



## Arlington Conservation Commission

**Date:** Thursday, June 18, 2020  
**Time:** 7:30 PM  
**Location:** Conducted by Remote Participation

### Agenda

1. Administrative
  - a. In accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, the June 18, 2020 public meeting of the Arlington Conservation Commission shall be physically closed to the public to avoid group congregation. The meeting shall instead be held virtually using Zoom.

Topic: Conservation Commission Meeting  
Time: June 18, 2020 07:30 PM Eastern Time (US and Canada)

***Join Zoom Meeting***  
*<https://zoom.us/j/99917783740>*  
***Meeting ID: 999 1778 3740***  
***Meeting Password: 322904***

*One tap mobile*  
***Call-in: +1 646 876 9923***  
***+1 301 715 8592***  
***Meeting Number: 999 177 83740#***

Members of the public are strongly encouraged to send written comment regarding any of the hearings listed below to Conservation Agent Emily Sullivan at [esullivan@town.arlington.ma.us](mailto:esullivan@town.arlington.ma.us).

Please read Governor Baker's Executive Order Suspending Certain Provision of Open Meeting Law for more information regarding virtual public hearings and meetings: <https://www.mass.gov/doc/open-meeting-law-order-march-12-2020/download>

- b. Review draft 05/21/2020 minutes.
  - c. Review draft 06/04/2020 minutes.
  - d. Administrative update.
2. Discussion
  - a. Regulations Update: Section 24 Vegetation Removal and Replacement.



## Town of Arlington, Massachusetts

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### Review draft 05/21/2020 minutes

#### Summary:

Review draft 05/21/2020 minutes.

#### ATTACHMENTS:

Type	File Name	Description
▢ Minutes	DRAFT_05212020_Minutes_Conservation_Commission.pdf	Draft 05/21/2020 meeting minutes



## **Arlington Conservation Commission**

Date: May 21, 2020

Time: 7:30pm

Location: Conducted through Remote Participation using Zoom

### **Minutes**

Attendance: Commission Members Susan Chapnick (Chair), Pam Heidell, Dave Kaplan, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan. Members of the public included Steve Garvin, Lori Cowles, Kevin Sanders, Daniel Norman, Haipeng Zhu, and John Amato.

### **05/21/2020 Meeting Minutes**

The Commission discussed edits to the draft 05/07/2020 minutes. D. White motioned to approve the minutes as edited, N. Stevens seconded, all were in favor, motion approved.

### **Notice of Intent: 869 Massachusetts Avenue, Arlington High School MassDEP File #091-0323**

#### *Documents Reviewed:*

- 1) *Notice of Intent for work at Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, dated 05/07/2020*
- 2) *Existing Conditions Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, stamped by James P Horgan PLS#50302, dated 04/23/2020*
- 3) *Civil Engineering Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, stamped by Stephen R Garvin PE#42772, dated 05/07/2020*
- 4) *Sports Fields Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and JJA Sports LLC, stamped by John J Amato PE#34799, dated 05/07/2020*
- 5) *Stormwater Report for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects, Crosby/Schlessinger/Smallridge LLC, and Samiotes Consultants Inc, stamped by Stephen R Garvin PE#42772, dated 05/07/2020*

#### *Resource Areas:*

- 1) *Mill Brook*
- 2) *100-Foot Wetlands Buffer Zone*
- 3) *100-Foot Adjacent Upland Resource Area*

*4) 200-Foot Riverfront Area*  
*5) Bordering Land Subject to Flooding*

S. Garvin presented the project proposal. The proposed project includes razing the existing high school and constructing a new high school with associated new paved parking areas, landscaping, athletic fields, bathroom building, utilities, and a new stormwater management system in accordance with the Massachusetts DEP Stormwater Standards. The existing football stadium will remain as is and is not included within the scope of this project.

M. Gildesgame asked about the proposed stormwater quality units. S. Garvin stated the units were designed for pollution reduction, including Total Suspended Solid (TSS), phosphorous, and nitrate removal.

P. Heidell asked for more information on how this project impacts the Adjacent Upland Resource Area, including increase in impervious area.

N. Stevens asked for clarification regarding the proposed compensatory flood storage in the sports field design.

D. Kaplan asked about the proposed rain garden design and whether the existing football field and track would tie into the proposed stormwater system.

