

Ref: 7516

November 10, 2016

Ms. Emily Wentworth  
Senior Planner: Zoning/Special Projects  
Town of Hingham  
210 Central Street  
Hingham, MA 02043

Re: Supplemental Traffic Engineering Peer Review  
Broadstone Bare Cove – 230 Beal Street  
Hingham, Massachusetts

Dear Emily:

Vanasse & Associates, Inc. (VAI) has completed a review of the supplemental materials submitted on behalf of Broadstone Bare Cove Alliance, LLC (the “Applicant”) in support of the proposed Broadstone Bare Cove residential development to be located at 230 Beal Street in Hingham, Massachusetts (hereafter referred to as the “Project”). This information was prepared in response to the comments that were raised in VAI’s November 2, 2016 review letter and consisted of a letter dated November 9, 2016 prepared by VHB on behalf of the Applicant.

Based on our review of the supplemental information submitted in support of the Project, we are satisfied that that Applicant’s engineer has addressed the comments that were raised in our review letter pending receipt of the revised Site Plans, truck turning analyses and narratives concerning tenant moves and refuse/recycling. As more fully detailed herein and discussed at the November 9, 2016 public hearing, the Applicant should develop concept plans for improvements to the Beal Street corridor to include provisions for a pedestrian crossing of Beal Street between the Project site and Lincoln Plaza. In addition, suggested conditions of approval relating to specific items have been provided for consideration by the Zoning Board of Appeals (ZBA) at the appropriate time.

For reference, listed below are the comments that were raised in our November 2, 2016 review letter that required additional information or analysis, followed by a summary of the response submitted by VHB on behalf of the Applicant, with additional comments indicated in **bolded** text for identification.

## **OCTOBER 2016 TRAFFIC IMPACT AND ACCESS STUDY**

### **Existing Conditions**

***Comment:** The Applicant’s engineer did not provide a description of bicycle facilities within the study area. Based on our review, we note that on-road bicycle accommodations along Route 3A within the study area are generally limited; however, the signalized intersections within the study area include bicycle detection. Off-road bicycle accommodations are afforded by way of shared use paths located within Bare Cove Park,*

*the Back River Wildlife Sanctuary, the Stodders Neck recreation area and along the waterfront area in the northern portion of the Hingham Shipyard. In addition, Sgt. William B. Terry Drive and Beal Street provide sufficient width to support on-road bicycle travel in a shared traveled-way condition.<sup>1</sup> These accommodations serve to link the Project site to the Lincoln Plaza, the Hingham Shipyard, the shared-use paths within Bare Cove Park and the Back River Wildlife Sanctuary, and also afford bicycle access to the Massachusetts Bay Transportation Authority (MBTA) West Hingham Commuter Rail Station and MBTA bus and Commuter Boat services that are available in the Hingham Shipyard.*

**Response:** The Applicant's engineer confirmed the description of existing bicycle facilities and accommodations within the study area, and stated that bicycle accommodations have been integrated into the Project. In addition, it was stated that the Applicant would work with the Town to provide shared-use bicycle markings ("sharrows") along Beal Street between the Project site driveway and Fottler Road. **No further response required.**

*To the extent that the ZBA is inclined to act favorably on the Application, it is suggested that the Applicant's commitment to provide bicycle accommodations along Beal Street be included as a condition of the Comprehensive Permit.*

## **Future Conditions**

### **No-Build Conditions**

**Comment:** *We note that the Applicant's engineer did not include a discussion of the planned roadway, intersection and traffic control improvements that were included in the Comprehensive Permit Decision that was issued for the Avalon Hingham Shipyard II project in this section of the report and, instead, listed the improvements in the "Mitigations & Conclusions" section. It is customary to reflect the mitigation commitments that are associated with a specific development proposal by others in the No-Build condition traffic volumes (to the extent that the mitigation alters traffic patterns) and analyses to correspond to the conditions that include the specific development proposal. This allows for the establishment of baseline traffic volumes and operating conditions on the future transportation infrastructure prior to the introduction of Project-related traffic in order to determine if additional or modified improvements are required to accommodate the Project. That being said, we would expect that the extent of the additional improvements along the Route 3A corridor would be limited to the development of an optimal traffic signal timing, phasing and coordination plan.*

