

June 25, 2024

NEX-2400158.00

Ms. Jacki Byerley, AICP, Town Planner
Town of Andover
Planning & Economic Development
36 Bartlet Street
Andover, MA 01810

SUBJECT: Special Permit Application – P&G Andover Manufacturing Center Enhancement Project
30 Burt Road, Andover, MA
Traffic Peer Review Letter #1

Dear Ms. Byerley and Members of the Planning Board:

Greenman-Pedersen, Inc. (GPI) has performed a peer review of the of the materials submitted to the Andover Planning Board for the Special Permit Application related to the Gillette Company, LLC P&G Andover Manufacturing Center Enhancement Project to be located at 30 Burt Road in Andover, Massachusetts. GPI is in receipt of following documents, which serve as the basis for our review:

- *Application for Special Permit*, prepared by The Gillette Company, LLC; dated April 16, 2024.
- *P&G Andover Manufacturing Center Enhancement Project – Zoning Compliance*; prepared by Greenberg Traurig; dated April 16, 2024.
- *Alta/NSPS Land Title Survey*; prepared by Green International Affiliates, Inc.; dated March 27, 2024.
- *P&G Andover Manufacturing Center Enhancement Project, Andover, MA, Planning Board Submission & Notice of Intent Filing – Site Plans*; prepared by Nitsch Engineering; dated April 16, 2024.
- *Architectural Plans & Elevations*; prepared by Fennick McCredie Architecture; dated April 16, 2024.
- *Traffic Impact Assessment, Proposed Manufacturing Center Enhancement Project, P&G Gillette Facility, 30 Burt Road, Andover, Massachusetts*; prepared by Vanasse & Associates, Inc. (VAI); dated April 2024.
- *VAI Response to Traffic Engineering Peer Review #2, Town Yard Redevelopment, Andover, MA*; prepared by VAI; dated May 24, 2024.

As requested, GPI has reviewed the above materials for compliance with the applicable sections of the Town of Andover Zoning Bylaws, Massachusetts Department of Transportation (MassDOT) guidelines for traffic analysis, and general engineering practice. Based on our review, we offer the following comments for the Board's consideration:

General

1. There are discrepancies between the site plans, the Special Permit Application and the *Traffic Impact Assessment* (TIA) on the size of the proposed expansion. The plans and application state that the expansion will be 201,684 square feet (SF) in size, while the *Proposed Project* section of the TIA describes the expansion as only 136,460 SF of manufacturing space and the *Project-Generated Traffic* section of

the TIAS describes a 201,684 SF expansion. The Applicant should clarify this discrepancy and update the TIA as needed to reflect the correct size of the proposed the expansion.

Study Area

2. The *Traffic Impact Assessment (TIA)* estimates that 77 percent of site-generated passenger vehicle trips and 100 percent of site-generated truck trips will travel to/from the south on River Street; however, the Applicant has not include any intersections to the south within the study area for the TIA. **GPI recommends that the Applicant extend the study area to include the intersection of Ballardvale Street (Route 125) / Andover Bypass Street (Route 125) as the proposed development is anticipated to result in increases of 89 to 145 vehicle trips through this intersection during the weekday AM and PM peak hours, respectively.**
3. **Should the volume of site-generated vehicle trips exceed 25 trips in a turning lane or 35 trips in a through lane at either of the intersections of Route 125 with the I-93 NB and SB Ramps, GPI recommends the Applicant further extend the study area to also include the interchange intersections.**
4. GPI has raised concerns in Comments #16 and #17 on the distribution of site-generated vehicle trips through the study area intersections. Once these comments have been addressed, GPI will assess whether additional intersections should be included in the study area, particularly the intersection of Andover Street / Tewksbury Street as a high percentage of the site-generated trips are anticipated to travel through this intersection.