S. Chapnick asked about the chemical levels of Perfluoroalkyl and polyfluoroalkyl substances (PFAS) and Polycyclic aromatic hydrocarbons (PAHs) in the proposed artificial turf fields. N. Stevens clarified that the Commission is most concerned with the ecological impacts of the chemicals in artificial turf, and human health implications are under the purview of the Board of Health.

C. Garnett requested more information regarding the proposed rain gardens and landscape plans.

Through the hearing, the Commission requested the following additional items to be submitted as supplemental information:

- 1) Impervious area increase calculation in AURA/100-ft Buffer
- 2) Cornell modeling for stormwater report
- 3) Expanded riverfront area analysis to include 10.5.85 A-H standards from the Wetlands Protection Act
- 4) An alternative analysis for work in the AURA/100-ft Buffer
- 5) Specifications for the possible stormwater quality units that could be installed onsite
- 6) Send the stormwater quality specifications to the Engineering Division for review
- 7) Papers/information about artificial turf fields and impact on ecological health
- 8) New York's standards and specifications for the proposed artificial turf fields
- 9) A climate change resiliency narrative for the proposed artificial turf fields

- 10) The current artificial turf maintenance contract for AHS and whether maintenance includes chemical treatments
- 11) The site's Stormwater Pollution Prevention Plan (SWPPP)
- 12) More information about the proposed rain gardens
- 13) A summary of the site constraints in alternatives analysis
- 14) Landscape plans

D. White motioned to continue the hearing to the Commission's 06/04/2020 meeting, N. Stevens seconded, all were in favor, motion approved.

**Deliberation: Notice of Intent: 1297 Mass Ave  
MassDEP File #091-0321**

*Documents Reviewed:*

- 1) *Notice of Intent for work at 1297 Mass Ave, Arlington MA dated 03/03/2020*

*Resource Areas:*

- 1) *Mill Brook*
- 2) *100-Foot Wetlands Buffer Zone*
- 3) *100-Foot Adjacent Upland Resource Area*
- 4) *200-Foot Riverfront Area*

The Commission reviewed the draft permit for 1297 Mass Ave. The Commission discussed the special conditions of the draft permit, including:

- All plantings shall be native and be installed and maintained according to the standards of the American Association of Nurserymen (AAN). This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.
- All plantings planted through this project shall be maintained for three years. A survival rate of at least 75% must be maintained for the approved plantings. The Conservation Agent shall be contacted by the Property Owner to conduct annual inspections of the plantings sometime between September 15- November 1 2021, 2022, and 2023.
- The Applicant shall implement a weekly inspection for the grease container with a standardized inspection report through which the Commission will be informed of any future grease spills. The inspection form shall be the same form submitted to the Commission in the Supplement Materials Packet dated May 12, 2020. Each completed inspection forms shall be kept and maintained in a secure location by the Applicant at the Project Site and be available for the Commission's review; each inspection form shall be kept for three years from the date of the inspection. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.
- The Applicant shall maintain a spill kit onsite, conforming to the specifications submitted to the Commission in the Supplement Materials Packet dated May 12, 2020. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

N. Stevens motioned to approve the project for 1297 Mass Avenue under the Wetlands Protection Act and Arlington Bylaw for Wetlands Protection with the special conditions discussed by the Commission, D. Kaplan seconded, all were in favor, motion approved.

**Deliberation: Notice of Intent: 105 Lafayette Street  
MassDEP File #091-0322**

*Documents Reviewed:*

- 1) *Notice of Intent for work at 105 Lafayette Street, Arlington MA prepared by LEC Environmental, dated 04/20/2020*
- 2) *105 Lafayette Street NOI Planset, prepared by Gala Simon Associates Inc, revised 03/26/2020*

*Resource Areas:*

- 1) *Alewife Brook*
- 2) *100-Foot Wetlands Buffer Zone*
- 3) *100-Foot Adjacent Upland Resource Area*
- 4) *200-Foot Riverfront Area*
- 5) *Bordering Land Subject to Flooding*

The Commission reviewed the draft permit for 105 Lafayette Street. The Commission discussed the special conditions of the draft permit, including:

