



TOWN OF ARLINGTON

MASSACHUSETTS

## CONSERVATION COMMISSION

November 20, 2020

Zoning Board of Appeals  
Town of Arlington  
730 Massachusetts Avenue  
Arlington, MA 02474

**RE: Thorndike Place – Application for Comprehensive Permit  
Fourth Set of Comments from Conservation Commission  
Applicant’s November 2020 revised submittals & October 2020 Wetland Delineation**

Dear Chairman Klein and Members of the Board:

The Arlington Conservation Commission (hereinafter “ACC”) provides this fourth set of comments to the ZBA, this time addressing the information Arlington Land Realty LLC (the “Applicant”) provided on October 22, 2020 (Wetland Delineation) and November 3, 2020 (revised submittals) in support of its Comprehensive Permit Application, filed with the Town on or about August 31, 2016 and supplemented in March 2020, September 2020, October 2020, and November 2020. The ACC provided initial comments to the ZBA on the Application by letter dated September 26, 2016, a second set of comments on July 9, 2020 based on the March 2020 submittals, and a third set of comments on October 9, 2020 based on the September 2020 submittals.

The ACC reviewed and comments here on the following documents provided by BSC Group (Applicant’s engineer):

1. ZBA Transmittal - Wetland Delineation 2020-10-22.pdf
2. Thorndike Place Wetland Delineation Memo\_REVISED\_10-19-2020\_gtd.pdf
3. Wetland Delineation Field Data Forms.pdf (*MassDEP Bordering Vegetated Wetland Forms*)
4. 2340700-CONSTRAINTS w Updated Wetlands.pdf (*Existing Environmental Resources Plan*)
5. ZBA Transmittal\_Supplemental ApplicationMaterials 2020-11-03.pdf
6. Report on Existing Site Conditions\_Nov.2020 (00176278xBC4F6).pdf
7. 2020-11-03 Stormwater Report.pdf
8. Compliance with OS-Master Plan Statement (00176275xBC4F6).pdf
9. WaiverList\_Nov.2020.update (00176301xBC4F6).pdf
10. 2020-11-03 Thorndike Place Plan Set
11. Thorndike-Arc-Binder-sm (002).pdf (*Thorndike buildings & elevations, Nov. 2020*)
12. 06082020ZoningBoardofAppea.pdf (*Wildlife Habitat and Vegetation Evaluation, Nov. 2020*)

## **General Comments**

The ACC is pleased that the supplemental materials are responsive to many of our prior comments, including the project now proposing a 2:1 compensatory flood storage ratio (creating 2 cubic feet of new flood storage for each cubic foot of flood storage lost), an important requirement of the ACC's wetland regulation to protect the ability of the 100-year floodplain to hold flood waters.

The ACC's prior comments concerning the value of the wetland resources, vegetation replacement, floodplain, and stormwater impacts are not reiterated herein and are still valid.

## **Issue #1. Wetlands Delineation**

BSC performed an updated Wetland Delineation in October 2020 and provided the required supporting MassDEP field forms as requested by the ACC.

- The BSC Group provided the updated Wetland Delineation and supporting field forms (dated October 15, 2020) for the site that now will enable BETA Group to review the delineations.
- Existing Environmental Resources Plan Sheet C-100 shows the BSC Wetland Delineation.
- The two isolated wetlands previously shown on site plans have been eliminated based on the October 2020 wetland delineation.

### Recommended Action:

ACC understands that BETA Group has performed a review of BSC's wetland boundary delineations and will advise on whether it agrees with this updated delineation.

## **Issue #2. Floodplain & Compensatory Flood Storage**

BSC provided floodplain delineations and flood plain storage information requested by the ACC:

- The 100-yr floodplain is identified as elevation 6.8 as depicted on Existing Conditions and Existing Environmental Resources Plans (Sheets V-100 and C-100). The Applicant uses this elevation to delineate the wetland resource area called Bordering Land Subject to Flooding.
- Compensatory storage is proposed 2:1 at two elevations.
- Proposed compensatory flood storage location is in the north central portion of site, east of the proposed buildings and play ground, and outside of the mapped 100-year floodplain as depicted on Sheet C-101 & C-105. BSC materials (the Wildlife Habitat evaluation) also indicated that an alternative compensatory storage location at the site of the existing homeless encampment was considered.
- Proposed plantings or restoration of the compensatory flood storage location after it is created is not discussed in proposal – only grading of area discussed.