Traffic Volumes

5. GPI concurs with VAI's assessment that traffic volumes in the month of June represent above-average conditions and therefore, do not require seasonal adjustment. However, the Applicant has based the assumption that February volumes represent average-month conditions on only the MassDOT Weekday Seasonal Factors for only the year 2019. It is typical to use the average of three years of data when determining an appropriate seasonal adjustment factor. Based on an average of the Weekday Seasonal Factors from 2017 – 2019, traffic volumes in the month of February are approximately 2.3 percent lower than average-month conditions.
6. The Applicant has grown traffic volumes to a seven-year design horizon using an annual growth rate of 1.5 percent per year based on permanent count station data available within the Town of Andover. Two of these count stations are located on Interstate 93 and may not be representative of traffic growth on more arterial roadways like River Street. There is an additional permanent count station located on Route 125 in Wilmington (Station #5127), which may provide a better representation of traffic growth in this area. GPI reviewed the count data from Count Station #5127 and noted that this location experienced a significant increase in traffic from 2015 to 2016, but traffic volumes have otherwise remained relatively constant from 2010 – 2019. The increase in volumes from 2015 to 2016 may have been the result of construction in the surrounding area, including the reconstruction of the I-93 interchange at Route 125. Therefore, GPI believes that the 1.5 percent growth rate utilized by VAI will result in a conservative (worse than expected) estimated of 2031 No-Build traffic volume conditions. Further, the over-estimation of annual growth will far offset the under-estimation of seasonal variation.
7. The Applicant previously contacted the Town of Andover to obtain information on other planned or approved development projects that may impact traffic volumes within the study area. However, the site is located nearly immediately adjacent to the Wilmington town line. **Therefore, GPI recommends the Applicant also contact the Town of Wilmington to include traffic from any planned or approved developments within the Town of Wilmington that may impact traffic volumes within the study area, including the additional study area intersections requested in Comments #2 and #3.** GPI is

aware of multiple developments in close proximity to Route 125, including two on Upton Drive, that will increase traffic through the study area intersections.

Collision History

8. All of the study area intersections experienced an average of fewer than one collision per year and a crash rate well below the state and District-wide averages, indicating no significant collision patterns exist within the study. **GPI recommends the Applicant update the collision history evaluation to include the additional study area intersections as described in Comments #2 and #3.**

Vehicle Speeds

9. GPI concurs with the Applicants assessment of vehicle speeds along Lowell Junction Road. GPI notes that Lowell Junction Road and Connector Road meet River Street on both horizontal and vertical curves, which impede sight lines for vehicles exiting Lowell Junction Road and Connector Road, as well as for vehicles approaching the intersections on River Street. **GPI recommends the Applicant also collect speed data along River Street to assess the minimum required sight distances at the River Street intersections with Lowell Junction Road and Connector Road.**

Sight Distances

10. The Applicant has not provided an assessment of available sight distances at the proposed site driveways or study area intersections within the TIA, although the Conclusions stated that landscaping and signage adjacent to the site driveways should be kept low enough or sufficiently set back from the roadway so as not to impede sight lines. **GPI recommends the Applicant provide an assessment of the available sight lines at the proposed site driveways, as well as at the River Street intersections with Lowell Junction Road and Connector Road. The assessment should evaluate the adequacy of sight lines for both passenger vehicles and trucks due to the high number of truck trips that could be generated by the proposed use.**

Trip Generation

11. The trip generation estimate for the proposed development has been based on information provided by the Applicant on the anticipated number of employees and shift times. However, VAI has not included a narrative explanation of the data that was provided in the Appendix. Based on the data provided in the Appendix, it appears that the proposed use will operate with 107 employees working from 8:00 AM – 5:00 PM, 226 employees working from 6:00 AM – 6:00 PM, and 73 employees working from 6:00 PM – 6:00 AM. The Applicant has estimated in Table 5 that the development will generate 678 passenger trips on a daily basis; however, this volume is inconsistent with the total of 406 employees traveling to and from the site daily, which could generate 812 passenger vehicle trips. **The Applicant should provide an explanation of how the weekday daily vehicle trips were calculated.**
12. GPI also found some discrepancies in the addition of cells within the trip generation calculation table included in the Appendix, particularly for the calculation of employees in Group E and the total employees in the "COUNT" column. In addition, employees from Group J appear to have been excluded from the calculation of total employees in Column "A/C". **The Applicant should review the discrepancies in trip generation calculations contained in the Appendix and provide updated trip generation calculations with explanations of how the volumes in each cell were calculated and what the volumes in each cell are intended to represent.**

