



October 29, 2019

Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Attn: Lenore Mahoney
Executive Secretary

**Re: Proposed Multifamily Residential Development
Wellesley Office Park – 40 Williams Street
Traffic Peer Review**

Dear Mr. Seegel:

BETA Group, Inc. reviewed the Transportation Impact Assessment (TIA) prepared by Vanasse & Associates, Inc. (VAI) dated September 2019. The proposed residential development consists of 350 units to be located at 40 Williams Street within Wellesley Office Park.

EXISTING CONDITIONS

Six primary intersections were examined as part of the TIA:

- Route 9 at Sun Life Park Drive/ Wellesley Gateway – Signalized
- Route 9 at I-95/ Route 128 southbound Ramps – Signalized
- Route 9 at I-95/ Route 128 northbound Ramps – Signalized
- Route 9 westbound at Frontage Road/ William Street – Unsignalized
- Route 9 westbound at Frontage Road/ Quinobequin Road – Unsignalized
- Route 9 eastbound at Frontage Road/ Ellis Street – Unsignalized

EXISTING TRAFFIC VOLUMES

Existing traffic volume data were collected in October 2018. The traffic data collection effort included the use of Automatic Traffic Recorders (ATR) on Route 9 and Frontage Road, as well as Turning Movement Counts (TMC) at the six study intersections.

The ATR units recorded traffic volume data for 72 hours from Thursday, October 11, 2018 to Saturday, October 13, 2018. The data revealed an average weekday daily traffic volume of 19,525 vehicles per day (vpd) on Route 9 westbound, 7,445 vpd on Frontage Road, and 4,225 vpd on William Street. On Saturday, the data revealed traffic volumes of 21,595 vpd on Route 9 westbound, 3,665 vpd on Frontage Road, and 320 vpd on William Street.

Turning movement count (TMC) were collected at the six study intersections on Thursday, October 4, 2018 and Saturday, October 13, 2018 on Thursday morning from 7:00 to 9:00 AM and Thursday evening

from 4:00 to 6:00 PM, as well as Saturday midday from 11:00 AM to 2:00 PM. BETA finds these times and days to be acceptable.

TRAFFIC-VOLUME (SEASONAL) ADJUSTMENTS

The proponent compared the historical October AADT volumes with MassDOT counting station H8502 which showed October data to be 10% higher than the average month. To be conservative, the proponent did not adjust the volumes downward to reflect average month conditions which BETA finds acceptable.

SPEED DATA

Speed data were collected by the ATR machines. The posted speed limit on Route 9 is 45 miles per hour (mph) and the 85th percentile speed was found to be 54 mph. The regulated speed limit on Frontage Road is 30 mph and the 85th percentile speed was found to be 34 mph. The posted speed limit on William Street is 25 mph and the 85th percentile speed was found to be 28 mph northbound and 29 mph southbound.

PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are generally provided along the study area roadways. Marked crosswalks with ADA-compliant curb ramps and detectable warning panels are provided at pedestrian crossings. No formal bicycle accommodations exist within the study area.

PUBLIC TRANSPORTATION

The project is located 0.7 miles from a bus stop along the Massachusetts Bay Transportation Authority (MBTA) bus route 59 which travels between Needham Junction and Watertown Square. It is also located 1.0 mile from Eliot Station on the MBTA Green Line D Branch. Wellesley Office Park operates private shuttle service to and from Riverside Station on the MBTA Green Line D Branch. The Metrowest Regional Transit Authority (MWRTA) provides paratransit services through the Wellesley Council on Aging.

CRASH DATA

The most recent five years (2013-2017) of MassDOT crash data were examined for the study area intersections. The data revealed between seven and 92 crashes have occurred over the 5-year period at the study area intersections. The intersections of Route 9 at I-95/ Route 128 southbound Ramps, Route 9 westbound at Frontage Road/ Quinobequin Road, and Route 9 eastbound at Frontage Road/ Ellis Street have crash rates higher than the state and district average crash rates. Most of the crashes reported on Route 9 were revealed to be rear-end crashes. BETA finds the crash data summary to be acceptable.

