



February 8, 2018

Ref: 13810.00

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

Re: Transportation Peer Review Commentary
Wellesley Square Residences
8 Delanson Circle
Wellesley, Massachusetts

DRAFT FOR TOWN REVIEW ONLY 2/1/2018

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 (the “Study”)and associated site plans for the proposed residential development to be located at 8 Delanson Circle in Wellesley, Massachusetts. The project known as the “Wellesley Square Residences” as proposed is a development of 90 apartment units being serviced by 100 parking spaces on a site located off of Linden Street and Hollis Street (the “Project”). As part of this review effort, VHB reviewed the following documents:

Traffic Impact Assessment “Wellesley Crossing, Delanson Circle, Wellesley Massachusetts;
dated November 2017 and prepared by Vanasse & Associates, Inc.

“Wellesley Square Residences, 8 Delanson Circle, Wellesley, MA 02482 ZBA Submission”;
dated November 17, 2017 prepared by EMBARC Architects, Mckenzie Engineering Group, and Verant Landscape Architecture.

VHB also visited the Project site on January 22, 2018 and again on Thursday February 8, 2018 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

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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 purposes (utilities, drainage and grading, environmental, etc.). The focus of this review is exclusively on the engineering and technical merits of the Study as well as the driveway and roadway plans submitted in support of the Comprehensive Permit application.

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. In general, 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 operational impacts of the Project on the surrounding roadway network, the proposed parking for the Development, and the Project 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 its consideration as they relate to the Applicant's 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 Study, the five existing single-family homes that currently exist on the site will be replaced by a development that will include 90 for-rent apartment units (according to the site plans, 18 units will be designated as affordable – 20%) and will provide 100 parking spaces, of which 46 spaces will be accessed via the use of mechanical stackers. This results in a parking ratio of 1.11 spaces/unit. The Study notes that this ratio complies with Section XXI (Off-Street Parking) of the Town of Wellesley's Zoning By-Law. Access to the 100-underground parking space garage will be provided from Hollis Street near Linden Street.

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 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.

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.

Comment #1 (PARKING): *The site is located predominantly in the General Residence zoning district, with a small portion in the northwest corner of the site (off of Delanson Circle) being in Single Residence 10 (SR10) district. Delanson Circle is noted as being a private way on the site plans.*

The Town's Zoning By-Law Section XXI (Off-Street Parking) does not specifically state parking ratios for Apartment uses in these two districts. In fact, Apartment uses are not allowed in these districts. Therefore, the Applicant's claim that the Project complies with the Town's zoning By-Laws is inaccurate.

For apartment uses, parking is defined in the following districts in the By Laws as follows:

- *Business A or Industrial A District : 1 space/unit for Apartment Houses.*
- *Limited Apartment District : 1.5 spaces/dwelling unit of two bedrooms or less and two parking spaces for each dwelling unit providing three bedrooms or more;*
- *Linden Street Corridor Overlay District : 2.5 spaces per one, two, or three-bedroom unit.*

While the 1.1 space/unit ratio meets the zoning in Business A and Industrial A, it does not meet the By-Law for the other apartment-based codes.

It has been VHBs experience that parking ratios of about 1.4-1.5 spaces per unit are the minimum for a suburban residential apartment complex such as this one. Parking must account for residents, visitors, and deliveries. If it is the Applicant's intent to use a rate as low as 1.11 spaces/unit, it should provide information on other locations where a parking ratio this low has been used successfully in a suburban environment.

Similarly, VHB is concerned about how the stacker units will function, both in a layout perspective as well as providing real access to the 1.11 space/unit ratio being proposed. The Applicant should provide a detailed description of these spaces and how they will be utilized.

Comment #2 (DELANSON CIRCLE RIGHT OF WAY): *Delanson Circle is noted as a Private Way on the plans. **The Applicant should confirm that they have legal title to abandon this roadway.***



2.0 Existing Conditions

For the most part, the Applicant describes the existing roadway and intersections accurately in its narrative. The notable exception is that Hollis Street is a private way (not under the Town's Jurisdiction) with a variable width roadway ranging from 13-18 feet.

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 appendix is consistent with the traffic networks provided in the report and those generally observed by VHB staff during their site visit. Of note, some of the traffic data was collected on Wednesday June 14, 2017. Wednesdays are half-days for the Town of Wellesley school system, so the pedestrian and traffic volume information may not be fully representative of these modes of transportation during the peak periods.

The Public Transportation section discusses the various transit options near the Project site. This includes bus routes for both the MBTA Commuter Rail via the Worcester/Framingham line as well as Route #8 of the MWRTA. The area appears to be well served by transit options (which is discussed later in the trip generation section).