**Response:** The Applicant's engineer stated that the planned improvements associated with the Avalon Hingham Shipyard II project were either outside of the study area that was assessed in the October 2016 TIAS or that the inclusion of the improvements would not materially impact the results of the traffic operations analysis that was presented therein. In addition, the Applicant's engineer stated that the Applicant would commit to the

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<sup>1</sup>A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared travelled-way condition.

implementation of a post-occupancy traffic monitoring effort that would include recommendations for the adjustment of the traffic signal timing at three (3) locations as necessary to improve operating conditions. **No further response required.**

*To the extent that the ZBA is inclined to act favorably on the Application, it is suggested that the implementation of a post occupancy traffic monitoring program similar to that included as a part of the Comprehensive Permit Decision issued for the Avalon Hingham Shipyard II project be included as a condition of the Comprehensive Permit for the Project. At a minimum, the monitoring program should include the intersections of Beal Street at the Project site driveway, Beal Street at Sgt. William B. Terry Drive, Lincoln Street (Route 3A) at Sgt. William B. Terry Drive and Shipyard Drive West and Route 3A at HMS Essington Drive and Lincoln Plaza Driveway, and should include an evaluation of the yellow and all-read clearance intervals and pedestrian crossing times (initiation (“walk”) and clearance times).*

### **Traffic Operations Analysis**

**Comment:** *As stated previously, it is surmised that inclusion of the committed transportation infrastructure improvements that are associated with the Avalon Hingham Shipyard II project in the traffic operations analyses would have indicated slightly improved operating conditions at the study area intersections from those that are reflected in the October 2016 TIAS, particularly along the Route 3A corridor.*

**Response:** This comment was acknowledged by the Applicant’s engineer as stated previously. **No further response required.**

### **Sight Distance**

**Comment:** *An evaluation of sight distances at the Project site driveway intersection with Beal Street was not provided by the Applicant’s engineer and is necessary in order to demonstrate that safe access can be provided to the Project site. The measurements should be completed in accordance with American Association of State Highway and Transportation Officials (AASHTO)<sup>2</sup> standards and based on the measured 85<sup>th</sup> percentile vehicle travel speed along Beal Street (approximately 35 mph). In addition, the Applicant’s engineer should add the sight triangles for the Project site driveway to the Site Plans (discussion follows).*

**Response:** The Applicant’s engineer provided sight distance measurements for the Project site driveway intersection with Beal Street which were completed in accordance with the requisite standards and using the measured 85<sup>th</sup> percentile vehicle travel speeds along Beal Street (between 34 and 37 mph). Based on these measurements, the Applicant’s engineer has indicated that lines of sight at the Project site driveway intersection exceed 430 feet where a minimum sight distance of 268 feet is required for safe operation based on the appropriate approach speed along Beal Street. **No further response required.**

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<sup>2</sup>A Policy on Geometric Design of Highway and Streets, 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2011.



## **Recommendations**

**Comment 1:** *Internal to the Project site, roadways and circulating aisles should be a minimum of 22-feet in width for two-way travel and a minimum of 20-feet in width for one-way travel, or as required to accommodate fire truck turning maneuvers pursuant to the requirements of NFPA® 1.<sup>3</sup>*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 2:** *Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 3:** *Where perpendicular parking is proposed, the travel aisle adjacent to the parking shall be a minimum of 23-feet in width in order to accommodate parking maneuvers.*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 4:** *Fire lanes and/or emergency vehicle access roads should be a minimum of 20-feet in width as required pursuant to NFPA® 1.*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 5:** *All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).<sup>4</sup> This note should be added to the Site Plans.*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 6:** *Snow windrows within the sight triangle areas of the Project site driveway shall be promptly removed where such accumulations would exceed 2.5-feet in height.*

**Response:** The final Site Plans will incorporate this comment. **No further response required.**

**Comment 7:** *Weather protected bicycle storage should be provided in secure areas within the parking garage of each building.*

**Response:** The final Site Plans will incorporate this comment and will note the location and quantity of bicycle parking for each building. **No further response required.**

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<sup>3</sup>National Fire Protection Association (NFPA)® 1, Fire Code, Seventh Edition; NFPA; Quincy, Massachusetts; 2015; as amended per 527 CMR.

