

September 28, 2022

Freetown Planning Board
3 North Main Street
Assonet, MA 02702

RE: Proposed Industrial Warehouse Development – 31 Innovation Way
Map 236 Lot 6
Peer Review Letter 1

Dear Board Members,

This letter is to advise that we have reviewed the submission for a Proposed Industrial Warehouse Development, located at 31 Innovation Way, prepared by MBL Land Development & Permitting Corp. (“MBL”) and TEC, Inc. (“TEC”) on behalf of the Applicant, V.M.D Companies, LLC (“VMD”). The submission includes the following documents:

- Plans entitled “Site Plans, 0 Innovation Way,” prepared by MBL, dated July 25, 2022;
- Report entitled “Drainage Analysis,” prepared by MBL, dated July 25, 2022;
- Memorandum entitled “Traffic Impact Assessment,” prepared by TEC, dated July 26, 2022;
- Application entitled “Form SPR – Application for Site Plan Review,” prepared by VMD;
- Document entitled “Municipal Lien Certificate,” dated June 16, 2022;
- Document entitled “100 foot Abutters List Report,” dated April 7, 2022;
- Document entitled “Waiver Request Letter, Innovation Way,” dated July 25, 2022.

The property associated with this project is located in both Freetown and Fall River; however, our review is limited to the project’s impacts to the Town of Freetown. Per Town of Freetown request, these documents have been reviewed for conformance with the 2008 Massachusetts Stormwater Handbook, Rules and Regulations of the Planning Board as Site Plan Review Authority (Section II, parts B & C), Town of Freetown General and Zoning By-laws (Article 11), as well as best engineering practices. Within the Zoning By-Laws, our review focuses on Sections 11.23 (Site Plan Review) and 11.31 (Off-Street Parking and Loading Regulations). We have also reviewed the traffic impact assessment (TIA) including traffic count data, traffic count adjustments/growth and methodologies, crash data, trip generation and distribution, intersection capacity analysis, traffic-related site plan review, pedestrian accommodations, and best engineering practices.

Project Description

The site is located along the eastern side of Innovation Way in Freetown and Fall River, and is referenced as Freetown Assessors ID 236-006.01 and Lots 185 and 189 on Assessors Map W-19 in Fall River. The site contains a total of area of 122.37 acres, and is currently undeveloped consisting of woods and bordering vegetated wetlands.

The proposed site development consists of the construction of four industrial warehouse buildings with associated site access, parking, loading, utilities and a stormwater management system. Three of the proposed buildings, referenced as Buildings 1, 2 and 4, are located within the City of Fall River and one building, referenced as Building 3, is located within the Town of Freetown. In total 598 parking spaces and 134 loading spaces are proposed in Fall River and 177 parking spaces and 42 loading docks are proposed in Freetown. Access/egress to the Project will be provided via nine (9) new driveways along the easterly side of Innovation Way, which is currently under the jurisdiction of the Massachusetts Department of Transportation (“MassDOT”).

Site/Civil Comments

Our comments note missing items and noncompliance with various standards as outlined below.

Stormwater Management Standards

1. The proposed project site is located within both Freetown and Fall River. It should be noted that a portion of the stormwater runoff generated by the project within the limits of Freetown is routed across the municipal boundary into Fall River. Stormwater runoff generated by the entirety of the Building 3 roof and portions of the impervious surfaces west of Building 3 is routed to stormwater best management practices (BMPs) on the Fall River side of the project site via closed drainage piping. BMPs and stormwater infrastructure located outside of Freetown are not included in this review. Therefore, this review cannot confirm the project’s full compliance with the Massachusetts Stormwater Management Standards. Only the stormwater infrastructure and BMPs located within the limits of Freetown (Stormcapture System C, and Focal Point Bioretention System B) are reviewed below for conformance with the Massachusetts Stormwater Management Standards.
2. Standard 2 – The Applicant indicates that the proposed design will not result in additional off-site flooding and post-construction peak discharge rates will not exceed pre-construction rates. We have the following comments on the calculations that may impact the peak rates of runoff:
 - a. The Test Pit 105 log indicates that estimated seasonal high groundwater (ESHGW) is at elevation 222.40. However, the proposed finished grade elevation of the vegetative filter strip at this location is approximately 218, well below the ESHGW elevation. Groundwater could break through the vegetative filter strip and enter Focal Point Bioretention System B, significantly impacting the performance of the

proposed stormwater management system. The Applicant's stormwater design should address the potential for elevated groundwater conditions in this area.

