

# MEMORANDUM

**Date** September 11, 2023

**To** Ms. Rachel Benson, Director of Planning & Economic Development  
Planning & Community Development  
Town of Wrentham  
79 South Street  
Wrentham, MA 02093

**From** Jane R. Davis, P.E.  
Steve Shekari

**CC** James D. Fitzgerald, P.E., LEED AP

**Subject** 10 Commerce Boulevard Traffic Peer Review  
Review of Traffic Impact Study – Proposed Gas Station and Convenience Store

Environmental Partners (EP) has reviewed the Traffic Impact Study (TIS) dated May 2023 and prepared by McMahon, a Bowman Company (McMahon) for the proposed gas station and convenience store (“the Project”) located at 10 Commerce Boulevard in the Town of Wrentham (“the Town”). The Project is part of the overall Wrentham Business Center subdivision project.

In general, McMahon has prepared this assessment in a professional manner, consistent with standard engineering practices. The following is a summary of EP’s traffic review.

## Project Description

The TIS outlines the following project description:

“The proposed gas station and convenience store would be developed on Lot 1 of the overall Wrentham Business Center subdivision project, located on the east side of Washington Street (Route 1) across from Hawes Street. The project site is located on the southeastern corner of the intersection of Washington Street at Hawes Street/Commerce Boulevard, as depicted in Figure 1. The site is bounded by Washington Street to the west, the Supercharged Entertainment facility to the east, Commerce Boulevard to the north, and Turnpike Truck Parts to the south.

The project would involve the construction of an approximately 4,500 square foot convenience store building with six vehicle fueling pumps (12 total fueling positions). A total of 25 parking spaces would be provided on the site, including one disability-accessible space. Access to the site would be provided via two full-access driveways on Commerce Boulevard. For the purposes of this traffic impact study, the intersection of Washington Street at Hawes Street/Commerce Boulevard would be placed under traffic signal control as part of other elements being developed for the Wrentham Business Center project.”

## Comments

The following summarizes EP's traffic review of the Project. Although EP performed a thorough review of the TIS, comments on items that are minor in nature and are not anticipated to impact the findings of the TIS or EP's recommendations have been omitted for brevity.

### Existing Conditions

1. The TIS shows that the collected traffic volumes were seasonally adjusted upwards based on historical data at one of the Massachusetts Department of Transportation (MassDOT) continuous count stations located on Interstate 495 (I-495). EP notes that seasonal adjustment should be primarily based on the Weekday Seasonal Factors report according to MassDOT guidelines<sup>1</sup>, which indicates traffic volumes collected during the month of April experience higher than average volumes for the roadway classifications within the study area, and therefore no seasonal adjustment was necessary. However, since we would not anticipate a significant change to the findings based on this adjustment, EP does not request further revision.
2. No backups have been provided in the TIS for the presented crash data summary and calculated crash rate for our review. However, EP's independent research into the MassDOT crash data portal found similar results to the information presented in the TIS, indicating the crash rate at the study intersection is expected to remain below the Statewide and District 5 averages.

### Future Conditions

3. As detailed in the TIS, the Project involves development of Lot 1 of Wrentham Business Center project, with Lot 2 already constructed and in operation as the Supercharged Entertainment facility, and Lot 3 consisting of a warehouse and minor office component, currently approved by the Wrentham Planning Board. The Project along with the Lot 3 development have been stated in the TIS to be constructed concurrently, and trip generation for both developments have been accounted for under the Build Conditions. This methodology is unconventional in that other developments outside of the subject development are typically accounted for under No-Build Conditions to allow for an evaluation of the impacts of the subject development alone. While EP takes no exception to this methodology given the background and planned concurrent construction of the two developments, we note that the presented results do not provide a basis for comparison of the subject Project impacts independent of all other developments.
4. The traffic signal warrant analysis has been performed under the assumption that Commerce Boulevard contains an exclusive left-turn lane and a shared through/right-turn lane. Considering the volume of the right-turn compared to the minimal through movement volume on this approach, the shared through/right-turn lane is anticipated to operate as a de-facto right turn lane, in which case the right-turning volume should be excluded from the analysis. It is our understanding that there has already been extensive coordination between the project team, the Town of Wrentham, and MassDOT, and that MassDOT had previously approved the methodology to perform the warrant analysis. As this falls under MassDOT jurisdiction, we

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<sup>1</sup> *Traffic and Safety Engineering – 25% Design Submission Guidelines*, MassDOT Highway Division, May 2022

assume this has been and/or will be reviewed by MassDOT as the project moves forward; verification from the Town is recommended.

#### Traffic Operations Analysis

5. EP notes that Table 2 of the TIS does not include the capacity analysis for the Washington Street southbound left, which operates at a LOS F during the weekday morning peak hour under Existing and No-Build conditions, and a LOS B or better during the weekday evening and Saturday peak hours under Existing and No-Build conditions.
6. The TIS presents the Build Conditions analysis under a signalized scenario only, and does not provide analysis for the Build Conditions under an unsignalized scenario to compare to the Existing and No-Build Conditions. This methodology is unconventional in that the Build conditions typically account for the additional traffic volumes of the development with no mitigation to allow for a comparison to the Existing/No-Build Conditions under the same scenario and a comparison to a Build with Mitigation condition that includes proposed improvements, such as signalization.

Given the prior coordination involving MassDOT and the Town of Wrentham for signalization of the study intersection, EP notes the following comparisons of traffic operations but we do not request further revision of the TIS:

- Under No-Build conditions, the Commerce Boulevard approach is expected to operate at a LOS E during the weekday morning peak hour and a LOS F during the weekday evening and Saturday peak hours. Under an unsignalized scenario, it would be anticipated that the Build conditions will likely operate at an unacceptable LOS F during all peak hours with additional delay and queueing.
- The Build conditions (with traffic signal mitigation) would provide an improvement to the traffic operations, with most movements operating at an acceptable LOS D or better during all peak hours. As outlined in the TIS, the Commerce Boulevard left-turns (during the morning and evening peak hours) and the Washington Street southbound left-turns onto Commerce Boulevard (during the morning peak hour) are anticipated to operate at a LOS E. We note that McMahon presented signal timings that prioritized the operations along Washington Street and will be updated as necessary as the project moves forward under MassDOT review.

#### Site Plan

7. The site plan shows a total of 25 parking spaces provided for the Project. The number appears to be lower than the minimum required spaces by the Town of Wrentham Zoning Bylaws, which would require one (1) space per pump and four (4) spaces per 1,000 square feet of convenience store.
8. The site plan shows the western site driveway is 20 feet wide, which is narrower than the minimum of 22 feet required by The Town of Wrentham Zoning Bylaws.
9. EP recommends providing a continuous pedestrian connection between the sidewalk along Commerce Boulevard and the convenience store.

10. The site plans did not provide truck turning templates for emergency vehicles and fuel refilling tanker trucks, and as such, no review of these items has been performed. We remain available to perform a review of these items if requested.

### Conclusion

EP notes that no sight distance evaluation was provided for the site driveways along Commerce Boulevard. Given the proximity of the driveways to Washington Street to the west and the cul-de-sac to the east, we would not anticipate high speeds along the roadway, and we therefore do not request further evaluation. However, we recommend maintaining signs and landscaping along Commerce Boulevard below a height of 2.5 feet to provide adequate sight distance of exiting site traffic.

EP agrees that signalization of the study intersection mitigates impacts of the Project based on the information presented in the TIS. We remain available for any further comments or questions.