

Ms. Kathleen Colwell  
Planning Division Director  
Department of Economic and Community Development  
41 Pleasant Street  
Methuen, MA 01844

November 4, 2020

Re: 18-20 Ayers Village Road Methuen, MA  
Civil & Traffic Engineering Peer Review

Dear Ms. Colwell and Members of the Planning Board:

On behalf of the City of Methuen, TEC, Inc. reviewed documents as part of the civil and traffic engineering peer review for the proposed site to be located at 18-20 Ayers Village Road. Sonny Valley, LLC ("Applicant") submitted the following documents prepared by Greenman-Pedersen, Inc. (GPI), which were reviewed by TEC for conformance with the City of Methuen Zoning Bylaws, Massachusetts Stormwater Standards, and generally accepted industry standards:

- *Transportation Impact and Access Study – Proposed Contractor Buildings – Methuen, Massachusetts*; prepared by Greenman-Pederson, Inc., dated October 2020;
- Site plan entitled "*Proposed Site Re-Development Plans*," prepared by Greenman-Pederson, Inc., dated October 2020;
- Cover Letter and Application package, prepared by Johnson & Borenstein, LLC, dated October 6, 2020

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

#### **Site Development Plans**

1. The project proposes to provide 70 off-street parking spaces including five (5) handicap spaces. For the proposed 30,000 SF of contractor building, the City of Methuen requires 25 off-street parking spaces. The ITE publication, *Parking Generation, 5<sup>th</sup> Edition* suggests providing 53 spaces, which is more than double the city bylaw. A peak parking demand would require 71 total spaces (including parking supply of 18 spaces for a retail use in an extreme worst-case scenario). The Applicant currently meets zoning requirements, and nearly meets ITE suggested spaces. TEC concurs that sufficient parking will be provided on-site.
2. The Applicant should coordinate with the City of Methuen Fire Department to resolve the issues stated in their November 2<sup>nd</sup> email correspondence.
3. The Applicant should coordinate with the City of Methuen Fire Department for preferred locations for fire hydrants.
4. It appears that the two parking spaces at the end of the southerly most parking zone adjacent to the sales office have insufficient space for a vehicle to be able to back out based on the placement of the dumpster enclosure. The Applicant should consider adjusting this configuration.
5. The queue as reported in the TIAS for the site driveway during the weekday evening peak hour is 93 feet and would be expected to extend beyond the parking along both sides of the Site Driveway, conflicting with and blocking approximately 5 parking spaces on each side of the driveway.
6. TEC recommends that the wetland buffers be shown on all sheets within the site plan set, including the Demolition Plan and Erosion & Sediment Control Plan.

7. A limit of work and limit of clearing should be established and depicted on sheets 2-8 of the site plan set.
8. Proposed work, including landscaping, within the public right-of-way will require coordination with the Methuen Department of Public Works. Temporary traffic control may be required to remove the existing gravel driveway and to place new loam and sod.
9. The project, as designed, appears to meet the zoning requirements listed within Section VI of the City of Methuen Zoning Ordinance (frontage, setbacks, lot coverage, parking, etc.).
10. TEC recommends that the Applicant label doorways/entrances to the existing/proposed buildings to confirm site grading is appropriate.
11. The Applicant should confirm if the existing 20-foot wide driveway easement will be abandoned as part of the project.
12. TEC suggests that the silt fence abutting the roadway be extended to the silt fence abutting 22 Ayers Village Road to prevent runoff and erosion on said property.
13. The limits of 6" loam and hydroseed should be shown clearly within a limit of work line.
14. The proposed land alterations within the 100-foot buffer zone will require a Notice of Intent to be filed with the City of Methuen's Conservation Commission and Massachusetts Department of Environmental Protection.
15. Pavement, curbing, a dumpster, and transformer are proposed within 100-feet of wetlands which also places the project under jurisdiction of the City of Haverhill's Conservation Commission.
16. The Applicant should clarify if permits are being sought for work within the City of Haverhill.

#### **Stormwater Management Review**

17. TEC concurs with GPI's assessment that the project will reduce impervious area, improve the collection and treatment of stormwater, and provide improved groundwater recharge by increasing greenspace.
18. The project has been designed to meet the Massachusetts Stormwater Standards to the maximum extent practicable.
19. Standard 1 is fully met by the project. Existing drainage patterns are retained and TEC has reviewed and concurs with the rip rap sizing of stormwater outfalls to prevent erosion.
20. Standard 2 is fully met because the project will reduce overall impervious area onsite by eliminating large areas of gravel, and replacing these areas with manicured landscaping. Peak rates of runoff are reduced at all design points.
21. The stormwater report shows that runoff rates to the municipal stormwater system are decreased in peak rainfall events. The Applicant should coordinate with the City of Methuen DPW to confirm that the drainage connection is acceptable.
22. Standard 3 is met to the maximum extent practicable. TEC agrees that infiltration at the site is not feasible due to shallow groundwater conditions. Test pit logs show that estimated seasonal high groundwater is within 3-feet of the ground surface throughout the site. Providing infiltration BMPs under these conditions is not feasible because a minimum of 2-feet of separation is required per the MA Stormwater Handbook. Overall, the project will provide improved groundwater recharge over current conditions by increasing greenspace and directing stormwater to sediment forebays, water quality swales, and a bioretention area.

