



September 9, 2019

Ref: 14691.00

Mr. J. Randall Becker, Chair  
Zoning Board of Appeals  
Town of Wellesley  
525 Washington Street  
Wellesley, MA 02482

Re: Transportation Peer Review Commentary  
Proposed Residential Development  
136 Worcester Street  
Wellesley, Massachusetts

Dear Mr. Becker and members of the Zoning Board of Appeals:

VHB/Vanasse Hangen Brustlin, Inc. (VHB) has performed a technical 'peer' review of the Traffic Impact and Access Study and associated site plans for the proposed residential development to be located at 136 Worcester Street in Wellesley, Massachusetts. The project known as the "Proposal Residential Development" as proposed is a development of 40 apartment units being serviced by 63 parking spaces on a site located off of Worcester Street (the "Project"). As part of this review effort, VHB reviewed the following documents:

***Traffic Impact Assessment "Proposed Residential Development, 136 Worcester Street, Wellesley Massachusetts;*** dated March 2018 and prepared by Vanasse & Associates, Inc.

***"Proposed Conditions Site Plan, 136 & 140 Worcester Street, Wellesley MA Engineering Plan Set";*** dated April 26, 2019 and prepared by Hayes Engineering, Inc.

VHB also visited the project site on August 28, 2019 and to review and observe the traffic conditions in and around the project site and to verify and compare the results presented in the report with what was occurring in the field.

## Preface

For the purposes of this review, it was assumed that the project meets the eligibility criteria for a comprehensive permit and VHB therefore does not provide commentary on this subject matter. VHB does not offer commentary on the actual site plan, other than how it relates to transportation-related issues. It is assumed that another firm and/or Town staff will focus on reviewing the application for typical site/civil engineering purposed (utilities, drainage and grading, environmental, etc.). The focus of this review is

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exclusively on the engineering and technical merits of the traffic study as well as the driveway and roadway plans submitted in support of the Comprehensive Permit application.

Since the proposed project site abuts State Highway Layout (SHLO) and is proposing to create a new curb cut, a State Highway Access Permit is required and MassDOT will have the opportunity to review the proposed project's access driveway design and its connection to their roadway. VHB defers to MassDOT's oversight on the design elements given the site's immediate proximity to Worcester Street.

### **Review of the Transportation Information**

In general, the traffic report and supporting plans have been prepared in a professional manner that is generally consistent with standard engineering practices. As part of this effort, VHB has conducted a detailed, point-by-point evaluation of the study and its supporting documentation. It is our professional opinion that the information contained in the report is both technically accurate and portrays the likely impacts of the project on the surrounding roadway system.

VHB has identified additional informational needs that focus on the existing conditions, the proposed access to the Site, and its commitments. The expectation is that these requests will provide the opportunity to clarify inconsistencies, provide additional insight, and/or address technical issues raised during the course of this review. The applicant should be prepared to address, discuss, and/or respond to these topics as they all have to do with either public safety and/or site design considerations.

### **Detailed Discussion of Findings on the Traffic Study**

The following comments are provided to the Board for their consideration as they relate to the Applicants Traffic Study. This evaluation follows the headings of each of the chapters in the Study for clarity.

VHB offers technical comments after each section and, if additional information is needed or requested, the comment may also include **bold text** stating why and what information would be helpful to VHB and the Board.

#### **1.0 Introduction**

As noted in the Traffic Study, the currently vacant site will be developed to include 40 residential apartment units and will provide 60 parking spaces, 33 of which will be located in a garage under the apartment building and 27 will be located in the open-air surface parking spaces. This results in a parking ratio of 1.50 spaces/unit. The Study notes that this ratio is within range of the parking rates provided by the Institute of Transportation Engineers (ITE) for an apartment community in a suburban setting.

***Comment #1 (PARKING): Generally, a parking ratio of 1.5-2.0 is desired for a residential project such as this one. The applicant's ratio of 1.50 spaces/unit is acceptable. VHB notes that the Site Plans show 63 parking spaces (34 garage spaces and 29 surface spaces), resulting in a slightly higher parking ratio of 1.58 spaces/unit. The Applicant should confirm the final number of units and spaces being proposed on the Site.***



The Study identified several intersections that would likely be impacted by the project. VHB has reviewed these locations and the distribution of Project-related traffic on the roadway network. Given the projected volumes expected to be generated by the development and the likely distribution of traffic onto the surrounding roadways, it is VHB's opinion that, for the most part, the study area selected appears to be reasonable and within industry standards. Note that any changes to site access may result in this assumption being revisited.

