



October 31, 2018

Ref: 14400.00

Mr. Richard Seegal, Chair
Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

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

Dear Mr. Seegal 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 680 Worcester Street (Route 9) in Wellesley, Massachusetts. The project known as the "Proposal Residential Development" as proposed is a development of 20 apartment units being serviced by 35 parking spaces on a site located off Worcester Road/Route 9 (the "Project"). As part of this review effort, VHB reviewed the following documents:

Traffic Impact Assessment "Proposed Residential Development, 680 Worcester Street (Route 9), Wellesley Massachusetts; dated June 2018 and corrected September 2018 and prepared by Vanasse & Associates, Inc.

"680 Worcester Road, Wellesley, MA Architectural Plan Set"; dated June 29, 2018 prepared by Grazado Velleco Architects, Inc.

"#680 Worcester Street, Chapter 40B Comprehensive Permit, Wellesley MA Engineering Plan Set"; dated May 9, 2016 and prepared by Hayes Engineering, Inc.

680 Worcester Street Correction (and associated study); dated September 26, 2018 and prepared by Vanasse & Associates, Inc.

VHB also visited the project site on October 24, 2018 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.

Engineers | Scientists | Planners | Designers

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770
F 617.924.2286



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 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, site circulation and access, 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 the Board.

1.0 Introduction

As noted in the Traffic Study, the site will be redeveloped to include 20 residential apartment units and will provide 35 parking spaces, all of which will be located in a garage under the apartment building. This results in a parking ratio of 1.75 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 1.75 spaces/unit is within normal range of spaces for a development of this type.

The Study identified some 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 intersection of Worcester Street (Route 9) at Kingsbury Street/ Pedestrian Crossing is part of the same signal system as the two U-turn locations on Worcester Street that are included within the study area. The Applicant should consider the Project's impacts at this specific location as well.

Comment #2A (STUDY AREA): Based on a review of MassDOT safety data, this intersection is located within a 2013-2015 HSIP crash cluster along Route 9. VHB recommends that this location be evaluated to confirm that the proposed project does not negatively impact pedestrian & safety operations at this location.

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 TMC. The description and supporting Figures are consistent with inventory conducted by VHB staff during their site visit.

The Public Transportation section discusses the various transit options near the project site. 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 Wellesley Square Station, on the



Framingham/Worcester Commuter Rail Line, is approximately a 5-minute drive from the site. The MWRTA's bus Route #8 has stops within a 15-minute walking distance from the site.

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 #3 (TRANSIT): *The MWRTA Route 8 has been modified and no longer stops at Linden Square. The closest this route comes to this site is along Route 16.*

Comment #4 (STUDY AREA): *As explained in Comment #2, the intersection of Worcester Street at Kingsbury Street/ Pedestrian Crossing is not included in the study area but is located between two of the study area intersections. This location is located within a 2013-2015 HSIP crash cluster, and we recommend including it within the study to ensure that the proposed project does not negatively impact pedestrian operations at this location.*

3.0 Future Conditions

The Study indicates that the 2017 Existing Conditions volumes were projected seven-years to year 2025.

Comment #5 (FUTURE TRAFFIC GROWTH): *The study indicates that 2017 existing volumes were grown seven-years to year 2025; however, seven years of growth would extend only to 2024.*

The 2025 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 Road 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 24-unit residential development

Based on feedback from the Town of Wellesley, there are no other projects in the vicinity of the Site that have open applications with the Town.

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

- Route 9 (Worcester Street) at Kingsbury Street Intersection Improvements: This intersection was recently updated with the installation of a new traffic signal and pedestrian equipment. Traffic signal controls were installed at the proximate east and westbound U-turns. The U-turns are included within the study area.

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 108 daily, 7 morning peak hour, and 9 evening peak hour vehicle trips using the ITE's Trip Generation¹. Table 5 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:** The study notes that access will be provided by way of a new driveway located approximately 400-feet to the west of Francis Road and the site plans indicate that the existing site driveway serving the site will be closed.*

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 Oak Street/ Westgate Road (unsignalized):** Under 2025 Build conditions (with the addition of Project-related traffic), the Worcester Street westbound U-turn/left-turn movement operates at LOS F during both peak hours. During the evening peak hour this movement is expected to experience an increase in delay of approximately 13 seconds per vehicle and an increase in queue of one vehicle. All other movements are expected to experience minor impacts due to the proposed project, with maximum increases in delay of one second per vehicle.
- **Worcester Street at Francis Road (unsignalized):** Impacts are minimal at this location, with 9 or less project-related trips being added during either of the commuter peak hours. Under 2025 Build conditions (with the addition of Project-related traffic), left-turn movements from Francis Road operate at LOS D with only minor increases in delays (less than two seconds) over the 2025 No-Build conditions (without the addition of Project-related traffic).
- **Worcester Street at Worcester Street Eastbound U-turn (signalized under future conditions):** Under 2025 Build conditions (with the addition of Project-related traffic), all movements will

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



operate at LOS D or better with minor decreases in delays when compared to the 2025 No-Build conditions (without the addition of Project-related traffic).