23. Standard 4 is met to the maximum extent practicable. Only one treatment train does not provide the full 80% TSS removal (79% removal is provided). In this area, the project will provide an improvement in water quality leaving the site by installing deep sump catch basins with hoods and a water quality unit.
24. TEC concurs with the sizing calculations provided for the water quality unit.
25. TEC concurs that Standard 5 is not applicable to the project.
26. TEC concurs that Standard 6 is not applicable to the project.
27. The project does qualify as a redevelopment project under Standard 7. TEC concurs with the Applicant that Standard 3 and 4 are met to the maximum extent practicable.
28. An Erosion & Sedimentation Control Plan has been provided by the Applicant, consistent with Standard 8. TEC has commented on erosion control in the previous section of this report.
29. TEC recommends that the property owner's information be listed within the O&M Plan where it states the "Party of Parties Responsible for Operation and Maintenance".
30. TEC recommends that Section 1 of the O&M Plan be revised to state that the responsibility for maintenance of the stormwater system will run with the property in perpetuity.
31. An estimated annual budget should be added to the Operation and Maintenance Plan to be in compliance with Standard 9.
32. The street sweeping section of the O&M Plan should describe the type of machine that will be used for sweeping and the frequency to obtain the 5% TSS removal credit, consistent with Volume 2 Chapter 1 of the Stormwater Handbook.
33. Standard 10 is fully met by the project. An illicit discharge statement has been provided.
34. The Applicant should confirm the origin of the 6" and 12" pipes that are shown to enter the municipal system at the existing catch basin east of the gravel driveway. If feasible, these pipe connections should be removed as part of the project.

### **Traffic Impact Assessment**

35. The Site Plans provided by the Applicant only show the new components of the site within the City of Methuen. The Site Plans also show the extension of access/egress into the Haverhill portion of the site which includes substantial area. The TIAS, as prepared by GPI, does not include any building program or traffic projections for the Haverhill portion of the site, which appear to need use of the driveway along Ayers Village Road in Methuen as the only access/egress point. The Applicant should provide details to the Haverhill portion of the site and adjust the traffic impact at the Ayers Village Road driveways accordingly.
36. The study area as depicted in the TIAS has been coordinated with TEC and is sufficient based on the assumed nature of the site's building program.
37. The Applicant has provided traffic data collection along Ayers Village Road and at the site driveway intersections during the weekday morning and weekday evening peak periods. TMCs were conducted on Tuesday, September 15, 2020 and ATRs were conducted on Tuesday, September 15, 2020; through Wednesday, September 16, 2020. Due to COVID-19, both dates represent a period before Methuen Public Schools began in-person/hybrid classes as well as a large percentage of the population is working from home. The Applicant

has provided a separate sensitivity analysis which depicts an increase in traffic volumes in order to take into account the effects of COVID on ADT in the area.

38. The TIAS provides a crash analysis at the site driveway intersections on Ayers Village Road. TEC's review of the MassDOT IMPACT Crash Portal indicates 3 crashes during the study period defined in the TIAS. There does not appear to be any notable crash trends based on the data.
39. Table 4 does not include sight distance measurements for both driveways. The Applicant should revise the TIAS to include sight distance measurements at both driveway locations.
40. The TIAS provides information related to other developments in the area; including #65 Ayers Village Road through the Methuen Planning Division. Given the proximity of the site to Haverhill, MA as well as Salem, NH, the Applicant should coordinate with the respective planning boards to identify additional future developments in the area.
41. Site trip generation calculations for the proposed uses were generated based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10<sup>th</sup> Edition* for Land Use Code (LUC) 180 – Specialty Trade Contractor. TEC generally concurs with this methodology as the ITE *Trip Generation Manual* is an industry standard; however, please note from Comment #1 any additional traffic that would be generated within the Haverhill portion of the site which will access/egress the site via Ayers Village Road.
42. Site generated trip distribution for the site is based upon existing traffic patterns and a review of existing trip distributions utilized for other local developments. TEC generally concurs with methodology used in the TIAS.
43. The TIAS provides the results of both the capacity and queue analysis and the sensitivity analysis for traffic impact at the site driveways. The results of the sensitivity analysis show LOS A on the Ayers Village Road mainline; but show excessive delay on the #18 Ayers Village Road Site Driveway. This includes increasing the delay on the opposing driveway to the site from D to E and on the site driveway from C to F. Note that this does not include any increase of trip generation from the Haverhill portion of the site. The Applicant should revise the analysis to include the additional Haverhill trip generation to show the full impact of development on the site.

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

Sincerely,  
TEC, Inc.  
"The Engineering Corporation"



Peter F. Ellison, PE  
Civil Engineer



Samuel W. Gregorio, PE, PTOE, RSP1  
Senior Traffic Engineer