

Conservation Commission Requests for Information #4



Re: Arlington High School Expansion

SCI File #17211.00

RE: Conservation Requests May 21, 2020 Item #4 AURA Analysis

Section 25 – Adjacent Upland Resource Area

C. Alternatives to Work in Adjacent Upland Resource Area. A growing body of research evidence suggests that even "no disturbance" areas reaching beyond 25 feet from wetlands, streams, rivers, and other water bodies may be insufficient to protect many important characteristics and values. Problems of nutrient runoff, water pollution, siltation, erosion, vegetation change, and habitat destruction are greatly exacerbated by activities within 100 feet of wetlands. Thus, work and activity in the Adjacent Upland Resource Area shall be avoided and discouraged and reasonable alternatives pursued.

Only when the Applicant proves through a written alternative analysis that reasonable alternatives are not available or practicable, the Commission may, in its discretion, allow temporary, limited, or permanent disturbance as appropriate and consistent with this Section depending on the characteristics of the Adjacent Upland Resource Area, including but not limited to the following:

(1) slope

- The proposed design provides a stabilized slope planted with native plants and grasses.*

(2) soil characteristics

- The soils horizon is "B" type soils but the surface is degraded with areas of distressed pavement, islands that have been used as parking and are compacted gravel and slopes that have little to no topsoil left on them to properly grow groundcover to stabilize the slope.*

(3) drainage patterns

- Drainage patterns under proposed conditions are maintained but the stormwater BMP's designed will provide significant improvement over the stormwater controls that exist today.*

(4) extent and type of existing native vegetation

- The existing surfaces within The AURA are degraded with areas of distressed pavement, islands that have been used as parking and are compacted gravel, and slopes that have little to no topsoil left on them to properly grow groundcover to stabilize the slope.*

(5) extent and type of invasive vegetation

- The top of the existing bank along Mill Brook is a mix of low-lying vegetation and poison ivy that will be removed as part of the project.*

(6) amount of impervious surface

- The existing AURA has 31,151 sf of impervious area, which as mentioned above is in degraded condition and many of the landscaped islands are left as compacted gravel. In the proposed condition, the impervious coverage is increased by approximately 3,500 sf to 34,665 sf, but the AURA in the post construction condition will be better for Mill Brook and the wetland resources due to:*

- Increased vegetation*
- Vertical granite curbing*
- Stormwater BMP's, such as a water quality inlet.*
- Slope plantings that stabilize the top of bank to Mill Brook and provide topsoil to promote healthy plant growth.*

(7) wildlife and wildlife habitat

Samiotes Consultants, Inc.
Civil Engineers + Land Surveyors

20 A Street
Framingham, MA 01701-4102

T 508.877.6688
F 508.877.8349

www.samiotes.com

- *The AURA under existing and proposed conditions will change little due to the minimal changes to the form and function of the parking lot.*
- (8) *intensity and extent of use*
- *The intensity and use within the AURA will not change as the program won't change the parking, and stormwater will provide a better level of treatment.*
- (9) *intensity and extent of adjacent and nearby uses*
- *The intensity and use of adjacent areas to the AURA will not change as the program won't change the parking, and stormwater will provide a better level of treatment as stated within (8).*
- (10) *capacity to provide resiliency to climate change*
- *The stormwater management will now meet State and local standards including such Low Impact Development BMP's as Rain Gardens and water quality units that will directly or indirectly clean the stormwater prior to discharge into the resource areas.*

Alternative analysis:

Alternative 1: Renovation Only

An alternative to the selected option is to renovate the existing School, along with additions to the existing school. These alternatives also leave the existing previously disturbed areas (parking, etc.) as is, thus not improving the AURA from its current condition.

Alternative 2: Additions and Renovations

Another alternative to this project is to renovate portions of the existing school and add on additions to the structure. This would not meet the criteria for the District's educational vision for the school – leaving many critical elements of the educational plan unaddressed. These alternatives also leave the existing previously disturbed areas (parking, etc.) as is, thus not improving the AURA from its current condition.