***Comment #2 (STUDY AREA): The interchange of Worcester Street (Route 9) at Cedar Street is located just ¼ mile to the west of the Site and will be utilized by every vehicle arriving to the Site from the east to turn around on Worcester Street (Route 9). The Applicant should provide a qualitative assessment of the Project's impacts at this specific location as well.***

Lastly, the study methodology notes that the project's traffic study was performed in accordance with MassDOT standards, the Town of Wellesley's PSI standards, and within the standards of the normal Traffic Engineering and Transportation Planning profession. VHB concurs that the study was done in a professional manner and is consistent with these guidelines.

## **2.0 Existing Conditions**

The applicant describes the existing roadway and intersections accurately in its narrative.

The peak hour and daily traffic volumes collected at the study area intersections appear to be done in an acceptable manner. The volume (both pedestrian and vehicular) and speed data provided in the study's appendix is consistent with the traffic networks provided in the report and those generally observed by VHB staff during their site visit.

The Pedestrian and Bicycle Facilities section details the results of the field inventory conducted and the pedestrian and bicycle volumes collected as part of the turning movement counts. The description and supporting Figures are consistent with inventory conducted by VHB staff during their site visit.

***Comment #3 (PEDESTRIAN ACCOMODATIONS): While there appears to have been a crosswalk across the Dearborn Street approach to Worcester Street, the pavements markings delineating the crosswalk have almost entirely faded. As this is a likely pathway for pedestrians to and from the Project site, VHB recommends that these pavement marking be refreshed/re-installed as part of the mitigation for the Project.***

The Public Transportation section discusses the various transit options near the project site and notes that there are no public transportation opportunities in the immediate vicinity of the Site, but both MBTA and MWRTA provide transportation options within the Town of Wellesley. The MBTA's Eliot Station on the D Branch of the Green Line is approximately a 6-minute drive from the site, in the City of Newton. The MWRTA operates Paratransit Services for passengers who meeting ADA requirements and for seniors and the disables through the Wellesley Council on Aging.



The Motor Vehicle Crash Data section provides information on the crash history of the various area locations selected for study. None of the study area intersections experience crash rates higher than the District 6 average.

**Comment #4 (CRASH DATA):** *The study notes that the intersection of Worcester Street at Sunlife Park / Wellesley Gateway is included in MassDOT's Highway Safety Improvement Program as a high crash cluster for 2013-2015. VHB notes that this location is not included in MassDOT's most recent HSIP maps (2014-2016) and that the recent upgrades associated with the Route 128 Add-a-Lane project at this interchange appear to be working well*

### 3.0 Future Conditions

The Study indicates that the 2017 Existing Conditions volumes were projected nine-years to year 2026 (seven-years from the current year).

The 2026 No Build traffic conditions were developed by assigning the background traffic growth a 1% rate per year and considers the transportation impacts of four potential developments near the project:

- Sports Complex located at 900 Worcester Street in Wellesley (130,000 sf sports center with fields, ice rinks, and pool services along with a health club component)
- Wellesley Square, located at 8 Delanson Circle in Wellesley (90-unit residential development)
- Wellesley Park, located at 148 Weston Road in Wellesley (55-unit residential development)
- 16 Stearns Road, a 36-unit residential development
- 680 Worcester Street, a 20-unit residential development
- Cedar Place, located at 2 & 3 Burke Lane in Wellesley (16-unit residential development)
- Wellesley Office Park Phase I, located on William Street in Wellesley (350-unit residential development to replace 76,767 sf of office)
- Wellesley Office Park Re-Occupancy, located on William Street in Wellesley. At the time of the 2017 counts, approximately 73,868 sf of office was vacant within the Wellesley Office Park and has been assumed to be reoccupied by a similar use.

**Comment #5 (BACKGROUND PROJECTS):** *VHB concurs with including the background projects listed above. VHB defers to the Town of Wellesley to confirm that the list above is comprehensive.*

The study goes on to note that there are three roadway projects that will be taking place in the Study Area which might impact roadway capacity/operations.