- b. Test Pit 105 is the only test pit near Focal Point Bioretention System B. A test pit should be performed within the footprint of proposed Focal Point Bioretention System B in order to confirm soil characteristics and ESHGW elevations.
 - c. We recommend the Applicant explore adding an emergency overflow outlet from the proposed Stormcapture System C. If subsurface stormwater infiltration chamber systems are not properly maintained, and do not include an emergency outlet pipe, surcharging of upstream structures can result.
 - d. Based on our calculations, Subcatchment PR-11 appears to occupy a total area of approximately 40,000 square feet, as opposed to the 79,103 square feet listed on Figure 8 in the Drainage Analysis.
 - e. Subcatchment PR-36 shown on Figure 8 in the Drainage Analysis appears to have been omitted from the HydroCAD model. However, the total area for the pre-development limit of analysis and post-development limit of analysis in HydroCAD match. We suspect the areas for some of the subcatchments included in the post-development model are inaccurate.
 - f. Pond 57P in the HydroCAD model has one 12" culvert as an outlet device; however, Sheet C-6.2 shows two 12" culverts discharging from the detention system. The Applicant should address this discrepancy.
3. Standard 3 – The Applicant indicates that the proposed design will collect stormwater runoff and recharge it back into the ground on-site. We have the following comments on the calculations that may impact groundwater recharge:
- a. The infiltration rate used in the HydroCAD model for the Stormcapture System C was 2.41 in/hr, which is the infiltration rate associated with Loamy Sand. However, the test pit log for test pit 115 indicates that the soil texture at the elevation where infiltration will occur (bottom of stone elevation 219.25) is Sandy Loam. The infiltration rate associated with Sandy Loam per the Massachusetts Stormwater Management Standards is 1.02 in/hr.
4. Standard 4 – The Applicant indicates that the proposed design will remove 90% TSS prior to discharge. We have the following comments on the calculations that may impact TSS removal and provided water quality volume:
- a. The Massachusetts Stormwater Management Standards state that the required water quality volume is the runoff volume that requires TSS treatment. For Subcatchment PR-30 containing the vegetated filter strip, the required water quality

volume is 11,041 cubic feet as noted in Appendix D of the Drainage Analysis. The summary for the vegetated filter strip in the HydroCAD analysis (Pond 56P) indicates that the provided water quality volume of the vegetated filter strip is 4,482 cubic feet. The water quality volume of 11,041 cubic feet must be met by the vegetated filter strip in order to qualify for TSS removal credit.

- b. Per Volume 2 Chapter 2 of the Massachusetts Stormwater Handbook, the flow length of impervious surfaces upstream of the vegetated filter strips must be limited to 75 feet long in order to receive TSS removal credit. The proposed flow length upstream of the vegetated filter strip is approximately 180 feet long.
 - c. Per Volume 2 Chapter 2 of the Massachusetts Stormwater Handbook, vegetated filter strips must be constructed at least 2 feet above the ESHGW elevation. The test pit log for test pit 105 observed mottling at 222.40, and the proposed finished grade of the filter strip at this location is approximately 218.
5. Standard 8 – We have the following comments regarding construction period pollution prevention and erosion and sedimentation control:
 - a. Projects that disturb one acre of land or more are required to obtain coverage under the NPDES Construction General Permit issued by EPA and prepare a Stormwater Pollution Prevention Plan (SWPPP). It is recommended the Planning Board require the submittal and approval of the final SWPPP as a condition of approval. We recommend the final SWPPP be submitted to the Planning Board one month prior to the beginning of construction to allow the Board to review and comment on the SWPPP. We also recommend the Board require, as a condition of any approval, that SWPPP inspections be performed consistent with the requirements of the NPDES Construction General Permit and that copies of all SWPPP reports be submitted to the Town of Freetown.
 - b. The existing site is currently wooded. Construction will require significant clearing, resulting in significant construction period erosion and sedimentation. Sheet C-8.2 should include construction period BMPs, such as temporary diversion swales and sediment traps, properly designed and sized per the Massachusetts Stormwater Handbook and the Erosion and Sedimentation Control Guidelines: A Guide for Planner, Designers, and Municipal Officials. If necessary, future construction period observations for the development could be coordinated with the City of Fall River.
 6. Standard 9 – We recommend that yearly Operation and Maintenance reports be provided to the Town. The EPA, through the Small Municipal Separate Storm Sewer System (MS4) permit, is requiring that ongoing maintenance of private stormwater management systems be performed regularly and documented.