- The 1% Annual Flood Chance Hazard Floodplain boundary shall be staked prior to construction and the pre-construction meeting with the Conservation Agent. The Conservation Agent shall review the staking during the pre-construction meeting. The floodplain boundary stakes shall remain intact for the entire duration of the project.
- The 12 native shrubs proposed in this project shall be planted anywhere on the property, but not on adjacent publicly owned land.
- The project shall include the replacement of the existing topsoil with new topsoil to grade, as a mitigation strategy for controlling invasive plants that are currently on site. Invasives removed as part of this project shall be monitored and controlled for three years. The Conservation Agent shall be contacted by the Property Owner to conduct annual inspections of the invasives management sometime between September 15- November 1 2021, 2022, and 2023.
- All plantings shall be native and be installed and maintained according to the standards of the American Association of Nurserymen (AAN). This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.
- All plantings planted through this project shall be maintained for three years. A survival rate of at least 75% must be maintained for the approved plantings. The Conservation Agent shall be contacted by the Property Owner to conduct annual inspections of the plantings sometime between September 15- November 1 2021, 2022, and 2023.
- The engineer of the approved stormwater and pervious surface plans shall inspect the porous pavement driveway and walkway during the following stages

of construction: 1) when the areas have been excavated, and 2) when the base materials have been installed and send report to the Commission.

- The fence on the property line adjacent to the publicly-owned land will be removed and any new fencing shall only be on the Applicant's property.

N. Stevens motioned to approve the project for 105 Lafayette Street under the Wetlands Protection Act and Arlington Bylaw for Wetlands Protection with the special conditions discussed by the Commission, P. Heidell seconded, all were in favor, motion approved.

**Regulatory Update: Administrative Review Section**

The Commission reviewed and discussed the Administrative Review Section, a new section, for the Arlington Regulations for Wetlands Protection.

D. White motioned to close the Commission meeting, N. Stevens seconded, all were in favor, motioned approved.

Meeting adjourned at 10:30pm.



## Town of Arlington, Massachusetts

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### Review draft 06/04/2020 minutes

#### Summary:

Review draft 06/04/2020 minutes.

#### ATTACHMENTS:

Type	File Name	Description
▢ Minutes	DRAFT_06042020_Minutes_Conservation_Commission.pdf	Draft 06/04/2020 meeting minutes





## **Arlington Conservation Commission**

Date: June 04, 2020

Time: 7:30pm

Location: Conducted through Remote Participation using Zoom

### **Minutes**

Attendance: Commission Members Susan Chapnick (Chair), Dave Kaplan, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan. Members of the public included Steve Garvin, Lori Cowles, Kevin Sanders, John Amato, Daniel Norman, Haipeng Zhu, Henri Schuette, and Dennis Hickey. Commissioner Pam Heidell was absent.

### **Administrative Update**

E. Sullivan updated the Commission that the Zoning Board of Appeals plans to continue the Thorndike Place 40B application hearing to its July meeting. E. Sullivan also updated the Commission that due to financial constraints, the Town is looking to cut funds across the Town. As such, the Finance Committee is proposing to reduce the \$55,000 FY2021 allocation approved for the Water Bodies Account to \$45,000. E. Sullivan confirmed that this reduction would not prevent the Water Bodies Working Group from conducting the planned treatments of water bodies in 2020, but would reduce some of the account's reserve that has built up over the years.

### **Working Session: Eagle Scout Project at Mt. Gilboa**

H. Schuette, Eagle Scout, presented a project proposal to restore two sections of trail in Mt. Gilboa that have eroded due to human use and washout. H. Schuette proposed restoring the trail sections with native plantings, check dams, and water bars.

D. White expressed support of the project, and emphasized that this project should prioritize the durability of the restoration efforts and materials.

N. Stevens recommended looking at the trail restoration work at Window on the Mystic. H. Schuette stated he was involved in that scout project and so is familiar with the work.

M. Gildesgame asked how long this project would take. H. Schuette estimated one day of preparation work and two-three days of onsite work.

S. Chapnick asked what type of equipment is being proposed to do the work. H. Schuette confirmed the work would be performed by hand, with no machines, using tools like rock bars and maddixes.

D. White asked what the budget for this project is and where funding is coming from. H. Schuette estimated that the materials would cost \$200. D. White stated that the Commission has funds it can allocate to this project if requested. H. Schuette stated he will put together a formal cost estimate and submit it to the Commission for review and ask for support. D. Kaplan supported D. White's statement that the Commission can allocate funds to the project.