Other Considerations:

- The Climate Ready Boston project and the City of Cambridge's Climate Change Vulnerability Assessment (CCVA Report) assess projected flooding in the Mystic River Basin. Their studies and models point to changes in flood magnitude and frequency in the years 2050 or 2070 and beyond. These studies evaluate sea level rise and storm surges and project that larger storm surges will increase the likelihood that the Amelia Earhart Dam will be overtopped or circumvented, reversing the flow of water in the Mystic Basin and preventing freshwater from advancing downstream, thus increasing the flooding vulnerability of upstream communities. The increased vulnerability of the area surrounding Alewife Brook should be considered as part of the impact analysis on the natural and built environment required under the ZBA regulations, given the large size of the building footprint and the loss of open space/buffer resulting from development.

Recommended Actions:

1. ACC recommends that BETA Group verify flood storage volume lost and compensatory flood storage proposed.
2. ACC recommends that the Applicant address why the alternative location for the Compensatory Flood Storage area in the area of the current homeless encampment is not preferable (or also used to supplement flood storage). As documented in the Wildlife Habitat Evaluation, it is less suitable for wildlife habitat.
3. ACC recommends that BETA Group evaluate the efficacy of the proposed compensatory flood storage location (s) to act as flood mitigation into the future, taking into consideration potential climate change impacts as required by the Comprehensive Permit under ZBA.
4. ACC recommends that the ZBA require the Applicant to provide a floodplain restoration plan for the proposed compensatory flood storage area of the site to mitigate for the negative environmental impacts of the vegetation removal and grading to create the compensatory flood storage area.
5. ACC recommends that BETA Group consider climate change impacts, in concert with BSC and in consideration of data available for Arlington in the Massachusetts Coastal Flood Risk Model (MC-FRM, communication from Woods Hole Group) and information generated by Cambridge's Climate Change Vulnerability Assessment to propose even more robust mitigation for building in the floodplain or immediately adjacent to it, considering that the base flood elevation/extent of flooding in the area is projected to rise in the coming decades.

**Issue #3. Stormwater Management**

BSC provided a Stormwater Report that includes results of computer modeling using HydroCAD software as requested by the ACC.

- An infiltration unit for groundwater recharge is provided, located beneath surface parking area at west of building. Indicates no loss of annual recharge. A second infiltration unit is also proposed near the building area.

- The infiltration system has been designed with a bottom elevation of 5.0 feet to provide a minimum 2-foot elevation above the groundwater table. BSC's report also indicates that the estimated groundwater elevation is based on soil investigations by others.
- Porous walkways are proposed instead of traditional impervious walkways.
- Total Suspended Solids or "TSS" removal is calculated to be greater than 80% by using deep sump catch basins, hydrodynamic separator, and an underground infiltration system.
- Watershed modeling performed using HydroCAD Stormwater software – tables of peak flow discharge rates provided for 2, 10, 25, 50, and 100-year, 24-hour storm events. Post-development conditions indicate no increase to peak runoff rates.
- The source of the precipitation data used in the HydroCAD Stormwater software to calculate stormwater flows is not stated.

Other Considerations:

- There are ongoing efforts by MassDEP to update/align the Wetland Protection Act Stormwater requirements and Stormwater Management Handbook to align these with the MS4 requirements. MassDEP is now recommending TSS removal of 90% for new development.
- Whereas ACC previously recommended that the stormwater analysis use NOAA Atlas 14, ACC has since been further informed by ongoing efforts of MassDEP to update/align the Wetland Protection Act stormwater requirements and Stormwater Management Handbook to align these with the 2016 EPA Municipal Separate Storm Sewer System (MS4) requirements, to which Arlington must adhere. MassDEP is now recommending that NOAA + (NOAA Plus) for precipitation values be used. Others are recommending NOAA++. The rainfall data presented in BSC Stormwater report are lower than the NOAA+ and NOAA++ data for Dorothy Road, Arlington, MA as projected by *NOAA Atlas 14 Point Precipitation Frequency Estimates* at: [https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=ma](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ma)

Recommended Actions:

ACC understands that BETA Group is reviewing the efficacy of the stormwater management design presented by BSC. Based on the results of BETA Group's evaluation, the following recommended actions are relevant to consider either for the current design or for a re-design of the stormwater management plan.