The Motor Vehicle Crash Data section provides information on the crash history of the various area locations selected for Study. Only one intersection experiences a crash rate higher than the statewide average (Weston Road at Linden Street). (note: the Applicant makes a commitment to fund and facilitate a Roadside Safety Audit at this location).

Comment #3 (TRAFFIC VOLUMES): *Because the proposed residential development is likely to generate traffic during weekends at a similar rate as on weekdays; coupled with the fact that the area surrounding the development is heavily influenced by the retail developments along Linden Street, **the Applicant should provide some basic information demonstrating that the weekend conditions experience less traffic (or is comparable) to the weekday conditions.***

The Applicant should also conduct an evening traffic count at the intersection of Hollis Street and Linden Street on a Tuesday or Thursday to confirm that the Wednesday half-day school condition did not influence the traffic conditions near the Project Site.

3.0 Future Conditions

The Study uses a seven-year traffic projection horizon, which is typical for a development of this type and is consistent with MassDOT guidelines.

The 2024 No Build traffic conditions were developed by assigning the background traffic growth a 1% rate per year (essentially 7% over the course of the seven-year period) and considers the transportation impacts of two 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)
- Tolles-Parson's Senior Center, located at 494-496 Washington Street in Wellesley (13,275 sf senior center)

In addition to these projects, the Town of Wellesley's Planning Department noted that there is a 55-unit Chapter 40B Apartment development to be located at 148 Weston Road in Wellesley.

The Study notes that there are no specific roadway projects that will be taking place in the Study Area over the course of the next seven years which might impact roadway capacity/operations.

The traffic Study determined Project-related trips using procedures consistent with Institute of Transportation Engineers (ITE) guidelines. The Study also considers the impact of the various transit services and a robust ped/bike environment in the immediate vicinity of the Project site. In summary, the Project would be expected to generate approximately 490 daily, 32 morning peak hour, and 40 evening peak hour unadjusted vehicle trips using the ITE's Trip Generation¹.

When taking into account transit (15%), bike/ped (10%), and vehicle occupancy (1.13 passengers/automobile) adjustments, the site is expected to generate 368 automobile daily trips, 24 morning automobile trips, and 30 evening peak hour automobile trips. Table 5 of the Study highlights this information in tabular form.

Trip Distribution was developed using journey-to-work data and was refined based on observations of traffic during the commuter peak hours. Figure 11 of the Study reflects the results of this evaluation.

VHB Comment 4 (BACKGROUND DEVELOPMENT & TRIP GENERATION): *The Applicant should incorporate the impacts of the 55-unit apartment project into the No-Build and Build Condition.*

We are in agreement with the methodology that was used to develop the anticipated traffic generation of the Project and the Trip Distribution patterns. VHB has reviewed the calculations and confirms that the numbers presented are consistent with the ITE-based approach and the adjustments are consistent with those presented from their data sources. VHB notes that the difference in trips between the unadjusted and adjusted volumes is minimal from a trip generation impact. Additionally, trip distribution estimates generally reflect those observed in the field.

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.

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



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

- **Linden Street @ Crest Road (Signalized)** : Under 2024 Build conditions (with the addition of Project-related traffic), traffic operations are expected to remain at LOS D with only minor increased in delays (less than one second) over the 2024 No-Build conditions (without the addition of Project-related traffic).
- **Linden Street @ Everett Street and a Private Driveway (signalized)** : Under 2024 Build conditions (with the addition of Project-related traffic), traffic operations are expected to remain at LOS B with only minor increases in delays (less than one second) over the 2024 No-Build conditions (without the addition of Project-related traffic).
- **Weston Road @ Linden Street (unsignalized)** : This unsignalized T-intersection has traditionally been operationally challenged from a congestion perspective. Impacts are minimal at this location, with less than 10 Project-related trips being added during either of the commuter peak hours. Under 2024 Build conditions (with the addition of Project-related traffic), left-turn movements from Linden Street operate at LOS F with only minor increases in delays (less than one second) over the 2024 No-Build conditions (without the addition of Project-related traffic).
- **Linden Street at Delanson Circle and the MBTA Commuter Lot Parking Drive (unsignalized)** : This unsignalized intersection would have the Delanson Circle approach eliminated through the development of the Project. Operationally, this would improve the LOS for drivers exiting the MBTA lot in the evening as there would be no opposing traffic coming from the opposite side of the roadway. Under 2024 Build conditions (with the addition of Project-related traffic), all movements the MBTA driveway will operate at LOS D or better with minor decreases in delays when compared to the 2024 No-Build conditions (without the addition of Project-related traffic). See note below on vehicle queuing influencing this intersection.
- **Linden Street at Hollis Street and private driveway (unsignalized)** : This unsignalized intersection would have traffic increases along Hollis Street as the Project's driveway will connect to the street approximately 100 feet from its intersection with Linden Street. Under 2024 Build conditions (with the addition of Project-related traffic), there would be a drop in LOS for the Hollis Street approach from B to C in both the morning and evening peak hour when compared to the 2024 No-Build conditions (without the addition of Project-related traffic). See note below on vehicle queuing influencing this intersection.
- **Hollis Street at the Project Site Driveway (unsignalized)** : Under 2024 Build conditions (with the addition of Project-related traffic), there would be a drop in LOS for the Hollis Street approach from B to C in both the morning and evening peak hour when compared to the 2024 No-Build conditions (without the addition of Project-related traffic).

