

Barnett Ovrut, Chair  
Zoning Board of Appeals  
Town of Foxborough  
40 South Street  
Foxborough, MA 02035

March 2, 2023

Re: Walnut Street Affordable Housing Comprehensive Permit Set – Foxborough, MA  
Civil/Stormwater and Traffic Peer Review

Dear Mr. Ovrut and Members of the Zoning Board:

On behalf of the Town of Foxborough, TEC, Inc. (TEC) reviewed documents as part of the engineering peer review for the proposed affordable housing development to be located at the address of Walnut Street in Foxborough, MA. The Walnut Street Joint Venture Group (the “Applicant”) submitted the following documents prepared by Weston & Sampson and Utile Architecture and Urban Design., which were reviewed by TEC for conformance with the Town of Foxborough Zoning Ordinance, industry standards and best management practices:

- Site Plans entitled “Walnut Street Affordable Housing Comprehensive Permit Set”, dated January 12, 2023.
- Utility and Stormwater Report for Walnut Street Senior Development, prepared by Weston & Sampson, dated January 13, 2023.
- *Proposed development of Affordable Housing Property – Foxboro, MA - Traffic Impact Assessment*; prepared by Weston & Sampson, dated January 12, 2023.
- List of Requested Waivers.
- Figure entitled “Grading & Drainage Exhibit – No. 1”, prepared by Weston & Sampson, not dated.

Upon review of the documents and plans, TEC has compiled the following comments for the Board’s consideration:

### **Site Plan Review**

1. TEC has noted that the Applicant has requested a blanket waiver from any and all Town of Foxborough local By-Laws, Regulations, and approvals, however it appears the Applicant meets the majority of State Regulations and general engineering best practices.
2. As the project is within 100 feet of a flagged resource area, and in some areas directly impacting the resource area, it will require a Notice of Intent filing. Additionally, TEC recommends showing the respective buffer zone(s) and impacts for the existing wetlands throughout the site.
3. The Applicant calls for fifteen (15) proposed visitors parking spots in the surface parking but proposes seventeen (17) visitor parking spots within the site plans. The Applicant should be consistent with what is shown in parking counts and what is shown on the plan.

4. According to the Site Plan (Buildings Two and Three), the Applicant calls for a proposed light fixture where nothing is proposed. On the Utility Plan (Building One), the Applicant calls for a proposed transformer where nothing is proposed.
5. The Site Plans currently show two gas lines through the parking lot. The Applicant should confirm if two gas lines are proposed or if the 2<sup>nd</sup> line was drawn in error.
6. The Applicant should provide turning templates showing the ability of emergency vehicles to access, circulate, and egress the site through the circulation pattern without leaving the paved surface. This includes the largest Town of Foxborough fire apparatus.
7. TEC recommends the Applicant should coordinate with the Town of Foxborough Fire Department and Highway Department for preferred locations of fire lanes (if needed), confirmation of hydrant locations, and sign requirements for fire lanes within the site.
8. TEC recommends adding spot grades to the Grading and Drainage Plan for each wheelchair ramp and along walkways to clarify the design satisfies both ADA regulations and the provided details.
9. The Applicant should confirm the accessible curb ramp type west of Building 3 (between AD-4 and AD-6) is applicable to the construction detail provided and meets ADA/AAB grading and slope requirements to/from the building doorway.
10. The sidewalk spur on the northwest corner of Building Three is noted to “Transition to Flush.” The plans should be revised to show construction details for this spur, and/or the addition of an accessible ramp, to guarantee compliance with ADA/AAB. The Applicant should confirm construction details for all proposed accessible transition styles are provided.
11. The Applicant should confirm EV charging stations and associated subsurface infrastructure doesn’t conflict with proposed utilities. The plans as shown presents the possibility of conflicts. The Applicant should provide information on required subsurface infrastructure which will be needed regardless of finalized manufacturer and/or brand chosen.
12. The Grading and Drainage Plan (Building One) shows potential runoff flowing to Walnut Street from the main entrance. TEC suggests revising the plans to limit runoff flowing off-site, treatment for this runoff, or an explanation on how this runoff meets requirements for de minimus flow as described in the Stormwater Handbook.
13. According to the Drainage Schedule, AD-10 and AD-11 have a proposed rim elevation significantly higher than the surrounding landscape area. TEC recommends altering the plan to ensure that runoff flows into the designated drainage structure.
14. While FE-9, FE-10, FE-11, and FE-12 are shown on the Grading and Drainage Plan with inverts, TEC recommends adding these drainage structures to the Drainage Schedule.
15. According to the Drainage Schedule, P-10 has a slope of 0.4%. The industry standard typically has a minimum drainage slope of 0.5%. TEC recommends revising P-10 to meet this minimum.