<sup>4</sup>Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, DC; 2009.

**Comment 8:** *Beal Street/Fottler Road/Tuckers Lane – The Applicant should commit to evaluating alternative improvement plans for the intersection. It is envisioned that this evaluation would include an assessment at a conceptual level of reconfiguring the intersection as a modern roundabout or the implementation of other traffic control measures that are appropriate for the context of the intersection. The results of this evaluation would be summarized in a technical memorandum that would be provided to the Town and include conceptual plans illustrating the alternatives that were evaluated, the resulting traffic operations and the associated cost (preliminary) to implement the improvement measure.*

**Response:** The Applicant has agreed to provide an assessment of improvement alternatives for the Beal Street/Fottler Road/Tuckers Lane intersection as outlined above. **No further response required.**

***To the extent that the ZBA is inclined to act favorably on the Application, it is suggested that the completion of the intersection improvement assessment be included as a condition of the Comprehensive Permit.***

**Comment 9:** *Route 3A/Beal Street – The Applicant should evaluate alternatives to reduce the width of the right-turn slip-ramp from Route 3A eastbound to Beal Street in order to reduce the speed of vehicles transitioning from Route 3A to Beal Street. Alternatively, this evaluation could include the introduction of a raised median along Beal Street between Route 3A and Sgt. William B. Terry Drive that would be similar to the landscaped median that has been constructed south of Sgt. William B. Terry Drive.*

**Response:** The Applicant's engineer indicated that they will evaluate the transition from Route 3A to Beal Street, the installation of a raised median and other appropriate treatments that are designed to reduce vehicle travel speeds along Beal Street.

***Based on comments that were received at the November 9, 2016 public hearing, to the extent that the installation of a raised median is advanced along Beal Street, the median should be designed and located so as not to preclude left-turn movements entering or exiting Lincoln Plaza. In addition and as discussed further herein, the Applicant should investigate the use of the median as a means to facilitate a pedestrian crossing of Beal Street at the Project site driveway so as to afford a connection between the Project and Lincoln Plaza. Advancement of concept plans illustrating potential improvements along the Beal Street corridor should be developed by the Applicant's engineer and presented to the ZBA.***

**Comment 10:** *TDM Program – consider adding the following:*

- *Residents will be encouraged to participate in MassRIDES' NuRide program, which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work.*
- *Residents will be made aware of the Emergency Ride Home (ERH) program available through MassRIDES, which reimburses employees of a participating MassRIDES employer partner worksite that is registered for ERH and that carpool, take transit, bicycle, walk or vanpool to work.*

- *A mail drop should be provided at a central location.*

**Response:** The Applicant has agreed to incorporate the additional measures into the TDM program for the Project. **No further response required.**

## **SITE PLANS**

**Comment 1:** *The Applicant's engineer provided a truck turning analysis for the Town of Hingham Fire Department design vehicle (tower truck). The turning analysis demonstrated that the subject vehicle can access and circulate within the Project site in an unimpeded manner; however, we note that the fire truck would need to back-up to exit the drive aisle along the east side of Building 1. A review of this maneuver indicates that the distance exceeds 150-feet and would require that an approved turnaround area be provided in accordance with NFPA® 1. This area should be added to the Site Plans and a revised turning analysis provided.*

**Response:** The Applicant's engineer will review the back-up maneuver with the Fire Department and will revise the Site Plans as necessary. **No further response required pending receipt of the revised Site Plans.**

**Comment 2:** *The Applicant's engineer should provide a turning analysis for an SU-30/40 (small delivery/moving vehicle and trash/recycling vehicle) that demonstrates that the subject vehicle can access and stage in the loading areas without blocking internal circulation. In addition, the analysis should also demonstrate the location and maneuvering required to serve the trash/recycling area.*