13. VAI has included trip generation calculations for the proposed 136,460 SF of manufacturing space based on Institute of Transportation Engineers (ITE) trip rates for Land Use Code (LUC) 140 – Manufacturing within the TIA Appendix. However, no reference to the ITE data was made in the narrative portion of the TIA and it does not appear that the Applicant has utilized the ITE trip rates in estimating site-generated vehicle trips. In addition, the proposed development will include a 201,864 SF expansion. Therefore, the size of the development utilized in the trip generation estimate based on ITE trip rates does not reflect the size of the proposed expansion. **The Applicant should explain the inclusion of the ITE data in the Appendix, and provide a comparison of the trip generation estimates based on ITE trip rates for the corrected development size and the Applicant-provided data of employee shift changes.**
14. VAI's trip generation estimate for the weekday AM peak hour appears to have been based on the number of Day Shift employees that would enter during the morning peak hour (107 employees) with an assumption that 5 percent will be dropped off, also creating an exiting trips. VAI's trip generation estimate for the weekday PM peak hour appears to assume that all Day Shift employees (107) will exit during the weekday PM peak hour, with 5 percent of these employees being picked up and also creating an entering trip. In addition, all Factory employees (73) are assumed to enter during the weekday PM peak hour to start their 6 PM – 6 AM shift. Based on the shift times noted in the Appendix, this methodology appears reasonable for the weekday AM and PM peak hours; however the Applicant should provide additional detail as described in Comment #11.
15. Based on ITE trips rates for LUC 140 – Manufacturing for a 201,460 SF expansion, the proposed development would be anticipated to generate 957 vehicle trips (478 entering and 479 exiting) on a weekday, 137 vehicle trips (104 entering and 33 exiting) during the weekday AM peak hour, and 149 vehicle trips (46 entering and 103 exiting) during the weekday PM peak hour.
16. Table 5 in the TIAS provides an estimate of the weekday daily and peak hour truck trips to be generated by the proposed manufacturing use. However, VAI has not provided any narrative explanation or trip generation calculations to demonstrate how the truck trips were developed. VAI estimates the development will generate 26 truck trips on a daily basis and 2 truck trips during each of the weekday AM and PM peak hours. GPI has reviewed ITE trip rates for LUC 140 – Manufacturing for truck trips and found that a 201,460 SF manufacturing use is estimated to generate 90 truck trips (45 entering and 45 exiting) on a weekday with approximately 6 truck trips occurring in each of the weekday AM and PM peak hours. Therefore, the truck trip estimate contained in Table 5 of the TIAS appears to significantly underestimate truck trips to be generated by the proposed development. **The Applicant should provide additional information on how truck trips were estimated and update the calculations, as necessary, to reflect the correct size of the expansion.**

Trip Distribution

17. The TIA states that the distribution of site-generated trips to and from the site was estimated based on a combination of existing travel patterns at the study area intersections and employee residence zip code information for employees expected to transfer from existing facilities to the proposed site. A list of employee zip codes was provided in the TIA Appendix; however, the Applicant has not provided any information on how trips were assigned to/from the site for each of these employee zip codes. **The Applicant should provide additional trip distribution calculations to demonstrate the anticipated route to/from the site employees from each municipality will utilize.**
18. The Applicant estimates that approximately 77 percent of employee trips will travel to/from the south on River Street, while the remaining 23 percent will travel to/from the north on River Street based on the journey-to-work data, which was not supplied in the TIA Appendix. However, the existing traffic volumes at the River Street intersections with Lowell Junction Road and Connector Road appear to indicate that approximately 45 percent of existing trips in the area travel to/from the south on River Street, while 55 percent travel to/from the north on River Street. The Applicant's current distribution may underestimate the impact of the proposed development on intersections to the north of the site.

Capacity and Queue Analysis

19. The Synchro analysis worksheets contained in the Appendix did not provide heavy vehicle percentages used in the analysis. Therefore, GPI was not able to verify the heavy vehicles included in the analysis. **The Applicant should provide updated Synchro analysis worksheets with this input information.**
20. GPI has provided several comments above on the traffic volume projections, trip generation, and trip distribution methodology that need to be addressed and capacity and queue analyses updated before GPI can fully assess the impacts of the proposed development on the operations of the study area intersections. Therefore, the following comments represent only a preliminary review of the project's impacts on traffic operations. GPI will perform a more comprehensive review and provide additional comments once the comments above have been adequately addressed.
- a. Traffic exiting River Street onto Andover Street experiences long delays and queues during the weekday PM peak hour under all analysis conditions. The additional traffic generated by the proposed development is anticipated to exacerbate these delays and queues. **As mitigation for the proposed development, GPI recommends the Applicant evaluate options to improve the operations of this intersection, including consideration for additional turning lanes installation of a traffic-control signal, and/or implementation of all-way stop control at the intersection, or realignment of the intersection to allow the Andover Street northbound approach to operate free-flowing.**

