments.

16. The Applicant proposes a "fair share" cost contribution toward the proposed mitigation at the intersection of Route 113 / Wheeler Street. However, TEC suggests the Applicant be required to fund, design and construct the improvements, if the City concurs with implementation since this is not a currently programmed municipal infrastructure project. The TIA did not include a sight line assessment for this intersection and there are apparent sight line deficiencies that should be more thoroughly vetted; this may require extensive clearing to meet minimum safety criteria. Any improvements at this location may require both MassDOT and City approval.
17. A traffic signal warrant analysis should also be conducted for the intersection of Route 110 / Wheeler Street. Site-related traffic volumes are projected to increase by only 10% to 20%, but the level of service is projected to decrease from "D" to "E".
18. The Applicant proposes to restripe the stop line and crosswalk at the intersection of Route 110 / Wheeler Street. TEC agrees with this proposal. However, as this intersection had a crash rate higher than the MassDOT averages, TEC also recommends the City requests that the Applicant approach MassDOT regarding other intersection warning signs on Route 110, providing a reflectorized red stripe on the stop sign post, and/or providing LED warning lights around the stop sign border as additional safety measures.
19. The TIA states that Wheeler Street has two lanes separated by a double-yellow centerline (DYCL). However, the centerline pavement markings are quite faded in several sections. The markings should be reapplied while other striping work occurs as noted in Comment 18.
20. The Applicant has provided stopping sight distance (SSD) and intersection sight distance (ISD) measurements for the major site access points. Of particular interest in the City of Methuen are the intersections of Wheeler Street at Rinzee Road and Wheeler Street at Wheeler Road. The results are shown in Table 13 of the TIA and have been compared to recommended values obtained from A Policy on Geometric Design of Highways and Streets, 7th Edition, American Association of State Highway and Transportation Officials (AASHTO), 2018. The measured distances have been shown in the TIA to exceed these values, except for the measured ISD for vehicles looking north from Wheeler Road to Wheeler Street (110 feet). However, Table 13 contains a note stating that the ISD can be improved to meet the minimum SSD by trimming/removal of trees and regrading of the embankment along the west side of Wheeler Road and Wheeler Street. It should be noted that this would involve work on private property and may only marginally improve sight lines. VAI should perform a multi-way stop warrant analysis for this intersection, especially since 20% to 30% of the site-related traffic is projected to pass through it. If warranted based on traffic volumes or sight distance considerations, a multi-way stop could be a safer and more cost-effective long-term solution when compared to the Applicant's proposed mitigation.
21. The sight line triangles should be more closely reviewed at the intersection of Wheeler Street / Rinzee Road. The exhibits in the TIA depict the required sight distances rather than the measured sight distances. There are existing shrubs/bushes on the southwest corner of the intersection that appears to impede the sight distance to the south. It is not clear whether the plantings are located within the right-of-way or on private property. The Applicant may need to work with the homeowner to relocate the plantings to maximize the sight lines closer to AASHTO's ISD recommendations.

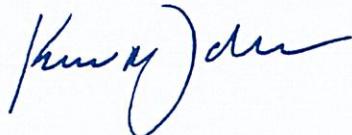
22. The Applicant has defined Transportation Demand Management (TDM) to be utilized on the site, including:

- The proponent will become a member of the Merrimack Valley Transportation Management Association (MVTMA).
- Assign a transportation coordinator for the project.
- Facilitate a rideshare matching program for residents.
- Provide a “welcome packet” to residents detailing public transportation services, bicycle and walking alternatives and other commuter options.
- Provide pedestrian accommodations on site to encourage walking.
- Consider providing electric vehicle charging stations.
- Provide short-term parking or loading zone for carshare and delivery services..
- Provide secure bicycle parking on-site.

TEC concurs with these TDM measures. *No response required.*

Please do not hesitate to contact me if you have any questions concerning this peer review at 978-794-1792. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
*“The Engineering Corporation”*



Kevin R. Dandrade, PE, PTOE  
Principal / Practice Area Leader for Transportation Planning