In addition to historical crash data, MassDOT Highway Safety Improvement Program (HSIP) high crash location clusters were examined for the study area. Areas within significant crash clusters may be eligible for HSIP funding to improve safety. The intersections of Route 9 at the I-95/ Route 128 southbound ramps, Route 9 at the I-95/ Route 128 northbound ramps, Route 9 westbound Frontage Road at Quinobequin Road, Route 9 eastbound Frontage Road at Ellis Street were identified as HSIP clusters for the years of 2014-2016.

1. Intersection improvements have been made to the Route 9 and I-95/Route 128 ramps, however, the intersections of Route 9 westbound Frontage Road at Quinobequin Road and Route 9 eastbound Frontage Road at Ellis Street are both HSIP clusters and should be further examined for safety improvements.

FUTURE CONDITIONS

BACKGROUND DEVELOPMENTS

The following nearby projects were found to potentially increase traffic in the study area:

- Sport Complex, 900 Worcester Road in Wellesley
- 136 Worcester Street in Wellesley
- Wellesley Square Residences, 8 Delanson Circle in Wellesley
- 680 Worcester Street in Wellesley
- 16 Sterns Road in Wellesley
- Wellesley Park, 148 Weston Road in Wellesley
- Cedar Place, 2-3 Burke Lane in Wellesley
- Marijuana Dispensary, 24-26 Elliott Street in Newton

Future traffic volumes expected to be generated by each of the proposed developments were found from their traffic studies or using ITE trip generation methodology. These trips were then added to the network.

BACKGROUND TRAFFIC GROWTH

MassDOT continuous count station H8502, located on I-95 south of Quinobequin Road in Wellesley was examined to determine overall traffic growth patterns over recent years. Based on the data, it was determined that traffic has been relatively stable over recent years. To estimate future traffic growth, the TIS utilized a compounded annual growth rate of 1.0% for eight years. BETA finds this background growth rate to be acceptable and consistent with previous TIS completed in the Town of Wellesley.

NO-BUILD TRAFFIC VOLUMES

The 2026 No-Build traffic volumes were obtained by inflating the 2018 existing volumes based on examination of historical traffic growth patterns and adding traffic generated by nearby proposed developments.

BETA finds the discussed methodology and 2026 No-Build traffic volumes to be acceptable.

2. The total of the 2018 Existing Volumes, background growth (1% per year for 8 years) and the trips estimated to be generated by proposed developments (Appendix Figures A-1 through A-20) do not equal the volumes presented in Figures 6-8: 2026 No-Build Traffic Volumes. It appears that the volumes associated with a full build-out of the office park may have been included, and if so, this should be stated in the report. Please clarify the discrepancy.

PROJECT-GENERATED TRAFFIC

The proponent estimated trip generation based on data from the 10th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) was used to determine the trip generation of the 350-unit development. It is estimated that approximately 117 and 147 new vehicle trips would be generated from this development during the morning and evening commuting peak hours, respectively.

A shuttle service is provided for Wellesley Office Park employees to and from the Riverside Station, however, a reduction did not appear to be applied to the project-generated trips for the shuttle service. Please clarify.

3. Verify how trip generation rates associated with the existing office space were determined. A calculation sheet is provided in the Appendix, but the methodology should be outlined in the report as well.
4. Trip generation calculations for the existing office space shown in Table 6 do not match the volumes calculated in the Appendix and shown in Figures A-24 through A-26. The building size is inconsistent. Although the size discrepancy (73,868 SF versus 76,676 SF) is minor and would not impact the overall results, clarify the difference in square footage.

TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution pattern for the project was determined based on U.S. Census Journey to Work data for Wellesley residents. BETA find the trip distribution methodology for the project-generated trips to be acceptable, but offers the following comment regarding removal of existing office trips:

5. Please clarify how office trips to be removed were distributed onto the roadway network. If Journey to Work data were used (similar to residential trip distribution), they should be included in the Appendix.

BUILD TRAFFIC VOLUMES

Build traffic volumes were calculated by removing existing project trips generated by the office space to be demolished and adding estimated project trips to the No-Build volumes. BETA finds this methodology acceptable.