D. Hickey, H. Schuette's scout leader, stated he supports this project and appreciates the Commission's support and review.

E. Sullivan requested that H. Schuette submit a more detailed project proposal with cost estimate and request for funds.

**Hearing: Request for Certificate of Compliance, 12 Clyde Terrace  
MassDEP File #091-0274**

N. Stevens motioned to continue the hearing to the Commission's 06/18/2020 meeting at the request of the Applicant's Representative, D. White seconded, all were in favor, motion approved.

**Continued Hearing: Notice of Intent: 869 Mass Avenue, Arlington High School  
MassDEP File #091-0323**

*Documents Reviewed:*

- 1) *Notice of Intent for work at Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, dated 05/07/2020*
- 2) *Existing Conditions Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, stamped by James P Horgan PLS#50302, dated 04/23/2020*
- 3) *Civil Engineering Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and Samiotes Consultants Inc, stamped by Stephen R Garvin PE#42772, dated 05/07/2020*
- 4) *Sports Fields Plan Set for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects and JJA Sports LLC, stamped by John J Amato PE#34799, dated 05/07/2020*
- 5) *Stormwater Report for Arlington High School, 869 Massachusetts Avenue, Arlington MA prepared by HMFH Architects, Crosby/Schlessinger/Smallridge LLC, and Samiotes Consultants Inc, stamped by Stephen R Garvin PE#42772, dated 05/07/2020*
- 6) *Supplemental Materials submitted for the 06/04/2020 meeting*

*Resource Areas:*

- 1) *Mill Brook*
- 2) *100-Foot Wetlands Buffer Zone*
- 3) *100-Foot Adjacent Upland Resource Area*
- 4) *200-Foot Riverfront Area*
- 5) *Bordering Land Subject to Flooding*

Per the Commission's 05/27/2020 meeting, the Representatives for the AHS NOI reviewed the supplemental materials requested by the Commission, including:

- 1) Impervious area increase calculation in AURA/100-ft Buffer
- 2) Cornell modeling for stormwater report
- 3) Expanded riverfront area analysis to include 10.5.85 A-H standards from the Wetlands Protection Act
- 4) An alternative analysis for work in the AURA/100-ft Buffer
- 5) Specifications for the possible stormwater quality units that could be installed onsite
- 6) Send the stormwater quality specifications to the Engineering Division for review
- 7) Papers/information about artificial turf fields and impact on ecological health
- 8) New York's standards and specifications for the proposed artificial turf fields
- 9) A climate change resiliency narrative for the proposed artificial turf fields
- 10) The current artificial turf maintenance contract for AHS and whether maintenance includes chemical treatments
- 11) The site's Stormwater Pollution Prevention Plan (SWPPP)
- 12) More information about the proposed rain gardens
- 13) A summary of the site constraints in alternatives analysis
- 14) Landscape plans

S. Garvin presented the project proposal and supplemental information.

J. Amato stated that the project recommends that the artificial turf fields are not chemically treated for maintenance.

S. Garvin stated that the License Site Professional, McPhail, does not recommend infiltrating the rain gardens due to the pre-existing contamination onsite.

S. Chapnick asked, on P. Heidell's behalf, about the maintenance of landscaped areas onsite and whether fertilizers would be used. S. Garvin stated that the Commission could condition the use of fertilizers or condition that no fertilizers be used. The Department of Public Works will be maintaining the landscaped areas.

S. Chapnick asked for clarity regarding the levels of lead and zinc in the artificial turfs' infill material and blade/grass material. J. Amato stated that the amounts listed in the supplemental information is reflective of both the infill and blade material (e.g. 100ppm for lead). S. Chapnick commented that the climate change resilience summary for the artificial turf field is focused on human health impacts, and not ecological health impacts. Human health impacts are under the purview of the Board of Health, while ecological health impacts are under the purview of the Conservation Commission.

C. Tirone asked what the disposal process is for artificial turf. J. Amato stated it is disposed as waste-to-energy for cement manufacturers. C. Tirone also asked whether the curbing along the parking areas could have breaks in it to promote infiltration. C.

Tirone recommended that the Representative look into the feasibility of onsite stormwater capture for site landscaping.

