

October 31, 2019

Wayland Planning Board
 Town of Wayland
 c/o Mr. Sarkis Sarkisian
 Town Planner
 41 Cochituate Road
 Wayland, Massachusetts 01778

Wayland Conservation Commission
 Town of Wayland
 c/o Ms. Linda Hansen
 Conservation Commission Administrator

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 Boston, MA 02127

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RE: ALTA at River’s Edge Residential Development
 Wayland, MA
 Planning Board and Conservation Commission Peer Review

Dear Mr. Sarkisian and Ms. Hansen:

BSC Group, Inc. (BSC) has completed a peer review of the Planning Board permits and Wetlands Notice of Intent submissions for proposed ATLA at River’s Edge residential development to be located at 490 Boston Post Road. This work is being undertaken under BSC’s contract dated August 5, 2019, as approved by the Town of Wayland on October 22, 2019.

BASIS OF CURRENT REVIEW

For this peer review, BSC reviewed the following documents:

AVAILABLE PERMITTING DOCUMENTS – ALTA AT RIVER’S EDGE DEVELOPMENT

Conservation Commission:

- Notice of Intent Filing, prepared by Allen & Majors, dated 07-03-2019;
- Drainage Report, prepared by Allen & Majors, dated 06-20-19, revised through October 18, 2019;
- Chapter 195 Application, dated 07-03-2019;
- Drainage Report, prepared by Allen & Majors, dated 06-20-2019, revised through October 18, 2019;
- Site Plans, prepared by Allen & Majors, dated 07-03-19 revised through October 18, 2019.

Planning Board:

- Site Plan Application C;
- ZBA Application for Variances, dated 06-20-2019, with supporting materials;
- Town Planner Checklist and Memo, dated July 2, 2019;
- Drainage Report, prepared by Allen & Majors, dated 06-20-2019, revised through October 18, 2019;

Engineers
 Environmental Scientists
 Custom Software Developers
 Landscape Architects
 Planners
 Surveyors



- River's Edge Civil Plans 2019, prepared by Allen & Majors, dated 06-20-2019, revised through October 18, 2019;
- Hydrogeologic Evaluation Alta at River's Edge, prepared by GeoHydroCycle Inc., dated September 19, 2019;
- River's Edge Architectural Elevations 2019, prepared by The Architectural Team, dated 06-20-2019, revised through October 18, 2019.

Other Pertinent Reports and Studies:

- Phase I Environmental Site Assessment and Limited Phase II Investigation Report, prepared by Vertex Companies, Inc., dated August 7, 2019;
- Traffic Study, TEC Inc., 2013
- Sudbury River View Impact Study, 2013
- Massachusetts Wetlands Protection Act, MGL Chapter 131, Section 40.
- Massachusetts Department of Environmental Protection (DEP) Massachusetts Stormwater Handbook.
- The Town of Wayland Bylaws, Chapter 193, Stormwater and Land Disturbance.
- The Town of Wayland Bylaws, Chapter 194, Wetlands and Water Resources Protection
- The Town of Wayland Bylaws, Chapter 198, Zoning.
- The Town of Wayland Bylaws, Chapter 302, Site Plan Review and Approval.

PROJECT REVIEW COMMENTS

BSC offers the Planning Board and Conservation Commission the following comments based on our review of the project and information detailed above.

I. Procedural Items and/or misc. comments

- a. It is BSC's understanding that negotiations are currently underway between the Town of Wayland and the project proponent, WP Acquisitions, LLC. The resolution of these negotiations may have impacts to the proposed development project that are not foreseen at this time, which could require modifications and/or more detailed design for specific elements of the project, e.g. the design of the onsite sanitary sewage treatment facility and subsurface sewage disposal system.
- b. The proposed development plans show impacts to offsite areas to the west and east of the project site. To the west, proposed demolition and grading activities are shown on property contained within the Town of Sudbury. To the east, site access, grading, utilities connections, landscaping and drainage outlets are shown on property owned by the Town of Wayland.

BSC recommends that approvals and/or easements for this work be sought from the appropriate municipal authorities for these impacts.