TRAFFIC OPERATIONS ANALYSIS

ANALYSIS RESULTS

Traffic analysis was completed at the study intersections for the 2018 Existing, 2026 No-Build, and 2026 Build scenarios during the morning and evening commuting peak hours as well as the Saturday midday peak hour. The 2026 Build analysis shows that all signalized intersections would operate at an overall LOS C or better during the AM, PM, and Saturday peak hours. All movements at the unsignalized intersection of Frontage Road at William Street would operate at LOS C or better for all analysis periods. At the unsignalized intersection of Frontage Road at Quinobequin Road, the Frontage Road westbound approach would operate at LOS F during the weekday morning peak hour and the Quinobequin Road southbound approach would operate at LOS F during the weekday evening peak hour under both No-Build and Build conditions.

SIGHT DISTANCE EVALUATION

Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) were examined for the intersections of William Street at Frontage Road and each of the project site driveways using the 85th percentile speeds on Frontage Road and William Street, 35 mph and 30 mph, respectively.

STOPPING SIGHT DISTANCE

The required SSD as discussed in the American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets (Green Book)* represents the distance at which an oncoming vehicle must see an obstruction in order to stop safely. This includes distance traveled

during perception-reaction time, and distance traveled while physically braking. The available SSDs are adequate at all locations.

INTERSECTION SIGHT DISTANCE

The recommended ISD as discussed in the *Green Book* represents the desirable distance at which a vehicle entering the roadway can see an oncoming vehicle to safely complete the movement without collision. Generally, an ISD consistent with the required SSD is sufficient as it provides enough distance for an oncoming vehicle to stop before collision. However, recommended ISD values are typically larger than the required SSD in order to provide greater driver comfort and fewer operational delays.

The ISDs were all determined to be adequate for left and right turns, with the exception of William Street at the East Project Site Driveway looking southeast, where the measured ISD is 177 feet, the recommended minimum ISD is 200 feet, and the desirable ISD is 335 feet.

RECOMMENDATIONS

Three primary improvement measures were discussed to address any traffic-related impacts generated by the project. These included: access-related improvements, off-site improvements, and a TDM program.

PROJECT ACCESS

Access to the project site will be provided via 4 driveways along the south side of William Street. The TIS makes recommendations regarding site access and circulation, including minimum roadway widths, appropriate signing and pavement markings, and ADA compliance.

OFF-SITE

The off-site recommendations outlined in the TIS aim to improve traffic operations along Route 9 and at the Route 9/ Interstate 95 interchange and advance the planning of future improvements to the Wellesley Office Park. The off-site recommendations are as follows:

- Optimize traffic signal timing at the Route 9 and Interstate 95 interchange.
- Improve access to William Street from Frontage Road.
- Plans for a right-turn slip-lane from William Street to the I-95/ Route 128 northbound on-ramp will be prepared and presented to the Town prior to submission to MassDOT.
- Enhance signs and pavement markings at the intersections of the westbound Frontage Road at Quinobequin Road and the eastbound Frontage Road at Ellis Street.
- Improve pedestrian and bicycle access to William Street.

TRANSPORTATION DEMAND MANAGEMENT

The TIS discussed several TDM measures that the Applicant has committed to implementing in order to reduce single-occupant vehicle (SOV) trips to and from the project site. These included:

- The applicant will join the Route 128 Business Council, which assists in encouraging the use of alternative modes of transportation.
- The Wellesley Office Park shuttle will continue to operate and the need for potential expansion will be evaluated.
- Information regarding alternative transportation options will be provided to all new employees and residents. Employees and residents will also be made aware of the Route 128 Business Council's Emergency Ride Home program.

- The applicant will provide bicycle and car-share parking.

ADDITIONAL COMMENTS

6. Please explain what the traffic volumes in Appendix Figures A-21 through A-23: "Backfill - 150,549 SF" represent and how they are utilized.
7. For off-site mitigation, a deceleration right turn lane on the Frontage Road approach to William Street was previously discussed.
8. For pedestrian safety purposes, we recommend that the overgrown vegetation along the Frontage Road sidewalk be cleared.
9. A traffic monitoring program should be established to monitor the AM and PM peak traffic periods three months after full occupancy. The monitoring program shall include all critical intersections within the project study area and mitigation funds set aside in an escrow account to be used to address traffic operational issues identified as part of the monitoring program.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.



Kien Y. Ho, PE, PTOE
Vice President

cc: Amy Black, BETA Group, Inc.
Job No: 5475-15