- Resurfacing and Related Work on Worcester Street, Wellesley, Massachusetts: This project includes the resurfacing of Worcester Street from Dearborn Street to the Natick Town Line. The project will include milling and resurfacing, reconstructing wheelchair ramps, sidewalk repairs, traffic signal upgrades and new pavement markings and roadway deflectors.



- I-95/Route 128 Bridge Reconstruction, Needham-Wellesley, Massachusetts: Reconstruction of bridges along I-95/Route 128 in Needham and Wellesley. In the vicinity of the study area this project includes a new signalized intersection at Worcester Street/I-95 North and Southbound ramps, coordinated with the Worcester Street/Sunlife Park/Wellesley Gateway intersection. This project was still under construction during the 2017 counts but has since been completed.
- Sunlife Park Driveway Improvements, Wellesley, Massachusetts: This project includes the construction of a second right-turn lane on the Sunlife Park driveway approach to Worcester Street. This project was still under construction during the 2017 counts but has since been completed.

The traffic study determined project-related trips using procedures consistent with Institute of Transportation Engineers (ITE) guidelines. Based on ITE trip projections, the project would be expected to generate approximately 216 daily, 14 morning peak hour, and 18 evening peak hour vehicle trips using the ITE's Trip Generation<sup>1</sup>. Table 4 of the Traffic Study highlights this information in tabular form.

Trip Distribution was developed using journey-to-work data and was refined based on existing travel patterns during the commuter peak periods. Figure 5 of the Traffic Study reflects the results of this evaluation.

***Comment #6** VHB concurs with the manner in which all the above data is presented. The information is consistent with the recommended practices of the ITE and the resulting automobile trips all appear to be accurately presented.*

***Comment #7:** Based on the information presented in the study, no thresholds that would trigger the need for project review under the Massachusetts Environmental Policy Act (MEPA) are met from a traffic generation or parking perspective*

***Comment #8 (EXISTING SITE CREDIT):** The study does not mention an existing credit for the existing single-family residence on the site. While it will not impact the findings of the study, the applicant should please clarify if the site was vacant at the time of that the traffic counts were conducted.*

#### 4.0 Intersection Capacity Analysis

Utilizing the observed roadway geometry, the traffic volumes – both existing and projected – and the appropriate traffic control at each location; the Study analyzed the impacts of the Project at each of the study area intersections. The Study utilizes the most appropriate version of the highway capacity software and presents an accurate description of the Level of Service terms.

In reviewing the operational analysis, the following information was presented:

- **Worcester Street at Sunlife Park/Wellesley Gateway (signalized):** Impacts are minimal at this location, with most of the project-related trips added being through movements on Worcester Street.

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<sup>1</sup> *Trip Generation*, 10<sup>th</sup> Edition; Institute of Transportation Engineers; Washington DC; 2017



Several movements operate at LOS E under all future conditions (with or without the addition of Project-related traffic). Overall, the intersection operates at LOS C during all peak periods and conditions.

- **Worcester Street at Dearborn Street (unsignalized):** Impacts are minimal at this location. Under all future conditions (with and without the addition of Project-related traffic), right-turn movements from Dearborn Street operate at LOS C.
- **Worcester Street at East Project Site Driveway (unsignalized):** Under 2024 Build conditions, all movements will operate at LOS C or better with minimal queuing and delays.
- **Worcester Street at West Project Site Driveway (unsignalized):** Under 2024 Build conditions, this location is expected to operate at LOS C or better with minimal queuing and delays.

In addition to level of service result, the Tables 8 and 9 of the report documents the expected (calculated) vehicle queuing at each of the study area intersections. VHB observed typical vehicle delays and queuing and visually confirmed that the existing information contained within the study is accurately representative of the actual conditions in the field.

## 5.0 Sight Distance Evaluation

Table 10 from the Traffic Study presents the sight distance information for the intersections of Worcester Street at the East Project Site Driveway and Worcester Street at the West Project Site Driveway. The text notes that the sight distance exceeds the recommended minimum AASHTO sight distances for a 55mph speed along Worcester Street for the Stopping Sight Distance measurements. The Intersection Sight Distance minimum is met looking to the west from the West Site Driveway. The sight distance is not met looking to the west from the East Site Driveway due to existing vegetation; however, the sight distance would be met if the vegetation were trimmed back. The Proponent has recommended that this vegetation, along the Site frontage, should be trimmed to provide the required sight lines.