Through the hearing, the Commission requested the following additional items to be submitted as supplemental information:

- 1) Construction O&M for stormwater system
- 2) PAHs report for artificial turf fields
- 3) Revised climate change summary for artificial turf fields for ecological health, not human health considerations
- 4) O&M plan for artificial turf field, including waste-to-energy disposal for concrete manufacturing
- 5) Urban heat island analysis for artificial turf fields
- 6) Determination of whether parking island curbing in parking lots can be removed for stormwater management
- 7) Determination of whether a system for onsite water capture can be implemented so stormwater can be used for landscaping

D. Kaplan motioned to continue the hearing to the Commission's 06/18/2020 meeting, N. Stevens seconded, all were in favor, motion approved.

**Regulatory Update: Vegetation Removal and Replacement Section**

The Commission agreed to postpone this regulatory review to its 06/18/2020 meeting.

D. White motioned to close the Commission meeting, D. Kaplan seconded, all were in favor, motioned approved.

Meeting adjourned at 10:00pm.



## Town of Arlington, Massachusetts

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### Regulation Update

#### Summary:

Regulations Update: Section 24 Vegetation Removal and Replacement.

#### ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	Vegetation_Section_24__Revised_CG_SC_CT_DK.pdf	Section 24: Vegetation Removal and Replacement

**Section 24 - Vegetation Removal and Replacement**

A. Findings: Vegetation in a resource area protected by the Bylaw is significant for wildlife, wildlife habitat and water quality. In addition, vegetation controls flood and storm damage, and trees provide carbon sequestration and shade to offset heat-island effects, thereby mitigating potential impacts of climate change when their replacement is equal to or greater than the loss. Vegetation provides food, shelter, socialization?, shade, water detention/attenuation, sediment control, bank stabilization, biodiversity, pollutant uptake, water evapotranspiration of water, aesthetics, and atmospheric purification. In addition, plant size ordinarily is proportional to habitat value; i.e., large wooded trees are of greatest habitat value, followed by bushes, and then ground cover. Thus, an adequate quantity of vegetation must be maintained so areas subject to protection under this that resource areas protected by the Bylaw can thrive. provide protection form adverse effects on the characteristics and functions of the resource area provide the resource area values protected by the Bylaw, including, but not limited to: flood control, storm damage prevention, pollution abatement, wildlife protection, aesthetic value, and recreation.

**Comment [MOU1]:** I do not instand what is meant by this word. It needs clarification or should be taken out.

**Comment [MOU2]:** Rentention or dention - not sure what is meant by this.

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B. No vegetation in a resource area protected by the Bylaw shall be damaged, extensively pruned, or removed without written approval by the Commission and in-kind replacement. Extensive pruning is defined as removal of more than 20% or more of the crown and/or limbs, limbs or growth?. For extensive pruning or removal of vegetation because of an Imminent Risk to Public Health and Safety, in-kind replacement shall be to the extent practicable as determined by the Commission (See Section 9 of these Regulations for Emergency Certification).

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**Comment [MOU3]:** Is this the crown or the height of the tree, its mass? needs clarification. I am not sure what is intended here.

**Comment [TC4]:** Resident of Arlington are allowed to cut 20% of each tree or shrub canopies without notification or written approval.

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C. "In-kind replacement" shall refer to a combination of species type and surface area as defined measured by the affected plant or plants' the area delineated by the drip line of the affected plant(s). "In-kind" means the same type and quantity of plant species that was removed, extensively pruned, or damaged, unless compelling evidence is presented in writing that explains why the resource area values under the Bylaw are promoted through an alternative proposal, and planted within the same resource area or another resource area located in close proximity on the project site. Notwithstanding the foregoing, only native, non-invasive plant species shall be planted as replacements.

**Comment [MOU5]:** First sentence in C is awkwardly written and should be rewritten. I am not sure how.

D. The criteria for removal of vegetation follow. In all instances, the reasons for removal must be expressed in writing before executing the removal. In administering this standard, the Commission shall consider species selection, location, and timing of the plantings. Vegetation removal criteria are as follows. The criteria for removal of vegetation follow.

**Comment [MOU6]:** Rewrite - In all instances, the reasons for the removal of vegetation must be expressed in writing before the vegetation can be removed. In administering this standard, the Commission shall consider (not sure what is meant here) ..... The criteria for removal of vegetation is as follows:

(1) Health of the Vegetation

Vegetation in a state of irreversible decay, or undesirable vegetation present as a result of unintentional lack of maintenance may be offered as a reason(s) for removal.