Mitigation

21. The majority of the vehicle trip generated by the proposed development will be employee trips. The Applicant has not proposed any Transportation Demand Management (TDM) measures to reduce single-occupant vehicle trips to the site. The Applicant should develop a comprehensive TDM program with consideration for the following measures:
- a. Assignment of a transportation coordinator (TC) to assist employees in finding alternative means of transportation, organizing and encouraging carpool and rideshare programs, implementing incentive programs for employees using alternative travel means;
 - b. Implementing a shuttle service to/from the MBTA commuter rail station;
 - c. Providing on-site showers and locker rooms for employees choosing to walk or bike to work;
 - d. Providing secure, weather-protected bicycle parking for employees biking to work;
 - e. Registering new employees with NuRide as part of employee orientation to assist with finding carpool and rideshare matches in the area, offer incentives for employees making green trips, and provide a guaranteed-ride-home to an employee who needs to leave in an emergency when making a green trip to work;
 - f. Providing designated carpool and rideshare parking spaces on the site located close to employee entrances;
 - g. Subsidizing transit passes for employees using public transportation to travel to work.

Parking

22. The Applicant has not provided an assessment of the adequacy of the proposed parking supply within the TIA. **GPI recommends the Applicant prepare an assessment of the potential parking demand to verify the adequacy of the proposed parking supply.**

23. To satisfy the Town of Andover zoning requirements, a total of 1,936 parking spaces are required on the site. However, the Applicant is proposing only 654 parking spaces. The trip generation data provided in the Appendix of the TIA indicates that the proposed manufacturing use will operate with 406 employees, many of whom will be working overlapping shifts. Between the hours of 8:00 AM and 5:00 PM, a total of 333 employees will be on-site, which represents nearly half of the parking spaces being filled by the manufacturing use alone. As a result, only 321 parking spaces will remain for the remaining ±580,000 SF of warehouse, manufacturing, office, and laboratory space. **The Applicant should consider conducting a parking inventory to assess the existing parking demand generated by the existing uses on the site.**
24. The Applicant has established a future reserve parking garage on the site to accommodate 1,619 parking spaces in the event additional parking is required on the site. **As a condition of approval of the development, the Applicant should be required to conduct annual parking occupancy monitoring studies beginning 6 months following initial occupancy of the proposed expansion and should be required to construct the reserve parking garage once the available parking supply reaches 90 percent occupancy.**
25. **The Applicant should clarify whether the proposed reserve parking garage can be constructed in phases to allow one or more tiers to be constructed at a time, as needed.**

Site Circulation, Access, and Egress

26. There is no traffic control currently proposed where the site driveway (Gillette Way) meets the site circulating roadway, which is likely to be the area of the highest conflict on site, particularly with the proposed truck bays near this intersection. **GPI recommends the Applicant consider installation of an all-way stop condition at this location to minimize conflicts between entering and exiting vehicles. The Applicant may also want to consider striping a hatched area along the circulating roadway adjacent to the truck bays to alert driveways to entering and exiting truck traffic.**
27. The circulating roadway ends abruptly in the truck loading area in Drop Lot C at the southerly end of the site, with little direction to drivers on how to navigate this area. **The Applicant should consider striping pavement markings to direct traffic through this truck parking area.**
28. **The Applicant should also provide traffic control, including STOP lines and STOP signs at the intersections of the circulating roadway with Burt Road and cross-connection to the Pfizer Building.**
29. **The Applicant should stripe STOP lines at the end of each drive aisle in Lot B at the intersection with the circulating roadway.**
30. **The Applicant has proposed snow storage areas on the inside of the curves at each corner of the property, which are likely to block sight lines for vehicles navigating around these curves. GPI recommends elimination of the snow storage areas in these areas to improve visibility navigating these curves.**
31. The Applicant has provided emergency vehicle path diagrams as part of the site plan package, which depict the path of a fire truck navigating the site. **GPI recommends the Applicant also provide vehicle path diagrams for trash removal vehicles accessing the dumpsters, as well as trucks accessing the bays near the main entrance into the site.**
32. Although there is a sidewalk proposed along the parking in proposed Lot C, the proposed walkways would require employees parked in these spaces to walk all the way to Lot B on this sidewalk in order to access a pedestrian walkway to the employee entrances. **The Applicant should consider a constructing a**

direct pedestrian path from the door in the center of the rear of the proposed manufacturing building to the sidewalk along Lot C.

Should you have any questions or require additional information, please contact me directly at (603) 766-5223 or by email to rebeccabrown@gpinet.com.

Sincerely,

GREENMAN-PEDERSEN, INC.



Rebecca L. Brown, P.E.
Senior Project Manager

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