**Comment #9 (SIGHT DISTANCE):** *The Study indicates that there is adequate sight distance looking to the west at the West Site Driveway; however, VHB's field observations indicated that there is existing vegetation restricting the view to the west. The applicant should consider trimming back the vegetation, within the right of way, to meet the minimum sight distance requirements.*

**Comment #10 (SIGHT DISTANCE):** *The Applicant will need to submit plans to MassDOT for their review and concurrence as part of their Highway Access Permit procedure and may have additional comments on the driveway design as it's currently presented. The applicant should illustrate sight triangle areas for the Project site driveway on the Site Plans along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*



## 6.0 Conclusions & Recommendations

VHB has reviewed the traffic study's conclusions and generally agree with the six conclusion points raised in the beginning of this section. Moreover, VHB generally concurs that the project in-and-of itself will not likely result in a significant impact (increase) on motorist delays or vehicle queuing along area roadways.

The Study makes a number of recommendations with respect to Project Access and Traffic Demand Management. VHB has reviewed all the Project recommendations and offers the following commentary:

### Project Access

There are eight bulleted recommendations presented in this section of the Traffic Study. VHB agrees with each of the recommendations and notes the following:

- The first bullet notes that "the two-way Project site driveway should will be 24-feet in width and the one-way, entrance only driveway should be a minimum of 20-feet in width with both driveways designed to accommodate the turning and maneuvering requirements of the larges anticipated responding emergency vehicle".

VHB notes that the Site Plans show a 34-foot wide two-way driveway and a 32-foot one-way, exit-only, driveway.

***Comment #11 (Emergency Access): The Applicant should coordinate with the Town of Wellesley Fire Department for suitability in meeting the NFPA (National Fire Protection Agency) standards for residential design. The Applicant should present information from the Fire Department noting that they've reviewed the access needs for the facility and that fire apparatus can effectively handle a response to the facility from a turning radius and building access perspective.***

- The second bullet notes that "vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided and appropriate traffic control signs (i.e., "One-Way" "Do Not Enter" and "No Left Turn") should be installed to indicate the one-way direction of travel along the front of the building".

***Comment #12: VHB notes that the Site Plans provide STOP signs and STOP bars on both driveway approach to Worcester Street. There are "One Way" and "Right Turn Only" signs present at both driveway approaches and a "One-Way" sign along the internal roadway in front of the building. MassDOT will need to review and approve any signage on Wellesley Street/Route 9 as part of the Highway Access Permit process.***

- The third bullet notes that "all signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the Manual of Uniform Traffic Controls (MUTCD)". VHB notes that the site plans do not have a similar note.

***Comment #13 (SIGNAGE): The Applicant should add a similar note to the site plans that all signs and pavements markings within the Site should conform to the MUTCD.***



- The fourth bullet notes that "a sidewalk should be provided to link the proposed building to Worcester Street".

**Comment #14 (SIDEWALK):** *It appears that internal sidewalks and a crosswalk provide a connection to a proposed sidewalk along the Site Frontage, however, VHB notes that the sidewalk does not extend beyond the limits of the Project frontage. In order to make this project less focused on the automobile and provide a connection beyond just the frontage of the site, the Applicant should extend the proposed sidewalk approximately 300 feet so that it connects with the existing Worcester Street sidewalk, located to the east.*

- The fifth bullet notes that "a school bus waiting area should be provided at an appropriate location...".

**Comment #15 (PICK UP/DROP OFF LOCATIONS):** *VHB notes that there is a proposed bus shelter on the Site Plans. The Applicant should provide an update to the Board on the discussions with the Town's School Department on the placement of this school bus shelter.*

- The sixth bullet notes that signs and landscaping installed within the sight distance triangles will be designed and maintained to not restrict sight lines and the seventh bullet notes that snow windrows within the sight triangles will be promptly removed.

**Comment #16 (SIGHT DISTANCE):** *See comment #10.*

- The seventh bullet notes that "snow windrows within the sight triangle areas of the Project site driveways shall be promptly removed where such accumulations would impede sight lines".
- The final bullet notes the consideration of electric vehicle charging stations within the parking facility.