- c. A general review of the State permitting required for this project indicates that a Groundwater Discharge Permit will be required from MassDEP for the proposed subsurface sewage disposal system (anticipated sanitary sewer flow of 37,380 gpd per page 1, Hydrogeologic Evaluation Alta at River's Edge), and a Highway Access Permit will be required from MassDOT (Boston Post Road is under MassDOT jurisdiction).
- d. BSC has reviewed the proposed development as it relates to project review thresholds under the Massachusetts Environmental Policy Act, MEPA. With the proposed development anticipated to generate at least 1,000 new vehicle trips per day (see page 6, under Item 5, Drainage Report) and the construction of 348 parking spaces, along with the required MassDOT Highway Access Permit, it appears that the project will trigger two of the MEPA thresholds under Transportation, 301 CMR 11.03 (6) 14. – 1,000 new vehicle trips per day and 150 new parking spaces, and 15. – 300 new parking spaces. **The above will require the filing of an Environmental Notification Form (ENF) for the proposed development with the MEPA office.**
- e. Understanding that the design, operation and details of the proposed onsite sewage treatment plant and subsurface disposal system are to be finalized in the near future, and that this system may involve the Town of Wayland, BSC has not reviewed this system.

BSC recommends the appropriate Town boards and agencies, particularly the Wayland Board of Health, be involved in the review and approval of the final design of the proposed sewage treatment plant and subsurface disposal system.

- f. Wayland Wetlands Regulations note “The Conservation Commission does not permit an increase in the rate or volume of runoff for frequent storm events (0.5” rainfall, 1” rainfall, 2-year storm event) and generally requires no increase in volume for 10-year, 25-year storm events and generally for 100-year events.” These regulations also require runoff calculations for 1” rainfall, 10-year and 100-year storm event. No calculations are included within the NOI for 0.5” rainfall and 25-year storm events.
- g. Acknowledging ongoing negotiations between the Town and the project proponent, a generalized construction schedule, as required under the various Town regulations, has yet to be developed or submittal as part of the local permitting process.

BSC recommends the appropriate Town boards and agencies be involved in the review and approval of the final construction schedule.

- h. Based upon a review of the proposed site grading for the River's Edge development, it is not clear how much cut or fill material will be generated during its construction, and whether any local approvals may be required for earth removal operations on the site.



- i. BSC wants to point out that the Headwall #2 outlet proposed at the eastern edge of the property will result in a new point source discharge to the adjacent property, which eventually flows into nearby Great Meadows Natural Wildlife Refuge lands, owned by the United States of America. BSC wants to make sure the Commission approves this discharge to the Federal Lands. We do note that the discharges from this outlet are proposed to meet the Massachusetts Stormwater Guidelines and will not exceed the pre-construction peak flows from the project site to this adjacent property.

II. Technical Items

- a. Site Plans, Demolition and Erosion Control Plan, Sheet C-101: Perimeter sedimentation and Erosion Controls are shown along the proposed limits of work within the subject property. However, as noted under Item I. b. above, work associated with the proposed development will be undertaken outside the western and eastern edges of the proposed development, on separate properties. This work includes site access connections, grading, utilities connections, landscaping and drainage outlets.

BSC recommends that the perimeter sedimentation and erosion controls be extended to encompass these offsite work areas.

- b. Site Plans, Demolition and Erosion Control Plan, Sheet C-101: Several Stockpile & Staging Areas are noted on this plan. The northernmost staging area is located at the top of the existing bank which steeply slopes down to wetlands along the northern border of the site, close to the proposed location of the future storm drainage outfall, Headwall #1. The stockpile area is proposed to be surrounded with erosion and sedimentation controls, and there are similar controls along the perimeter of the project work area.

BSC recommends that this Stockpile & Staging Area be shifted to provide more separation between the stockpile and adjacent top of slope, to avoid potential sedimentation from entering the wetlands downslope.

- c. Site Plans, Layout and Materials Plan, Sheet C-102: The western portion of the project site lies within the Refuse Disposal Zoning District, which prohibits residential use within this zoning district. In addition, under the Land Usage Table, and its associated notes, for several dimensional controls Note 8 states "Relief from Town of Wayland Zoning Bylaws required." These dimensional controls include maximum lot coverage, minimum building setback, minimum front and side yards, maximum building height, and maximum number of dwelling units.

BSC presumes these zoning dimensional control items will be addressed through River's Edge Zoning Overlay District and pending Zoning variance requests.



- d. Site Plans, Layout and Materials Plan, Sheet C-102: Two 10' wide by 35' deep Moving Truck Parking Area spaces are provided along the northern edge of the proposed parking field. The access to these spaces is directly from the 24' wide driveway access, which are located adjacent to standard parking spaces.

BSC recommends truck turning information be provided for these Moving Truck Parking spaces to insure there is adequate area to maneuver vehicles, particularly larger moving trucks more than 20' in length, into and out of these spaces.