In addition, 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 with the noted exception of traffic queuing that exists along Linden Street (mainly focused around its intersection with Crest Street (signalized)).

In this case, queues of traffic on the westbound approach during the evening peak hour were routinely observed to be in excess of those presented in the Study during VHBs visit to the site (from Table 9, WB left-turn lane queues 8 average and 17 95th-percentile and WB through/right-turn lane 10 average and 19 95th-percentile queue). In this case, it appears once the left-turn lane (~100 feet) is filled, the queue extends and mixes with the through/right-turn queue and appeared to approach 15-20 cars regularly and extend past Hollis Street.

Comment #5 (TRAFFIC OPERATIONS) : *We are in general agreement with the methodology that was used to develop the analysis and the findings. The information contained in the Study represents the likely impacts associated with the Project. As the majority of the Project impacts will be at the intersection of Hollis Street and Linden Street, **the Applicant should present information on observed vehicle queuing on the approach noted (Linden Street westbound at Crest Street) and consider options to minimize the likelihood that queues will spill back and routinely block the Hollis Street intersection during the evening peak hour. The Applicant should also consider how drivers seeking to turn left into Hollis Street or out of the MBTA parking lot will be blocked from doing so and possibly further erode traffic flow along the corridor.***

5.0 Sight Distance Evaluation

Table 11 from the Study presents the sight distance information for the proposed driveway along Hollis Street. The text notes that the sight distance exceeds the recommended minimum AASHTO sight distances for a 30mph speed along Hollis Street (vehicles will likely be traveling at a much slower rate given that the intersection is only 120 feet from its intersection with Linden Street) for both the Intersection and Stopping Sight Distance measurements. VHB confirmed these distances appear accurate and notes that the Linden Street intersection limits this sight line for drivers looking/approaching from that direction.

Comment #6 (SIGHT DISTANCE): *We are 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 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, Off-Site locations, and with respect to Traffic Demand Management as well. VHB has reviewed all the Project recommendations and offers the following commentary:

Project Access

There are 10 bulleted recommendations presented in this section of the Study. VHB agrees with each of the recommendations and notes the following:

- The fifth bullet notes that "consideration should be given to installing a sidewalk along the Project site frontage on Hollis Street extending to Linden Street". *VHB notes that the site plans do show that there is a sidewalk along this section of roadway.*
- The seventh bullet notes that "a school bus waiting area should be provided at an appropriate location...".

Comment #7 (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. Care should be given to identifying locations where a stopped vehicle will not negatively influence traffic flow along either Hollis Street or Linden Street.

- The final bullet notes the consideration of electric vehicle charging stations within the parking facility.

Comment #8 (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.

Off-Site

There are three intersections where recommendations are noted. The Applicant has committed/recommended the following at each of these locations:

- Weston Road at Linden Street – The Applicant will "facilitate the completion of a Road Safety Audit (RSA) in order to identify improvement strategies for this intersection".
- Linden Street at Hollis Street – the Applicant notes that "Independent of the Project... STOP-sign and a marked STOP-line be provided on the Hollis Street approach to Linden Street".



- Linden Street at the MBTA Parking Lot Driveway – the Applicant notes, “Independent of the Project... STOP-sign and a marked STOP-line be provided on the MBTA parking lot approach to Linden Street, and a crosswalk be provided across the driveway and Linden Street with accompanying ADA compliant wheelchair ramps and detectable panels”.

Comment #9 (LINDEN STREET and HOLLIS STREET PEDESTRIAN CROSSING) : *Given that the current demand to cross Linden Street from the Delanson Circle to the MBTA station is minimal, and the Applicant is proposing to construct 90 apartment units that appear to be marketed toward the public transportation resources in the area, **the Applicant should provide clarification as to why the pedestrian crossings over Linden Street should be implemented “independent of the Project” and how they’d access the MBTA Commuter Rail Facility.***

Additionally, Hollis Street is a private way. The Applicant should commit to incorporating these improvements into the system as the Town has no ability to influence and install these options.