**Comment #17 (ELECTRIC VEHICLE CHARGING STATION):** *The Applicant should provide an update to the Board on the number and location of any electric vehicle charging stations within the garage and if any additional spaces can be designated as EV Charging-ready*

## Transportation Demand Management

The Study outlines a number of Transportation Demand Management (TDM) measures that should be implemented, including the following:

- The owner or property manager should reach out to MassRIDES to obtain information on encouraging healthy transportation options for residents of the Project;
- Post information regarding public transportation services in a central location and made available to interested residents;
- Distribute a "welcome packet" of information to new residents outlining the available transportation services in the area;



- Make employees aware of the Emergency Ride Home program;
- Provide pedestrian accommodations within the Site and a sidewalk connection to Worcester Street;
- Provide a secure mail-drop area in a central location; and
- Provide secure bicycle parking consisting of exterior convenient bicycle parking and weather protected bicycle parking in a secure area of the building.

**Comment #18 (TDM RECOMMENDATIONS):** *Should the Board elect to consider applying conditions to the Project's approval, the recommendations outlined within the TDM section (and elsewhere) should be memorialized.*

**VHB notes that in July 2019, MassRides ceased its operation in Massachusetts. The Applicant should seek to identify a similar service either offered by the Commonwealth or through a private TMO/TMA for the area.**

VHB is in general agreement with the commitments that were outlined in the Traffic Study. In reviewing the recommendations and comparing them with the site plans, VHB would suggest the following actions also be considered:

- **Comment #19 (BICYCLE PARKING ACCESS):** *The TDM section of the study indicates that secure bicycle parking will be provided within the building; however, the architectural plans do not indicate where this parking area will be located. The Applicant should identify where bicyclists can find secure, weather protected bicycle parking spaces on the site plan.*

## COMMENTS ON THE SITE PLAN

In reviewing the site plan from a transportation and circulation perspective, VHB offers the following comments (note: specific issues relating to site/civil engineering aspect of the plan review are not directly covered as part of this effort):

- **Comment #20:** *The Applicant has provided Vehicle Tracking demonstrating that a passenger vehicle and compact vehicle can access various spaces within the garage. Additional detail should be provided to demonstrate how a driver would be able to access and egress from these spaces, especially the compact spaces at the end of the underground parking line.*
- **Comment #21:** *The Applicant should clarify how delivery vehicles and moving trucks are expected to access the site and provide a Vehicle Tracking© (or a similar analysis technique) for delivery vehicles which demonstrates how loading truck movements through the site can be managed without impacting parking and/or other static objects within the site. Turning radius for delivery trucks should be noted and the Applicant should present a detailed move-in management plan so that multiple trucks don't arrive at the same time for the move-in areas (if limited by space).*



- **Comment #22:** *The Applicant should provide a Vehicle Tracking© (or similar) turning radius assessment demonstrating how refuse/garbage trucks will access the loading area.*
- **Comment #23:** *The Applicant has provided Vehicle Tracking demonstrating that Wellesley Fire "Engine" and "Tower" Trucks are able to access and maneuver the driveway and is able to back out of the garage entrance. The Applicant should coordinate with the Town of Wellesley Fire Department for suitability in meeting the NFPA (National Fire Protection Agency) standards for residential design. The Applicant should present information from the Fire Department noting that they've reviewed the access needs for the facility and that fire apparatus can effectively handle a response to the facility from a turning radius and building access perspective.*
- **Comment #24:** *A narrative as to how the Applicant intends to stage the construction of the facility on Worcester Street with no on-street parking should be considered. Given the limited available roadways surrounding the site, staging of equipment and employees will be challenging. Where will the contractors park and where/how will deliveries be made as the site without disrupting the overall flow of traffic along Worcester Street would be helpful to understand.*

Please call if you have any questions or require additional information on any of the requests or comments noted above. Once responses to the initial comments noted above have been received and reviewed, VHB will respond to this information as appropriate. VHB will also suggest potential conditions that the Board may want to consider in their review and deliberations as they relate to transportation elements of the proposed project.

I will be available at the next Zoning Board of Appeals hearing on September 10, 2019 to discuss in greater detail these findings if needed. The applicant should be prepared to address as many of these comments as reasonably possible at the upcoming Zoning Board of Appeals hearing and incorporate them into revised traffic and site plan based on the outcome of the meeting.

Sincerely,

Vanasse Hangen Brustlin, Inc.

A handwritten signature in blue ink, appearing to read "Robert L. Nagi".

Robert L Nagi, PE

Principal