Rules and Regulations of the Planning Board as Site Plan Review

Authority (Section II, parts B & C)

1. Section II. B. 3. n. – The Applicant has requested a waiver from providing estimated water and sewer usage calculations. Because the Applicant states that Building 3 will be served directly by City of Fall River water and sewer, the Town of Freetown may not need this information.
2. Section II. B. 3. n. – The Applicant has requested a waiver from providing plans and profiles for all proposed drainage and sewer systems. At a minimum, we recommend the Applicant provide a profile of the proposed sewer from SMH-5 to the connection to the existing sewer main in Innovation Way. We defer to the Planning Board whether profiles are required for other utilities (such as drainage), which do not connect to infrastructure in the Town's right-of-way.
3. Section II. B. 3. r. – Parking lots should be 1-1/2" Type I-1 top bituminous concrete over 2-1/2" Type I-1 binder bituminous concrete over 12" of bank run gravel conforming to Massachusetts Highway Spec. M1.03.0 Type b. The Applicant should revise the construction detail on Sheet C-9.0 to comply with this regulation.
4. Section II. B. 3. t. – The Applicant should add the note "The Contractor shall give seven (7) days' notice to pertinent Town Departments before commencing work in the field" to Sheet C-2.0.
5. Section II. B. 4. – The Applicant has requested a waiver from providing impact statements. The only impact statement we received as part of the application materials was the "Traffic Impact Statement" memorandum by TEC. See "Traffic Comments" section below. We suggest the Applicant provide a brief description of impacts to Freetown under each category.
6. Section II. C. 2. – Sidewalks should be separated from the roadway edge by a vegetated border area of at least 5 feet to increase pedestrian safety. The current proposed sidewalk along Innovation Way is directly adjacent to the roadway, without a vegetated border area. See Capacity and Queue Analysis Comment 19 below under "Traffic Comments" for a recommendation to replace the proposed sidewalk with a shared-use path to accommodate both pedestrians and bicycles.
7. Section II. C. 3. – The design should demonstrate that the project will not result in significant increase in the rate and volume of stormwater runoff over natural or existing conditions. The Drainage Analysis does not analyze pre-development and post-development changes in volumes of stormwater leaving the site, and the Applicant has requested a waiver from this Section. Given the proposed routing of stormwater into Fall River, a detailed analysis of volumes may not be necessary for this Freetown Planning Board application. Comments on rate of runoff are provided in a previous section.

Town of Freetown General and Zoning By-Laws (Article 11)