Alternative 3: No Build

The proposed School would not be built in this scenario. This does not meet the program requirements for the school / district and the AURA would be kept in it's current condition which does not provide water quality within the stormwater system, doesn't provide trees to shade the wetlands and currently has a parking lot in need of repair.

As stated within the Riverfront Alternatives analysis, during the MSBA feasibility study, the team investigated multiple layouts for suitable solutions for the site. It was determined through that study that the selected alternative best met the programmatic requirements while accommodating the physical constraints of the parcel (resource areas, size, shape, slopes, etc.). There is very little change in terms of surface coverage between the existing condition and the proposed condition. In both cases, the area in question is utilized as both parking and as circulation, which require an impervious surface. Additionally, the proposed condition locates the AHS loading dock to this side of building and paved areas are required to allow delivery trucks the turning radii they need to navigate to the loading area off Mill Street and continuing the existing connection to that accessway for the school and the abutting condo complex. Parking has been consolidated to the south of the loop drive and a planted median will allow stormwater to recharge into the soil. We have added a sidewalk along Mill Brook Dr. which will allow students and visitors to safely walk along Mill Brook Dr. to the school and no longer in the roadway/parking lot. The sidewalk will turn north along the loop drive and connect to a small plaza at the entrance to the Minute Man Bike Path Connector. The paved space here is necessary as there are multiple modes of transportation meeting and navigating their way to/from the entrance of the school. In the final alternative shown, a small planted area within the plaza and at the base of the sports field light will be able to accept stormwater from the plaza. Because of the presence of the light pole, it is our professional judgement that is why this could be a rain garden, but should act in a similar way in that it will recharge the soil through a pervious material.

D. No activities or work, other than passive passage and resource area enhancement, are permitted within the first 25 feet of the Adjacent Upland Resource Area (measured horizontally from a resource area specified in Section 2, A(1) through (4). Except as part of Resource Area Enhancement or an Ecological Restoration Project, no vegetation may be disturbed, and leaf litter and natural debris shall remain in place. This No-Disturbance area shall at a minimum contain the same amount of area of undisturbed and natural vegetation from its pre-project state. A previously disturbed or previously developed 25-foot area shall be restored to a naturally vegetated state to the greatest extent practicable.

Under proposed conditions the impervious area within 25' of the wetland resource area has been reduced by 1,370 sf and the pavement is located the same distance or greater distance from the wetland resource area along with all the improvements as illustrated above.

E. No new structure(s) shall be placed in the first 50 feet of the Adjacent Upland Resource Area (measured horizontally from a resource area specified in Section 2, A(1) through (4)), unless approved by the Commission in evaluation of existing total impervious surface (see Section F. below) within the 50-foot area compared to the proposed impervious surface, and other considerations for the improvement of the resource area and climate change resiliency.

Under proposed conditions the impervious area within 50' of the wetland resource area has been reduced by 2,548 sf along with all the improvements as described above. The new stormwater BMP's and landscaping will aid in the climate resiliency.

F. Impervious surface.

(1) The total area of impervious surface within the Adjacent Upland Resource Area shall not increase over existing total area unless mitigation is provided and there is no impact on Resource Area values.

The existing impervious within the 25' and 50' buffer has been reduced but there is an overall increase within the 100' AURA zone however the measures described above provide a much healthier and stable resource area than under existing conditions.

(2) Impervious surfaces shall not intrude farther into the Adjacent Upland Resource Area than pre-project conditions unless the Commission in its sole discretion determines that the total area of impervious surface is significantly decreased or other mitigation is provided that serves to protect the resource area values. Impervious surface shall be kept as close as possible to the outer (upland) boundary of the Adjacent Upland Resource Area.

The proposed impervious area is not closer to the wetland resource area than in existing conditions and in most cases is 5'-7' farther away and only equal at the existing culvert headwall.

G. The following activities may not be conducted in any portion of the Adjacent Upland Resource Area: changing of oil, refueling, or damage to other vegetation not scheduled for removal.

None of the uses listed above are to be performed under the proposed design and all re-fueling of construction vehicles will take place outside the AURA in designated areas.