- e. Site Plans, Grading and Drainage Plan, Sheet C-103: The Site Plan shows extensive grading in the slope area immediately to the west of proposed Building 3. The proposed grading will have a 2:1 slope, range from a high point of elevation 169 to a low point, near the building, of elevation 142. A shallow swale, 2' to 3' deep, is proposed approximately 20' from the western face of Building 3. Two area drains with 12" diameter grates and rims at elevation 142 are located within the swale. These area drains will intercept runoff from the slope, drop into their structure, with inverts 3.2' and 3.4' below their rims, and convey it through a 6" diameter pipe into the overall site storm drainage system. The ground surface elevations at the northern and southern ends of this swale are proposed to be elevation 145.5 and 146.0, respectively.

Comparing the information regarding the proposed area drains, identified as AD#1 and AD#2 on the Site Plan and as shown on Details Sheet C-505, Detail 7, with the information contained within the Stormwater Pipe Sizing Table contained within the Section 6.7 of the Drainage Report, several minor discrepancies are noted. No information on AD#1 is found in the Pipe Sizing Table. The anticipated stormwater runoff to AD#2 for a 25-year frequency storm event calculated in the Pipe Sizing Table is 1.63 cfs. The required pipe size from AD#2 into the proposed storm drainage system is given as 12" in the Pipe Sizing Table. The rim elevation for AD#2 is given as 144.5 in the Pipe Sizing Table.

The floor elevation of the residential building is indicated to be elevation 146.5, with the floor elevation of the parking level below at elevation 135.5. BSC's concern relates to the proximity of the swale to the building, and the limited elevation difference between the top swale overflows at 145.5 and 146, and the building first floor elevation of 146.5. These overflow elevations provide between 0.5' to 1' of "freeboard" between the overflow elevations out of the swale and the adjacent first floor elevation. Typically, area drain grates have a limited capacity to allow inflow of runoff through their grate and into the structure to be conveyed into the overall storm drainage system.

BSC would recommend that the project proponent's engineer review the design of the area drains, resolve the minor discrepancies noted above, utilize a 12" diameter drain pipe for the connections from the area drains into the storm drainage system, evaluate the inlet capacity of the area drain grates, and consider



providing overflows from the swale that will afford more freeboard between the overflow elevations and the adjacent building first floor elevations.

- f. Site Plans, Grading and Drainage Plan, Sheet C-103: The Site Plan shows a retaining wall to be constructed at the southeastern corner of the project site located approximately 20' from the existing roadway Right of Way/property boundary at Boston Post Road. This retaining wall will provide the grade transition between the higher existing ground elevations along Boston Post Road and lower proposed grading for the proposed parking area. The vertical height of the retaining wall going from north to west to east will range from 2' to 8' to 5' to 0'. The proposed retaining wall will consist of a segmented block retaining wall, as shown on Site Plan Details Sheet C-505. Between the top of the wall and the roadway Right of Way/property line, a 3:1 slope is proposed to meet the existing grade at the property boundary.

A segmented type retaining wall requires that a geosynthetic reinforcement fabric be placed behind the face of the wall to provide adequate stability for the structure. This geo-fabric could extend 5' feet or more behind the wall face. BSC's concern is the constructability of this retaining wall, as the actual limit of construction will need to extend farther back into the existing slope and much closer to the property boundary.

BSC recommends the project proponent's engineer review the proposed segmented block retaining wall design to address potential constructability issues that may be associated with this wall.

- g. Site Plans, Grading and Drainage Plan, Sheet C-103: The Site Plan indicates there will be precast concrete curb (PCC) along the proposed parking areas. While there are earthen berms proposed along portions of the parking area located at the northern side of the development, there are sections of the parking where spaces are located immediately adjacent to the 1:1 to 3:1 slope that falls 15' or more vertically to the bottom of the slope.

BSC recommends the project proponent's engineer consider utilizing guard rail or other safety measures to provide a barrier at the edge of those portions of the parking area immediately adjacent to the slope.

- h. Site Plans, Grading and Drainage Plan, Sheet C-103: The Site Plan indicates that Headwall #1, located at the northerly edge of the development will discharge at an elevation of 125.23. A rip rap apron will be installed from the outlet headwall extending partially down the slope. See Site Plan Details, Sheet C-505, Detail 8. The Site Plan appears to indicate the rip rap apron will end about 15' from the outlet pipe headwall, at elevation 122. Below the end of the rip rap apron, the existing slope drops 5' vertically over 5' horizontally. It is understood that the toe of the slope in this area is generally at the limits of the Bordering Vegetated Wetlands (BVW), and that the Town typically requires a no-disturb zone setback from the BVW.