**Response:** The requested truck turning analysis will be provided. **No further response required pending receipt of the truck turning analysis.**

**Comment 3:** *It is not clear from the Site Plans if a crosswalk is proposed for crossing Beal Street at the Project site driveway; a wheelchair ramp is shown on the southeast corner. If a crossing is to be provided, the Applicant's engineer should verify that the necessary lines of sight are provided and the design should include curblin extensions (bump-outs) or a raised median (discussion follows), ADA compliant wheelchair ramps on both sides of the crossing and pedestrian crossing warning signs at and in advance of the crossing.*

**Response:** The Applicant's engineer indicated that a crossing of Beal Street is not proposed at the Project site driveway.

*As discussed previously, the Applicant's engineer should evaluate the introduction of a crossing of Beal Street proximate to the Project site driveway that would provide a more direct connection to Lincoln Plaza for residents of the Project. This crossing would be facilitated by the introduction of a raised median along Beal Street between the Project site and Sgt. William B. Terry Drive, a measure that would also reduce or eliminate U-turns along this segment of Beal Street that are associated with the on-street parking for Lynch Field. Advancement of concept plans illustrating the design*

*of potential pedestrian connections should be developed by the Applicant's engineer and presented to the ZBA.*

**Comment 4:** *Consideration should be given to providing a sidewalk along the south side of Beal Street between the Project site driveway and the driveway to the Back River Wildlife Sanctuary.*

**Response:** The Applicant's engineer indicated that a connection to the Wildlife Sanctuary will be provided from within the Project site. **No further response required.**

**Comment 5:** *The corner radius for vehicles exiting the Project site should be redesigned as a compound curve and the raised channelizing island extended parallel to and off-set from the edge of the travelled-way on Beal Street in order to reinforce the left-turn restriction while continuing to accommodate fire truck egress. Further, a raised median should be installed along Beal Street extending from the Project site driveway southerly to Sgt. William B. Terry Drive in order to eliminate the potential for U-turn maneuvers along this segment of Beal Street and to reduce travel speeds approaching the Project site driveway. The raised median should be designed and constructed so as to be consistent with the raised median that exists to the south of Sgt. William B. Terry Drive (width and plantings).*

**Response:** The Applicant's engineer indicated that the Project site driveway will be redesigned as requested and that the Applicant will continue to work with the Town to determine if the installation of a raised median along Beal Street is feasible and reasonable.

*As stated previously, the Applicant's engineer should advance the development of concept plans illustrating the design of potential improvements along the Beal Street corridor for presentation to the ZBA. In addition, the Site Plans should be revised to incorporate the revisions to the design of the Project site driveway.*

**Comment 6:** *A "No Left-Turn" sign (graphic symbol) should be installed on Beal Street facing motorists exiting the Project site.*

**Response:** The Applicant has agreed to add the requested sign to the design of the Project site driveway intersection with Beal Street. **No further response required pending receipt of the revised Site Plans.**

**Comment 7:** *A school bus waiting area should be provided within the Project site or at an appropriate location defined in consultation with the Town of Hingham School Department.*

**Response:** The Applicant's engineer indicated that the Applicant is working with the Town of Hingham School Department to identify the location of the school bus waiting area for the Project.

*Based on the November 8, 2016 correspondence received from the Superintendent of Schools of the Town of Hingham, the School Department has requested that the bus stop be provided at the main entrance to the Project and that accommodations be*

*provided for the bus to turn around. These design features should be incorporated into the design of the Project site driveway and reflected on the revised Site Plans.*

**Comment 8:** *The circular drive along the front of Building 2 should be redesigned to increase the width of the travelled-way to 24-feet or the parking should be changed to angle parking to correspond to the one-way direction of travel in order to provide sufficient maneuvering area for vehicles to access the adjacent parking spaces.*

**Response:** The Applicant's engineer indicated that the Site Plans will be revised accordingly. **No further response required pending receipt of the revised Site Plans.**