1. The project's Form SPR – Application for Site Plan Review indicates the project is located in the General Use District. Among other restrictions, the By-Laws limit building heights in the General Use District to 3 floors or 40 feet in height (Article 11.17), which is less than the proposed 48-foot Building 3. However, based on a review of the latest Freetown zoning map and based on the zone reference in the Freetown Zoning Table on Sheet C-4, the property may also be located in the Science and Technology Overlay District (STOD), which provides more flexibility. The Applicant should clarify whether this project is filed under the STOD regulations (Article 11.30).
2. Article 11.23 H. Circulation – Site plans should provide clearly marked, safe circulation patterns for both vehicles and pedestrians. Sheet C-11.2 shows the WB-67 semi truck extending into the opposite side of the double yellow line in the right-of-way in order to turn left into the site. The Applicant should consider increasing the curb radii such that the truck is not required to cross the double yellow line on Innovation Way to enter the site properly.
3. Article 11.23 H. Parking – Parking areas should be located to the rear or side of buildings. Parking is proposed in front of Building 3.
4. Article 11.31 F. – The “Parking Calculation Table – Building 3” provided on Sheet C-5.2 appears to calculate parking based on Fall River requirements, rather than Freetown requirements, and the Applicant has requested a waiver to provide only 170 spaces. Please refer to Site Plan Comment 21 below under “Traffic Comments” for additional information on required parking.

General Comments

1. The existing topography information does not extend to the limits of the property boundary on Sheet C-6.2. Existing contours should be shown to the property lines on Sheet C-6.2, as they are on Sheet C-3.3, so that the viability of the proposed grading design can be reviewed.
2. Sheet C-8.2 should include existing and proposed contours so that locations of proposed erosion controls can be reviewed.
3. We recommend that all slopes 2:1 or steeper be stabilized. There are 2:1 slopes along the northern portion of the site without stabilizing rip rap.
4. Water main – The Applicant proposes a new 12” water main to provide water and fire protection service to the proposed building. Unless otherwise dictated by fire department requirements, we recommend the hydrant tee be placed as close to the end of the 12” main as possible (i.e. near the proposed 4” and 10” connections) to facilitate future flushing of the 12” water main. In addition, a proposed water gate valve located near SMH-5 should be located on the water main. Lastly, the proposed water and sewer utilities should ideally have sufficient separation; otherwise, concrete encasement may be required.

Traffic Comments

While EP reviewed the methodologies outlined in the TIA for the entire development, as per request by the Town of Freetown, we only reviewed the impacts on the intersections located within Freetown. The following is a summary of the more significant comments; minor comments that are not anticipated to affect the impact on the project, the conclusions, or the recommendations are not included for brevity.

Traffic Impact Assessment (TIA)

Existing Conditions

1. The TIA indicated the posted speed limit along Innovation Way is 30-miles per hour (mph). The closest posted speed limit to the Site that EP verified is 35-mph, which is indicated by a pair of speed limit signs on both northbound and southbound directions approximately 2,200-feet north of Airport Road within Fall River.
2. The TIA described the Innovation Way westbound approach to South Main Street as having two left-turn lanes and one right-turn lane. We note that the lane configuration on this approach includes one left-turn lane and two right-turn lanes.
3. In Table 1 of the TIA (Existing Weekday Traffic Volume Summary), traffic volumes for the weekday daily, weekday morning peak hour, and weekday evening peak hour appear to be inconsistent with the collected counts and the methodology described for volume adjustments. Backups should be provided verification.
4. The methodology described in the TIA for obtaining COVID-19 traffic volume adjustments is inconsistent with the backups in the attachments, in that the TIA indicated that the traffic volume from 2019 used for comparison was grown by 0.5 percent per year from 2019 to 2022, whereas the backups use the 2019 volume with no annual growth to 2022. However, since the backups use the typical methodology recommended by MassDOT, EP takes no exception to the methodology used to calculate the COVID-19 adjustment factor. We note, however, the adjustment factor is an average for the daily volume, and the peak hour adjustment factors can vary drastically. EP recommends verifying that the 8.7 percent COVID adjustment is adequate for each of the weekday morning and evening peak hours.

Safety Analysis

5. TEC reviewed crash data provided by MassDOT at the study intersections between January 1, 2017 and May 31, 2022. EP notes that crash data from the MassDOT database is closed only through year 2019 and any crash data provided after is subject to change. As such, evaluating full datasets up to and including 2019 is the recommended methodology. Our independent research for the five-year period of 2015 through 2019 found different results than is reported in the TIA through 2022, which in part may be associated with the changes in traffic volumes in the area due to new developments in the recent years, in particular with the construction of Amazon Fulfillment Center. For an accurate safety analysis, we recommend reviewing local police data for the most recent closed years, if available.