16. The Applicant should submit pipe sizing calculations to confirm adequate capacity for the proposed infrastructure.
17. Within the Site Plans (Buildings Two and Three), the Applicant proposes two maintenance sheds along the southeast landscape of site. In the Materials Plan (South), the Applicant also calls for a dumpster in the same area. TEC recommends the Applicant show where the dumpster will be located in respect to the maintenance sheds.
18. According to the Materials Plan (South), specs are mentioned regarding the dumpster and the trash totes. TEC recommends including these specifications within the plan set.
19. TEC suggests proposing adequate signage regarding the “secondary emergency access only” driveway.
20. Do Not Enter (R5-1) signage is identified on the sign summary within Sheet C504 and back-to-back with the stop sign adjacent to the circular driveway on the southeast corner of Building One. TEC notes that if the 20’ secondary emergency access aisle is meant to be closed to traffic, or allowable for one-way flow based on the width, notations should be added to the plan for their locations along this aisle. All R5-1 signs should be reduced to 30”x30” per the *Manual on Uniform Traffic Control Devices* (MUTCD).
21. The ‘One Way’ (R6-1) signs should be reduced to 36”x12” per MUTCD.
22. The Permanent Traffic Sign Summary on Sheet C504 should be expanded to include parking-related signage.
23. The minimum height from finished grade to the bottom of traffic sign in the Accessible Sign and Post Detail (Sheet C504) should be 7-feet. This should be consistent with all other signage on-site where the sign is in or abuts sidewalk or walkway areas.
24. The Planting Plan (Sheet L130) should be revised to include sight triangles along Walnut Street to/from the site driveway to indicate areas of clearing and/or no planting to maintain sight lines based on the recommendations and values identified in the Traffic Impact Assessment (TIA).

### **Stormwater Management Review**

1. *Standard 1 states that no new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

The Applicant appears to be compliant with Standard 1

2. *Standard 2 requires that stormwater management systems must be designed so that post-development peak discharge rates and volumes do not exceed pre-development peak discharge rates and volume.*

The Applicant includes a Stormwater Discharge Summary Table comparing the pre and post development post discharge rates. While the pre-development rates are decreased in the post condition, the pre-development peak discharge for Analysis Point A rates contrast from what is shown in the HydroCAD report. The Applicant should revise the stormwater report to confirm that the Stormwater Discharge Summary Table and HydroCAD report are consistent.

3. *Standard 3 requires that the annual recharge from the post-development site should approximate the annual recharge rate from pre-development or existing site conditions, based on soil types.*

The Applicant has provided Recharge Volume Calculations, and appears to be compliant with Standard 3.

4. *Standard 4 requires that the stormwater system must be designed to remove 80% of the average annual load of Total Suspended Solids (TSS).*

The Applicant has provided treatment train TSS calculations sheets. It appears the Applicant has designed a stormwater management system that removes at least 85% of the TSS and therefore compliant with Standard 4.

While MA Stormwater Standard 4 has been met, it should be noted Section 10.3.g(2) of the Foxborough Stormwater Management Regulations was not met, as it requires 90% removal of TSS for New Developments. As noted above, the Applicant has requested a blanket waiver from all local requirements.

5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*

The proposed project is not considered a LUHPPL; therefore Standard 5 is not applicable.

6. *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*

The Applicant stated that the proposed project will not discharge into a critical area, Zone II, or an Interim Wellhead Protection Area of a public water supply. TEC suggests including a graphic in the report to confirm.

7. *Standard 7 is related to projects considered Redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

The proposed project is not considered a redevelopment.

8. *Standard 8 requires a Construction Period Pollution Prevention Plan (CPPP) and Erosion and Sedimentation Control Plan to be implemented to prevent impacts during disturbance and construction activities.*

No CPPP or Erosion and Sediment Control Plan has been submitted to satisfy Standard 8. However, the Applicant stated that a Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan will be incorporated into the final stormwater report. TEC recommends the final stormwater report be reviewed prior to the issuance of a building permit.

9. *Standard 9 requires an Operation and Maintenance (O&M) Plan to be provided.*

No O&M plan has been submitted to satisfy Standard 9. However, the Applicant stated that an operations and maintenance plan will be incorporated into the final stormwater report. TEC recommends the final stormwater report be reviewed prior to the issuance of a building permit.

10. *Standard 10 Prohibits all illicit discharges to the stormwater management system.*

No Illicit Discharge Statement has been provided to satisfy Standard 10. However, the Applicant stated that an illicit discharge compliance statement will be incorporated into the final stormwater report. TEC recommends the final stormwater report be reviewed prior to the issuance of a building permit.

11. Additional Comments:

- a. According to the Drainage Schedule, it appears that the outlet control structures have elevation and specifications that are called out and not consistent with the stormwater report. The Applicant should revise accordingly.
- b. It appears the sediment forebay for IB1 is undersized, with approximately 8,650 SF more impervious area flowing to it than shown in the sizing calculation.
- c. The Applicant may want to consider adding a drainage structure within landscaped area to the south of the site to capture offsite runoff.