Transportation Demand Management

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

- The owner of the property should become a member of MassRIDES;
- 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;
- Link the site to the public pedestrian network surrounding the site;
- 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 #10 (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 #11 (BICYCLE PARKING ACCESS)** : *The architectural plans illustrate secure bicycle parking in the northwestern corner of the parking garage. **The Applicant should identify how bicyclists will access these spaces from the outside and how visitors to the facility will utilize this secured parking area. If visitors/guests cannot access these spaces, then public bike storage should be provided outside the garage area for these users.***
- **Comment #12 (APPLICABILITY OF OFF-SITE IMPROVEMENTS)** : *The traffic Study notes that there are several recommended improvements needed to the surrounding roadway network (as it relates to the placement of STOP-signs, STOP-bars, and pedestrian crossings. The recommendation also notes that these should be provided "Independent of the Project". **As the Applicant has identified a series of potential improvements needed in the area of the Project that appear to be directly impacted by the proposed Project, it should provide justification of how/why these should be implemented "independent of the Project" (see comment #9 above noting that Hollis Street is a private way).***

COMMENTS ON THE SITE PLAN

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

- **Comment #13** : As noted previously in Comment #1, the Applicant should demonstrate how the parking rate of 1.11 spaces per unit is reasonable for this specific suburban location and what, if any, parking management plans would be implemented to assure that the requested number of spaces is sufficient to accommodate Project parking demands. Parking demand should account for resident and visitor parking needs. Parking demand information for comparable project sites that are in similar suburban locations and also provide access to enhanced transit options would be helpful.

The Board should closely review any restrictions for access to the underground parking and the adequacy of the visitor parking supply (if any), knowing that there is potential for overflow parking to occur along neighborhood streets and into nearby commercial parking areas. If no visitor parking is provided on-site, the Applicant should explain where guest parking will take place – taking into account that many of the nearby streets have parking restrictions already in place (Linden Street, Crest Street, and Summit Street) and noting that Hollis Street is only 18 feet in width at its widest point.

- **Comment #14** : Additional detail should be provided as it relates to the underground parking structure and the mechanical operations of the parking equipment to be used. The Applicant should provide a narrative about how access the 46 stacked spaces will be handled in a residential unit as is proposed and describe the process for sharing spaces between the residents and visitors.



- **Comment #15** : The Applicant should also identify how access to the spaces located closest to Linden Street will be accessed and how a vehicle will exit that space using a turning radius graphic.
- **Comment #16** : The Applicant should identify the grade and length of the ramp leading from Hollis Street into the parking garage area. While it appears to be a relatively light downslope, it would be helpful to have this confirmed.
- **Comment #17** : Will the entrance to the garage be gated/mechanical in nature? If so, consideration of noise attenuation should be considered as the Project is in a neighborhood setting. Moreover, details of how lighting and pedestrian sight lines will be maintained along the Hollis Street driveway.
- **Comment #18** : The Applicant should provide information on how and where loading activities for the Project units will take place. An AutoTurn© (or a similar analysis technique) should be provided which demonstrates how loading truck movements through the site can be managed without impacting parking and/or other static objects within the site. This plan should consider that on-street parking (either via Hollis Street or Linden Street) will disrupt traffic flow significantly. 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 #19** : The Applicant should provide information on how and where refuse/garbage pickup for the Project units will take place. An AutoTurn © (or similar) turning radius assessment for refuse/garbage trucks should be identified on the plan.
- **Comment #20** : The Applicant should coordinate with the Town of Wellesley Fire Department for preferred locations and sign requirements for fire lanes within the site and their comfort level with an ability to respond and fight an event at this site. 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 perspective. This should also include an AutoTurn © (or similar) turning radius assessment to indicate that the Town of Wellesley fire apparatus can circulate freely through the site in the event of an emergency. This turning assessment should be provided to the Board and to the appropriate Fire Department staff for review.
- **Comment #21** : A narrative as to how the Applicant intends to stage the construction of the facility in the residential neighborhood with limited on-street parking should be considered. Given the likely volume of fill to be removed from the site prior to beginning the actual construction phase, information on the number of trucks expected to arrive and depart from the site should be provided along with a likely hauling route should be presented. Any weight-limit restrictions along the haul routes should be noted as well.

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 the adjacent street system would be helpful to understand.

- **Comment #22** : the site plans should have a note added that all traffic regulatory signage should conform to the most current version of the Manual of Uniform Traffic Control Devices (MUTCD).

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 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 plan based on the outcome of the meeting.

We trust that the above information is helpful to address the comments raised at the ZBA hearing and to be responsive to the most recent VAI letter. If you have any questions on the attached, please feel free to contact me at your convenience.

Sincerely,

Vanasse Hangen Brustlin, Inc.

Robert L Nagi, PE

Principal

CC: Meghan Jop, Town of Wellesley

Tom Harrington, Miyares and Harrington, LLP