6. The crash information listed in Table 2 of the TIA (Intersection Crash History Summary) is inconsistent with backups provided in the attachments.
7. TEC did not calculate crash rates at the study intersections, which are typically used to measure the safety of an intersection based on crash frequency and vehicle exposure, and to compare to MassDOT Statewide and District averages. We recommend calculating crash rates to determine if any safety mitigation needs to be considered at any of the study intersections.
8. The TIA stated the Applicant is committed to provide adequate sight distances to satisfy the American Association of State Highway and Transportation Officials (AASHTO) requirements for a speed of 40-mph. Consistent with standard methodology, EP recommends using the 85th percentile speed to calculate the required sight distance. Based on the collected speed data, the 85th percentile speed along Innovation Way was approximately 40 mph and 45 mph on the southbound and northbound directions, respectively.
9. We request that the Applicant provide sight triangles for the proposed driveways on the Site plans to indicate areas where all objects and vegetation should be removed and/or maintained below a height of 2.5 feet.

Future Conditions

10. The TIA states that TEC coordinated with the City of Fall River and the Town of Freetown and incorporated other planned developments into the no-build conditions. While we agree with this methodology, we identified several inconsistencies and request further clarification or revision as follows:
 - The TIA indicated there were several private and public development projects anticipated in the area, however only one nearby development was included.
 - The TIA described a development at 30-36 Innovation Way. Based on the description and the information provided in the attachments, it appears this is the Neon Marketplace development at 38 Innovation Way.
 - The TIA stated that TEC estimated the trips associated with the Neon Marketplace development using Institute of Transportation Engineers (ITE) Trip Generation 11th Edition, and distributed the trips along the roadway network based on existing traffic patterns; however, no backups have been provided for review. Regardless, it appears BETA provided a traffic study for the Neon Marketplace development. EP typically recommends using the trip generation and distribution from provided traffic studies for consistency.
 - It is our understanding that there have been modifications (May 2021) to the Neon Marketplace development that have changed the trip generation since the iteration of the traffic study that was included in the attachments (October 2020). We recommend that TEC coordinate with the Town to verify the most recent iteration is included.
11. From Figure 4 of the TIA, we noted several inconsistencies in the trip generation and distribution. When comparing the volumes at the four intersections through which all vehicles entering and exiting the project area must travel (Innovation Way at: (1) South Main Street, (2) Route 24 Southbound Ramps, (3) Route 24 Northbound Ramps, and (4) the southernmost

intersection in Fall River at the Building 1 truck driveway) to the volumes established by using the percentages outlined in the trip distribution table and the entering and exiting volumes from the trip generation table, we note differences ranging from 6 to 13 vehicles. Further, by comparing the volumes established by using the percentages outlined in the trip distribution table and the entering and exiting volumes from the trip generation table, with the volumes established by summing the total number of entering and exiting trips from each driveway, we found discrepancies for all volumes, the greatest for the exiting volumes for the evening peak period, which shows a difference of 81 vehicle trips. These discrepancies using the different methodologies should be rectified and the volumes traveling through all intersections should be updated accordingly.

12. The traffic volumes in Figures 3 and 4 of the TIA (2029 No-Build and Build Conditions Peak Hour Traffic Volumes, respectively) at the intersection of Innovation Way and Amazon North Driveway on the southbound approach appear to be inconsistent with the collected counts and methodology set forth in the TIA.