### **Traffic Impact Assessment**

1. The traffic study area includes two (2) intersections in the vicinity of the site. Based upon the size, scope, and location of the development, TEC finds that the study area as provided in the TIA is sufficient to capture the effects of the project on surrounding roadways based on TIA guidelines set forth by MassDOT. This includes an evaluation of intersections in which the site generated trips increase the peak hour traffic volume by more than 5 percent and/or by more than 100 vehicles per hour per MassDOT's *TIA Guidelines* (Section 3.1.C).
2. The Applicant has provided traffic data collection during the weekday morning and weekday evening peak periods, as well as concurrent daily traffic counts. These June 2022 counts were conducted when schools were in regular session and subsequent to MassDOT's revised guidance on traffic volumes post-COVID. No adjustment to the counts was made to reflect seasonal fluctuation as June represents a month greater than the average-month conditions.
3. In the Seasonal Traffic Adjustment section, the 2019 MassDOT's weekday seasonal and axle correction factors is referenced in the Appendix as TEC's. The typographical error, however, does not affect the results reported in the TIA.
4. The TIA notes the use of the previous "3 years" of crash data available from MassDOT's IMPACT portal; however, five-years of data has been given including the most recent four years of complete data (2017 through 2020). Note that crash rates should only be calculated using years of complete data based on recent discussions with the MassDOT Traffic Safety and Engineering Section and should also not include those years of COVID-effect (2020 or 2021). Although the overall data for these COVID years can be included and analyzed for geometric and driver deficiencies, calculated crash values such as crash rate should be revised to only include 2019 and prior years.
5. The TIA did not provide a date for which the sight distances dates along Walnut Street were observed and measured. The vegetation along the east and west side of Walnut Street typically grows thick and near the edge of pavement during the summer months and therefore the intersection sight distance as reported in the TIA may be less than described. TEC does not believe that this will affect the overall exceeding of the minimum requirements; however, TEC does recommend that the Applicant commit to maintaining vegetation clearing within the public right-of-way and along the project's property line to ensure minimum / desired sight lines are met beyond the opening of the project.
6. The TIA did not provide support materials related to the Yearly Traffic Growth of 1.8% per year as provided by TEC; however, TEC is in agreement with this rate to provided consistency with the Commercial Street / Walnut Street Improvements Functional Design Report (FDR) as completed in 2021.
7. The TIA does not identify specific developments by others that may affect traffic volumes through the study area within the No-Build and Build conditions. The Applicant should provide a summary of other developments, if warranted, or identify that discussions with the Town have resulted in no developments which will result in increased traffic impacts.

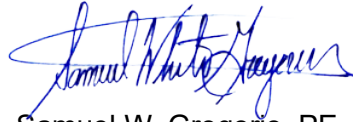
8. TEC reviewed the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11<sup>th</sup> Edition* for the estimated site generated traffic and confirmed the peak hour generation as noted in the TIA. The TIA utilizes the trip generation calculations for ‘Peak Hour of the Generator’ as opposed to ‘Peak Hour of the Adjacent Street’ which results in a conservative estimate for overall generation of trips and impact along the study area. TEC does not oppose the trip calculations as the trip differences are not significant and more conservative.
9. The trip generation calculations for the site are reported as less than described in the Commercial Street / Walnut Street Improvements FDR as the site characteristics have changed. Therefore, the impact of the site would be less than as reported in the FDR and the overall traffic signal design.
10. TEC reviewed the Analysis Results Table and noted a few typographical errors. These errors do not affect the results reported in the Traffic Study; However, the Applicant should correct them. Commercial Street (Route 140) at Walnut Street, 2026 No-Build for AM Peak the Queue length for Westbound Lane. Commercial Street (Route 140) at Walnut Street, 2033 Build for AM Peak the V/C ratio for the Eastbound right movement. North High Street at Walnut Street, 2033 with signal the V/C ratio for the southbound lane.
11. The results of the capacity analysis depicted in Table 8 and Table 9 are missing information related to projected 95th percentile queuing for unsignalized intersections and 50<sup>th</sup>/95<sup>th</sup> percentile queuing for signalized intersections. The Applicant should add this to the table.
12. Note that the traffic volumes at the intersection of Route 140 / Walnut Street are shown significantly less than the volumes previously collected in February 2020 as included in the Functional Design Report (FDR) for the Route 140 / Walnut Street improvements. Overall, the operations shown in the FDR with the elevated trip generation projections for the site still show operations of an improved nature over existing signalized conditions.
13. The TIA provides no documentation of how the trip distribution percentages were evaluated. At a minimum, the Applicant should provide a listing of documents reviewed to confirm the utilization of this trip distribution. In addition, as an Affordable Housing Property development with peak hour analysis, the Applicant should seek to evaluate the trip distribution based on the most recent US Census Journey-to-Work data that is publicly available.
14. TEC concurs with the operational findings of the TIA that the introduction of additional traffic along Walnut Street and the surrounding street network as a result of the project will have a negligible impact on operations. The proposed traffic signal improvement at Walnut Street and Commercial Street (Route 140) will significantly improve traffic operations at the intersection.

Please do not hesitate to contact us directly if you have any questions concerning our comments at 978-794-1792. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
“The Engineering Corporation”



David J. Nader, PE  
Project Manager - Strategic Land Planning



Samuel W. Gregorio, PE, PTOE, RSP<sub>1</sub>  
Senior Traffic Engineer