Outflows from this pipe are anticipated to be 3.68 cfs for the 2-year frequency design storm and 6.96 cfs for the 10-year design storm. These peak flow rates will have velocities at the outfall of approximately 4 to 6 feet per second (fps). While the rip rap



will act as an energy dissipater, these flows when passing over the existing slope after leaving the rip rap apron could cause significant scour and erosion of the slope downstream of this outlet.

BSC recommends the project proponent's engineer consider means of providing protection and/or additional energy dissipation measures to avoid scour and erosion downstream of the drainage outlet at Headwall #1.

- i. Site Plans, Grading and Drainage Plan, Sheet C-103: the Site Plan shows runoff from the proposed access driveway in the front of the site, adjacent and parallel to Boston Post Road will be collected in two catch basins, CB#8 and CB#9. These two CB's intercept runoff from approximately 280 feet of this driveway, as well as about 60 feet of the parking lot in front of Building 2. This driveway runs from the main site access from Boston Post Road to the parking area in front of Building 2 at a slope of 5%. Runoff flowing down this driveway could be flowing at an increased velocity due to this slope and could bypass these two catch basins, and flow into the main site access drive.

BSC recommends the project proponent's engineer consider a means of reducing the potential bypass at CB#8 and #9, such as providing a double grate CB or other appropriate measures.

- j. Site Plans, Grading and Drainage Plan, Sheet C-103 and Drainage Report Section 4.0 Existing and Proposed HydroCAD and Section 6.7, Stormwater Pipe Sizing Table: BSC has reviewed the Site Grading and Drainage Plan and Pipe Sizing Table and found these to be consistent. BSC has also reviewed the Existing and Proposed HydroCAD calculations and found these to be prepared utilizing standard engineering practice.

However, when BSC reviewed the HydroCAD calculations for the three proposed Underground Infiltration Systems (UIS), it was noted that during some of the design storms, the elevation of the stormwater temporarily contained within these systems resulted in water backing up into the storm drainage system upstream (U/S) of these structures. This situation means the upstream drainage system has a **tailwater**, i.e. the downstream water surface is above the invert elevation of the inlet pipe. Such situations can result in a reduction of the flow capacity within the upstream pipe system.

Here is a summary of the water elevations within the UIS vs upstream structures:

For UIS#1: peak elevation of stormwater within structure for:

2-year event = 137.04

10-year event = 137.90

Invert at U/S CB#3 = 136.80

Invert at U/S AD#2 = 137.45



For UIS#2: peak elevation of stormwater within structure for:

2-year event = 127.61

10-year event = 128.52

Invert at U/S CB#4 = 126.85

Invert at U/S CB#5 = 128.35

Invert at U/S CB#8 = 127.12

Invert at U/S CDS#2 = 125.80

For UIS#3: peak elevation of stormwater within structure for:

2-year event = 126.33

10-year event = 127.15

Invert at U/S CB#6 = 125.60

Invert at U/S CB#7 = 125.95

Invert at U/S CB#10 = 125.45

Invert at U/S AD#11 = 126.47

Invert at U/S CDS#4 = 125.00

A drainage pipe operating under a tailwater or outlet control (vs the standard assumption of inlet control for pipes) condition can be evaluated using standard methodology, and, depending upon the situation, may not result in a significant reduction in pipe flow capacity or increased water elevations upstream. However, this situation should be checked to insure no negative impacts occur within the upstream drainage system. This may be more critical for the area drains noted under Item e above, where a reduced pipe capacity could potentially limit the capacity of Area Drains #1 and #2.

BSC recommends the project proponent's engineer consider evaluating the proposed drainage system components upstream of the Underground Infiltration Systems for outlet control or tailwater conditions to determine if there are any adverse impacts to the upstream drainage system's capacity.

- k. Site Plans, Utilities Plan, Sheet C-104: The Site Plan indicates two locations for proposed hydrants on the site. One of these proposed hydrants is in front of Building 2 and the other is located behind Building 2. These hydrants are located approximately 500' along the proposed access drives from each other.

BSC will defer to the Wayland Fire Department relative to their requirements for adequately providing accommodations for fire protection and fighting requirements.

BSC recommends the input of the Wayland Fire Department be sought regarding whether additional fire hydrants might be located in strategic positions on the site.

- l. Understanding the Town is currently installing a new water main within Boston Post Road, which will service the proposed River's Edge development, it is presumed that this system has been evaluated to insure the proposed residential development has adequate pressure and flows for domestic and fire services.