Capacity and Queue Analysis

13. Peak hour factors (PHFs) appear to remain unchanged from the default value of 0.92 in the Synchro analysis. We recommend updating PHFs based on the collected counts for each approach for a more accurate analysis.
14. Heavy vehicle percentages should be updated on the Synchro analysis based on the collected counts and be provided in the reports for verification.
15. The Synchro reports show inconsistent signal timings between Existing, No-Build, and Build conditions. For a fair comparison of the three analyses in evaluating the impacts of the proposed Site, signal timings should be maintained for consistency throughout the three scenarios. If any mitigation is warranted based on impacts of the proposed Site, the mitigated scenario should be provided separately.
16. If the signalized intersections include an exclusive pedestrian phase, this phase should be incorporated in the signal timings and accounted for in the analysis.
17. Several inconsistencies were found within Table 8 of the TIA (Capacity and Queue Analysis Summary) in comparison with Synchro reports. These include the following:
 - The summary table should compare consistent reporting methodologies for each type of intersection (signalized vs. unsignalized) under all scenarios (i.e Synchro reporting *or* HCM reporting, including same version of HCM (6th vs. 2010)). It appears, at a minimum, the intersection of Innovation Way and South Main Street was summarized using different reports.
 - The unsignalized Synchro reports for the Build condition evening peak hours have not been included in the Attachments and therefore have not been verified with the summary table in the TIA.
 - Multiple inconsistencies were noted in the level-of-service (LOS) letter designations and queues in Table 8.

18. As summarized by TEC, based on the provided analysis, it appears the traffic operations are acceptable at the intersections located within Freetown, with the exception of the Gas Station driveway. However, based on the inconsistencies outlined herein, EP cannot corroborate the findings at this time.
19. The TIA stated the Applicant commits to providing on-site bicycle racks or storage area for employees. While EP takes no exception to this provision, we note that bicycle use to/from the Site and within the Site can be encouraged with the presence of safe and comfortable bicycle accommodations in the vicinity of the Site. Since the Applicant is providing sidewalk along Innovation Way, EP recommends considering replacing the proposed sidewalk with a shared-use path to accommodate both pedestrians and bicycles, which would be a relatively minimal increase in cost for an improvement with significant benefits.

Site Plan

20. According to the Town of Freetown zoning by-laws, parking stalls shall be 10-feet wide. Parking dimensions shown on the Site plan are 9-feet wide. The Site plan should be revised to conform to the minimum parking space dimensions required by the zoning by-laws.
21. For a wholesale, warehouse, or storage establishment, the Town of Freetown zoning by-laws requires one parking space for every 1,000 sf of gross floor space. For Building 3, with a gross area floor of approximately 203,000 sf and falling within the Town of Freetown in its entirety, a total of approximately 203 parking spaces is required. The total number of employee parking spaces provided for this building is 170.

The Applicant has requested a waiver from the Freetown parking requirement, stating that the proposed 170 spaces is similar to the rest of the development which follows the City of Fall River regulations. A review of the City of Fall River parking regulations is beyond the scope of this review.

Based on our calculations using the Institute of Transportation Engineers (ITE) Parking Generation Manual application, approximately 188 spaces are recommended for Building 3 based on an average rate. We recommend increasing the number of parking spaces to satisfy ITE recommendations and to improve conformance with the Town of Freetown requirements. If the Applicant maintains the request for only 170 parking spaces, the Applicant should provide additional justification for this lower number of spaces.

22. Site plans show a pedestrian curb ramp on the southern side of Building 3 employee driveway, at which location no crosswalk is shown. We recommend adding a crosswalk and receiving ramp on the north side of the driveway for a future sidewalk connection.
23. The site plans show pedestrian access to Building 3 by way of the employee driveway only. For pedestrians traveling to/from the south, this route is not direct and would be better served by providing a connection to Building 3 from the truck driveway located just over the Fall River Town Line.
24. Site plans show a crosswalk across Building 3 employee parking lot at a skewed angle. We recommend revising the parking lot layout to align the crosswalk perpendicular to vehicular travel way and minimize the crosswalk distance. Regardless of the crosswalk angle, the

crosswalk pavement markings should be revised so the markings align parallel to the vehicular travel way.

25. Fire truck turning templates should be provided for the Building 3 employee driveway to verify emergency access.

Our review is based on the information that has been provided. As noted above, additional review will be required to verify comments have been incorporated into the revised submission.

We appreciate the opportunity to be able to assist you with this important project. Please feel free to contact me at (617) 657-0273 or ask@envpartners.com with any questions or comments.

Very Truly Yours,



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