- **Worcester Street at Worcester Street Westbound U-turn (signalized under future conditions):** Under 2025 Build conditions (with the addition of Project-related traffic), all movements are expected to operate at LOS D or better with minor decreases in delays when compared to the 2025 No-Build conditions (without the addition of Project-related traffic).
- **Worcester Street at Project Site Driveway (unsignalized):** Under 2025 Build conditions, this location is expected to operate at LOS D with minimal queuing and moderate delays.

In addition to level of service result, the Tables 9 and 10 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 11 from the Traffic Study presents the sight distance information for the intersection of Worcester Street at the Project Site Driveway. The text notes that the sight distance exceeds the recommended minimum AASHTO sight distances for a 60mph speed along Worcester Street for the Stopping Sight Distance measurements. The Intersection Sight Distance minimum is met looking to the west from the Project Site Driveway. VHB confirmed these distances are accurate and agrees with the recommendation to trim back existing vegetation.

Comment #9 (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. However, VHB is in general agreement with the methodology that was used to develop the analysis and the findings. 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.



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 Project site driveway will be 24-feet wide". *VHB notes that the site plans show a 24-foot wide driveway.*
- *The second bullet notes that "a STOP-sign and marked STOP-line have been provided for vehicles exiting the Project site to Worcester Street" and that "a supplemental sign indicating 'BACKING ONTO RTE 9 PROHIBITED' will be installed". VHB notes that the engineering plans indicate the installation of both signs, but do not show the associated STOP bar.*
- 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 #10 (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 connection has been provided to link the proposed building to the sidewalk infrastructure along Worcester Street." VHB notes that the plans show a proposed sidewalk connecting the front door to the existing sidewalk along Worcester Street.*
- The fifth bullet notes that "a school bus waiting area will be provided at an appropriate location defined in consult with the Town...".

Comment #11 (PICK UP/DROP OFF LOCATIONS): The Applicant should provide an update to the Board on the discussions with the Town's School Department on the placement of a school bus and other transit services such as the RIDE, Council on Aging, and paratransit operators.

- *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. The seventh bullet notes that "snow windrows within sight distance triangle areas will be promptly removed."*

Comment #12 (SIGHT DISTANCE): Per comment #9, 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."

- *The last bullet notes that "consideration will be given to installing electric vehicle charging stations".*



Comment #13 (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.

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 a sidewalk connection to the existing sidewalk infrastructure along 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 #14 (TDM RECOMMENDATIONS): A number of the TDM recommendations require the owner to become a member of MassRIDES. We recommend including the requirement to become a member as part of the TDM plan.

Comment #15 (TDM RECOMMENDATIONS): There are a number of recommendations in the TDM section (and throughout the Study in general). 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 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 #16 (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.***



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 #17:** The plan set notes the use of tandem parking spaces on the southwest portion of the site. A narrative of how these spaces would be used and who they would be assigned to would be helpful to better understand their viability as parking spaces for use in the overall development program.
- **Comment #18:** The Engineering Plan Set indicates that two of the tandem parking spaces will be used for overflow snow storage during large storms. During the winter months, this brings the parking ratio down to 1.65, with no options for on-street parking near the Site. Given the narrative provided in response to Comment #17, the Applicant should provide for additional options for parking at the site beyond what has been shown on the site plans.
- **Comment #19:** Additional detail should be provided as it relates to the underground parking structure, providing a turning radius graphic for vehicles maneuvering through the garage. Spaces at the end of the underground parking line should demonstrate how a driver would be able to access and egress from these spaces.
- **Comment #20:** The plans indicate that the maximum sized vehicle accessing the site is a WB-30. While this sized vehicle can accommodate a wide range of standard delivery and small move in vehicles, the Applicant should demonstrate how a slightly larger WB-40 vehicle (which is a more common vehicle in the moving industry) could be accommodated on the site.
- **Comment #21:** The Vehicle Tracking© provided for an SU-30 indicates that a vehicle of this size would utilize the entire front entry way to maneuver into and out of the site. It is unclear from this plan where the final loading/unloading area will be for this sized vehicle so that it doesn't interfere with safe vehicle and pedestrian operations internal to the site. The Applicant should identify where on the site plan loading vehicles will park and where delivery vehicles would be directed to wait as they make visits to the site. Similarly, the Applicant should confirm/demonstrate that the parking garage provides enough clear space for a truck of this size to travel within and under as it appears from the plan that it will need to utilize some areas underneath the building for maneuvering purposes.
- **Comment #22:** The Applicant should present a detailed move-in management plan so that multiple trucks don't arrive at the same time.
- **Comment #23:** The plans show an Easement dedicated to the benefit of the Town of Wellesley on the southeastern portion of the site. The Applicant should demonstrate their ability/right to park (using vehicle stackers) on top of this easement and that the long-term need of the easement will not be impacted by the proposed development.



- **Comment #24:** The Applicant should provide information on how and where refuse/garbage pickup for the Apartment units will take place. A Vehicle Tracking© (or similar) turning radius assessment for refuse/garbage trucks should be identified on the plan.
- **Comment #25:** The Applicant has provided Vehicle Tracking demonstrating that a Wellesley ambulance is able to access and maneuver into the site and turn around as needed. No details are provided for other emergency response vehicles. 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 #26:** 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 November 1, 2018 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.

Robert L Nagi, PE

Principal

cc: Michael Zehner, Town of Wellesley