(2) Bank or Slope Stabilization

A bank or slope stabilization plan requires the restructuring of soils occupied by the vegetation vegetation to be removed.

(3) Invasive Species

The vegetation being removed is an aggressive, invasive, or non-native species as professionally confirmed ~~by a wetlands scientist~~ or as listed on a wetlands plant list acceptable to the Commission, such as, but not limited to that published by the United States Fish and Wildlife Service.

(4) Ecological Restoration

The vegetation is being removed as part of a project whose primary purpose is to restore or otherwise improve the natural capacity of a resource area to protect and sustain the interests of the Bylaw; also called Resource Area Enhancement.

(5) Vegetation Replacement

The vegetation ~~can be~~ being removed and replaced elsewhere on the project site or within the same resource area, only if the Commission determines that such removal and replacement does not decrease the resource area's contribution to the resource area values protected by the Bylaw.

(6) Imminent Risk to Public Health and Safety

The vegetation is an imminent risk to public health or safety or property as confirmed in writing and submitted to the Commission by the Arlington Tree Warden, Fire Department Representative, Public Safety Officer, or a certified arborist.

E. Application for Removal. For all projects, the application for vegetation removal shall be submitted as part of the application for permit or Notice of Intent as described by the Bylaw and these regulations. At a minimum, the application will include:

(1) Narrative

The narrative shall describe the existing conditions, the proposed planting plan, the list of existing and proposed species, the size of existing and proposed species, and number of plants before and after the revegetation event. The narrative shall also provide the rationale for the removal, by addressing the criteria D1 through D6 above, and discuss the proposed maintenance plan (see (7) below).

(2) Affirmation of the Revegetation Activities

All plans for revegetation must be accompanied by written testimony and scaled diagram from a certified arborist or wetland scientist or landscape architect. At a minimum, this document must include the following information:

- (a) Is the vegetation removal necessary? (See D. above)
- (b) How much surface area of the vegetation will be removed (ft<sup>2</sup>-based on drip line)?
- (c) How many individual plants will be removed by species; *i.e.*, is the species list submitted with the NOI correct?

(3) Planting Plan

The proposed planting plan must be drawn to scale and identify properly the resource area and buffer zone and the project site. It must include the locations of each replacement species and the number of each species proposed for planting (in table form).

The planting plan and procedures shall comply with the American Standards for Nurserymen, Inc. or equivalent. It must also include the location of the erosion control devices used during the restoration event. A brief narrative must accompany this planting plan describing the storage location of all motorized equipment.

The planting plan shall show the estimated tree canopies after 15 years of growth, the specific names, sizes and locations of trees to be planted, and the total area of square feet of the area shaded by tree canopies. In determining the shaded area, measure the shaded area assuming that the shaded area is only that area directly under the drip line.

(4) Existing Species List

Each species existing before the restoration shall be listed in terms of area of coverage (ft<sup>2</sup>) and number of individual plants and either height or dbh as specified in the tables below.

(5) Replacement Species List

The replacement of vegetation shall be according to the following table (derived from the American Standards for Nurserymen, Inc.), unless the Applicant proves that the amount of replacement vegetation will not survive or contribute in the long-term to resource area values. A rationale for the species and size choice must be provided if not an "in-kind replacement" ~~the replacement is not "in-kind"~~.

Native species are ~~the preferred~~ required; invasive species are not allowed.

Replacement plant materials shall conform to the requirements described in the latest edition of American Standard for Nursery Stock, which is published by the American Association of Nurseryman ("AAN").

Replacement size shall be three inches in diameter at six inches in height above natural grade, most common available substantial size, or as approved by the Commission.

Vegetation replacement is not considered successful until the replacement plants have survived three full growing seasons.

For extensive pruning or removal of vegetation because of an Imminent Risk to Public Health and Safety, in-kind replacement shall be to the extent practicable as determined by the Commission (See Section 9 of these Regulations for Emergency Certification).