- m. Site Plans, Utilities Plan, Sheet C-104: As noted previously, schematic information is presented on this Site plan regarding the proposed onsite sewage treatment plant and subsurface sewage disposal system. The Site Plan also indicates a 2,000-gallon tight tank to be installed onsite to contain runoff from the under building parking areas.

BSC recommends the appropriate Town boards and agencies, particularly the Wayland Board of Health, be involved in the review and approval of the final design of the proposed sewage treatment plant and subsurface disposal system, as well as the 2,000-gallon tight tank, especially relating to its operation and disposal of its contents.

- n. Site Plans, Fire Truck Turning Plan, Sheet C-105: The Plan shows the turning movement from Boston Post Road. This turning radius appears to cross off the limits of the existing pavement at the southern side of the access drive.

BSC recommends the proposed turning radius should be checked to ensure that all portions of the fire truck will pass over pavement areas, and if needed, the pavement in this area should be adjusted accordingly.

The Site Plan indicates two locations are provided to allow fire trucks to turnaround via the utilization of turnouts.

BSC will defer to the Wayland Fire Department relative to their requirements for adequately providing accommodations for fire protection and fighting requirements.

BSC offers the following for consideration regarding the fire access for this site:

- There does not appear appropriate pedestrian access for emergency operations around the west end of Building 3;
- Vehicular access to Building 3 is limited to the south and northeast portions of that building.

BSC recommends the input of the Wayland Fire Department be sought regarding the adequacy of provided for vehicular and pedestrian emergency access across the project site.

BSC has conducted a limited review of the VERTEX's August 2019 Phase I Environmental Site Assessment & Phase II Limited Site Investigation and the Site Development Plans for ALTA at River's Edge, 490 Boston Post Road in Wayland, Massachusetts, dated October 18, 2019. Based on our preliminary review, BSC has the following recommendations, conclusions, and questions. Overall, BSC highly recommends the Town's LSP review the design closely for thresholds that may exceed reportable conditions and ensure the site is suitable for residential use.

- o. Have the reportable conditions been reported to MassDEP? The owner of the property has 120 days from the date of obtaining knowledge of the reportable conditions to notify MassDEP. The 120 day deadline from the date of VERTEX's report is December 5, 2019.



- p. With regard to the former wastewater treatment basins, only two soil borings were completed for all three basins; no groundwater monitoring wells were installed. BSC recommends that additional sampling be completed to assess more than just two locations, and that wells be installed to determine if groundwater was affected by historic use. Overall, BSC recommends the Town have a solid understanding of groundwater flow direction across the site and possible contaminant distribution at the property since there are three proposed groundwater recharge areas. Some groundwater contamination appears to be coming from the off-site landfill and VERTEX recommended filing a Downgradient Property Status (DPS) Opinion relative to that contamination. The use of the groundwater recharge areas could exacerbate the current situation by changing the groundwater flow direction, thereby forcing the contamination to migrate in a different direction.

- q. With regard to soil vapor issues and elevated methane levels, VERTEX concluded “VERTEX recommends the installation of a chemically resistant vapor barrier and/or a vapor mitigation system to protect indoor air in future buildings constructed where occupied ground floors and/or basement areas are in contact with the site soils. Based on current development plans, mechanically ventilated garages are to be constructed along the lower levels of the proposed buildings, which would be appropriate for vapor mitigation.” BSC did not review specific plans for mechanical ventilation in the garages but recommends that the proposed construction include vapor mitigation strategies across the entire site to address soil gas vapor issues associated with the adjacent landfill.

- r. BSC recommends that a Health and Safety Plan (HASP) and Soil Management Plan (SMP) be prepared by the contractor(s) before beginning construction work at the property. Due to the detection of reportable concentrations of soil and groundwater contaminants at the Site, a HASP should be prepared to address the known and potential contaminants at the Site. In addition, a SMP should be prepared to address the proper handling of soils from the property in terms of sampling for disposal purposes, appropriate temporary storage, shipping documentation, and confirmation that soil was disposed appropriately.



We look forward to discussing this project with you further at the public hearings on the project. Please feel free to contact Melissa at (617)-896-4517 or mkaplan@bscgroup.com or Frank at (617) 896-4471 or fdipietro@bscgroup.com should you have any questions on the information in this report.

Sincerely
BSC Group, Inc.

Melissa Kaplan

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Ecological

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cc: Julia Junghanns, Director Wayland Board of Health