1. ACC recommends that the Applicant update its Stormwater Report to reflect the new minimum standards now recommended by the MassDEP Stormwater Advisory Committee, including use of NOAA+ at a minimum, 90% TSS removal, and revised recharge guidance. While ACC is aware that formal revisions to MassDEP regulations will not occur until next year, it is within the spirit of the State Executive Order 569, State Hazard Mitigation and Climate Adaption Plan, and Arlington's Comprehensive Permit Regulations to conservatively design a stormwater management system so that climate change and hazard mitigation are taken into account.
2. ACC recommends that existing groundwater elevations be verified, particularly if soil investigations on which the groundwater elevations are estimated are old or outdated.

3. ACC recommends that the Applicant further evaluate green infrastructure measures to increase the adaptive capacity and resiliency of stormwater management infrastructure.
4. ACC recommends that BETA Group consider climate change flooding impacts using NOAA + and NOAA++ precipitation rates to be resilient/protective for future extreme storms, consistent with the MassDEP Stormwater Advisory Committee recommendations.

#### **Issue #4. Evaluation of Wildlife Habitat & Vegetation**

BSC provided a comprehensive Wildlife Habitat and Vegetation Evaluation report supported with field survey notes, as requested by the ACC.

- The evaluation was performed using a desktop review and on-site field survey, supported by field notes. The report indicates that “Much of the site is characterized by a diverse, mature forest canopy with dense understory vegetation.”
- Undesirable invasive plants are numerous in the understory as herbaceous vegetation (e.g., Garlic Mustard).
- Field survey performed for locations within the AURA, floodplain, and possible compensatory storage locations.
- There are large, desirable native trees in the canopy including Silver Maple, Cottonwood, and Red Maple, among others. The report stated that there were numerous large trees, “many of which are near or in excess of 30” DBH.” BSC did not conduct an inventory of these trees; however, they stated “they were present at five (5) of the eight (8) survey plots.”
- A significant feature noted was extensive amount of downed woody debris; which can be “particularly valuable to small mammals, reptiles and amphibians.”
- No vernal pool habitat noted on site.
- This urban forest does have connectivity to Spy Pond and the Alewife Brook Reservation; therefore, it is not entirely isolated though dense development surrounds the parcel.
- Wildlife typical of urban forests were evident including birds and small mammals and coyote.

#### Recommended Action:

ACC understands that BETA Group is reviewing the Wildlife Habitat & Vegetation report and will advise on whether it agrees with this report and conclusions.

1. ACC recommends that the ZBA require the Applicant quantify the numbers and types of trees (including species and DBH) that will be removed during construction in the AURA so that the ACC and BETA Group can evaluate the planting plan as mitigation for loss of canopy, wildlife habitat, and climate change resilience attributes.

**Issue #5. Conservation Restriction for Undeveloped Lands of the Mugar Parcel**

- The Existing Conditions memo indicates that “The Applicant has proposed that the environmentally sensitive portions of the site be protected by a conservation restriction or other appropriate land conservation mechanism.”
- The Compliance with Open Space memo states that “The Applicant, the Town and its community can work together toward a path to steward the undeveloped lands, as such stewardship models may exist with other protected areas, such as the private lands at the former Symmes Hospital.”

Recommended Action:

1. ACC recommends that the ZBA work with the ACC, the Arlington Land Trust, the Arlington Open Space Committee and other Town officials to propose an appropriate conservation and stewardship mechanism for the proposed undeveloped portions of the site that are protected resource areas under the Town Bylaw and implementing Wetlands regulations.

**Conclusion**

Once the Applicant and the BETA Group complete the recommended tasks, the ZBA will have much, if not all, of the information needed to determine whether the proposed project complies with the Arlington Wetlands Protection Bylaw and June 4, 2015 Wetland Regulations and the anticipated MassDEP Stormwater revisions.

We hope the ZBA finds the above comments helpful. Please contact us should you have questions. I and other ACC members plan on attending the ZBA’s hearing on the Application on November 24, 2020.

Very truly yours,

*Susan*

Susan Chapnick, Chair  
Arlington Conservation Commission