(a) Tree:

Existing	Replacement
Trunk (dbh)	Quantity
<u>Sapling</u>	<u>0*</u>
<u>1 to 3 inches</u>	<u>2</u>
<u>≥ 3 to 8 inches</u>	<u>43</u>
<u>≥ 8 to 20 inches</u>	<u>24</u>
<u>&gt; 20 inches</u>	<u>3</u> <u>Discuss with Commission</u>

\*may require replacement at discretion of Commission  
dbh = diameter at breast height

**Comment [MOU7]:** This needs to be rewritten. It is very vague. But not sure exactly how to rewrite it.

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**Comment [MOU8]:** Add a sentence or two explaining the purpose of the chart. Also indicate if there are any exceptions to these quantities.

**Comment [SC9]:** I think replacement should be a minimum of 2:1 because of the benefits lost for the tree being removed that will not be replicated for many years until the replacement tree matures – see the tool "trees"

**Comment [DK10]:** agreed





(b) For all trees:

1. If a plant is well grown with a single stem, well-shaped and bushy, and has sufficient well-spaced side branches to give it weight and good bud qualities, it is an acceptable plant.
2. On multi-stem trees, height shall be defined as the measurement taken from the ground level to the average uppermost point of growth of the plant.
3. All replacement plants shall have ball sizes which are of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the fully recovery of the plant once planted.
4. Sapling trees shall include deciduous trees with a dbh of 1 inch and less; evergreens of 2 feet or less and shall be replaced at the discretion of the Commission so as to reach an equivalent area of coverage and soil retention.

(c) For Shrubs:

The replacement of shrubs (bushes) shall be with bushes and shrubs of equivalent size. For bushes, the replacement must be well grown with a single stem, well-shaped and bushy, and have sufficient well-spaced side branches to give it weight and good bud quality as per the American Association of Nurserymen standards.

(6) Rationale for Removal - Describe why the interests of wetlands protection are advanced by the revegetation plan.

(7) Maintenance Plan - Vegetation replacement is not considered successful until the replacement plants have survived three full growing seasons. The maintenance plan shall describe how the restoration will be evaluated annually for three years and reported to the Commission. The Commission reserves the right to require a revised replanting plan, or additional plantings on an annual basis in the event that the revegetation plants decay or die.

F. The Commission may require one or more of the following measures to protect vegetation during work:

- (1) Tree protection fencing – Prior to commencing work, four (4) foot-high sections of snow fencing shall be installed and secured with wooden stakes (2" x 4" or 2" x 3") or 6-foot steel channel posts so as to create an enclosure at the dripline of tree(s) or other distance as the site conditions allow to be protected. Such fencing shall be securely erected, be vertically plumb and be maintained for the duration of the project and shall protect individual trees or groups of trees.
- (2) Tree protection blanket – “BarkSavers” or similar armored blankets shall be installed and maintained according to product specifications.
- (3) No existing trees shall be used for crane stay, guys or other fastening.
- (4) Vehicles shall not be parked below the canopy of any existing tree or where damage may result to existing trees or tree roots.
- (5) Construction materials shall not be stored beneath existing trees.
- (6) Following completion of work, have a certified arborist monitor the health of trees on site for possible damage and take measures to repair damage.

- (7) Prior to commencing work, prepare and submission of a tree protection plan showing summarizing ~~of~~ all trees on site (including dbh, species, extent of canopy, roots and health) and specifying whether each tree shall be saved or lost.

G. The Commission may require the placement of permanent bounds (e.g., granite or metal) to demarcate all or part of a resource area or vegetation mitigation area.

H. The requirements of this section shall be met commensurate with the nature, scope, type, and cost of the proposed project or activity.

Natural surfaces improve the capacity of the Resource Area to protect and sustain areas subject to protection under this bylaw. They provide protection from adverse effects on the characteristics and functions protected and minimize disturbance through their natural features. Natural surfaces contribute to cool air, water infiltration, and filtering. They remove carbon dioxide from our atmosphere. Artificial turf can be associated with urban heat island effects, climate impacts from CO2, hazardous waste, heat stress, migration of crumb rubber from the field, and exposure to PAH's. In determining whether to exercise its discretion to approve synthetic turf fields, or require some limits to be placed on its total area coverage, the Commission shall consider the following factors: The magnitude of the alteration and the significance of the project to the resource area, the availability of reasonable alternatives to the proposed activity, and the extent to which adverse impacts are minimized and to the extent to which mitigation measures including replication or restoration are provided

Should we add a discussion about replacement of Natural Turf fields with Artificial Turf fields here or in Climate Change section?

**Comment [TC11]:** Draft Artificial Turf Field section

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