**Comment 9:** *The sight triangle areas for the Project site driveway intersection with Beal Street should be added to the Site Plans along with a note to indicate: "Signs, landscaping and other features located within the sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows located within the sight triangle areas that exceed 2.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*

**Response:** The Applicant's engineer indicated that the site triangles and the requested note will be added to the Site Plans. **No further response required pending receipt of the revised Site Plans.**

**Comment 10:** *A tenant move in/out management plan (narrative) should be provided and reflected in the truck turning analysis for the Project.*

**Response:** The Applicant's engineer indicated that the requested narrative will be provided and that the pending truck turning analysis will be reflective of the narrative. **No further response required pending receipt of the requested information.**

**Comment 11:** *A narrative should be provided describing how trash and recycling will be collected and then picked-up by the contracted hauler.*

**Response:** The Applicant's engineer indicated that the requested narrative will be provided. **No further response required pending receipt of the requested information.**

**Comment 12:** *The Applicant should consider incorporating electric vehicle charging stations into the Project.*

**Response:** The Applicant's engineer indicated that electric vehicle charging stations will be incorporated into the Project. **No further response required.**

## **PARKING**

**Comment:** *The Applicant's engineer should provide parking demand observations from residential apartment communities in a similar setting with comparable access to public transportation services in order to support the requested waiver from the Zoning By-Law. We note that the parking ratio that is proposed is within the range of values documented by the Institute of Transportation Engineers (ITE)<sup>5</sup> for an apartment community in a suburban setting.*

**Response:** The Applicant has submitted revised Site Plans for the Project that reflect the development of 220 residential units with 338 parking spaces, or a parking ratio of 1.54 spaces per unit. In support of this parking ratio, the Applicant's engineer provided parking demand data from nine (9) residential apartment communities located in the Boston Metropolitan Area, seven (7) of which had comparable public transportation access. A review of the parking demand data for the comparable sites indicated that the peak parking demand ratios ranged from 1.27 to 1.43 spaces per unit. Accordingly and with consideration of the ITE parking demand data cited in our original comment, we are in agreement that the proposed parking ratio (1.54 spaces per unit) should be sufficient to accommodate the projected parking demands of the Project. **No further response required.**

## **SUMMARY**

VAI has completed a review of the supplemental materials submitted on behalf of Broadstone Bare Cove Alliance, LLC in support of the proposed Broadstone Bare Cove residential development to be located at 230 Beal Street in Hingham, Massachusetts. This information was prepared in response to the comments that were raised in VAI's November 2, 2016 review letter and consisted of a letter dated November 9, 2016 prepared by VHB on behalf of the Applicant.

Based on our review of the supplemental information submitted in support of the Project, we are satisfied that that Applicant's engineer has addressed the comments that were raised in our review letter pending receipt of the revised Site Plans, truck turning analyses and narratives concerning tenant moves and refuse/recycling. As more fully detailed herein and discussed at the November 9, 2016 public hearing, the Applicant should develop concept plans for improvements to the Beal Street corridor to include provisions for a pedestrian crossing of Beal Street between the Project site and Lincoln Plaza. In addition, suggested conditions of approval relating to specific items have been provided for consideration by the ZBA at the appropriate time. Written responses to our comments should be provided so that we may continue our review of the Project on behalf of the Town.

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<sup>5</sup>*Parking Generation*, 4<sup>th</sup> Edition; Institute of Transportation Engineers; Washington, D.C.; 2010. Observed parking demand ratios for an apartment community were found to range from 0.59 to 1.94 spaces per dwelling unit, with an average parking demand of 1.23 spaces per dwelling unit and an 85<sup>th</sup> percentile peak parking demand of 1.94 spaces per dwelling unit.

Ms. Emily Wentworth  
November 10, 2016  
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This concludes our review of the materials that have been submitted to date in support of the Project. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

A handwritten signature in black ink that reads "Jeffrey S. Dirk". The signature is written in a cursive, flowing style.

Jeffrey S. Dirk, P.E., PTOE, FITE  
Principal

JSD/jsd

cc: File