

Updated June 18, 2024
January 31, 2024

WETLAND REPLICATION PLAN
Off Veterans Memorial Drive

Map 259 Parcel 007-002
Franklin, MA

PURPOSE:
NOI Supportive Document

PREPARED FOR:
Guerriere & Halnon
55 West Central Street
Franklin, MA 02038

Table of Contents:

- I. Existing Isolated Vegetated Wetland**
- II. Wetland Replication Area**
 - A. Location**
 - B. General Installation Procedure**
 - C. Planting Plan**
 - D. Conclusions**

I. EXISTING CONDITIONS

The subject parcel is a forested site located off Veteran Memorial Drive and Irondequoit Rd in Franklin MA (Map 259 Parcel 007-002). The lot is approximately 16.89 acres and consists of an oak/white pine upland forested area with three Isolated Vegetated Wetlands (IVWs) two IVWs on site and one located adjacent to the site. The two larger IVWs located on site (flagged with series GC1-26 and GC100-126) are located along the western property boundary and are not proposed to be impacted. The smaller IVW (flagged with series I 1-11) is located at the end of Irondequoit Rd along the northern property line which is to serve as the site access. All resources on site were confirmed with an ORAD issued by the Franklin Conservation Commission on September 7, 2023. The three IVWs are not classified as Isolated Land Subject to Flooding resources and are jurisdictional under the local bylaw only.

Due to the location of the IVW at the end of Irondequoit Rd, impact to this wetland is unavoidable. The proposed roadway is designed to be the minimum width practicable so to minimize the potential impact. The impacted IVW will be replicated at a 2:1 ratio between the two other IVWs along the western property line. To ensure in-kind replication, the native tree and shrub species found within the IVW (red maple trees, sweet pepper bush and wetland ferns/seed mix) are proposed to be planted and seeded within the replication area.

II. WETLAND REPLICATION AREA

A. LOCATION:

The proposed replication area measures 1,960 SF and is located between the two larger IVWs along the western property line (see attached figure). The proposed 1,960 SF wetland replication area allows for a 2:1 ratio of the 980 sf of IVW wetland fill; meeting all local performance standards. Erosion controls will be installed along the limit of work to ensure adequate protection to the adjacent wetland resource area.

The location of the replication was selected for the following reasons:

- The area can be easily accessed via the uplands located to the east of the wetland areas
- The replication area directly abuts two other IVWs with similar vegetation and soil conditions as the impact area.

- This area within the forest canopy was desirable for wetland replication due to the shade from surrounding large trees which will keep the wetland environment at a natural, cool temperature.
- The nearby topography of the uplands is a slight incline from the wetlands. Therefore, only 1-2 feet of grading will need to occur to reach desirable depths necessary for hydric soil conditions.
- This location allows the replicated wetland to fulfill more functions and values on a greater scale than the existing IVW, particularly in the sense of flood control due to its greater size and mild slope. The replication area will provide protection of the following benefits: public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, and plant or wildlife habitat.

B. GENERAL INSTALLATION PROCEDURES:

Supervision: All work within the replication area shall be supervised by a qualified wetland scientist with a minimum of five years' experience. The supervisor shall submit monitoring reports to the Conservation Commission as described below. Reports shall contain details of all work performed and photographs of completed conditions.

Timing: Work shall take place ideally when the wetland impact area is not saturated. If necessary, a dewatering plan shall be approved by the Conservation Commission. The planting of the replication area should be accomplished during the spring or fall growing seasons (between April and June or between September and November). The replication area grading is advised not to commence unless the contractor can guarantee completion of the work within the replication area within the same season.

Step 1: Stake Limits of Work, Confirm Wetland Flags in Place & Install ECB – At Replication Area

Staking out limits of work and confirmation of wetland flags are planned for the replication areas. Erosion control barriers shall then be installed in the form of 12-in composite filter tube socks placed at the limit of work for the replication area. These will remain in place and be maintained until the areas are completely stabilized and then may be removed after approval of the Conservation Commission. Wetland scientist shall have authority to require additional erosion control measures if deemed necessary.

Step 2: Identify Shrubs, Woody Debris, and Boulders to be re-used in Replication Area

A Goddard Consulting wetland scientist identified and flagged (with blue ribbon marked "save") 5 sweet pepper bush shrubs within the wetland impact area which will be used as additional plantings in the replacement area. Several trees were also flagged in a similar manner within the replacement area which shall remain on hummocks, which include: Two 4-6" dbh red maples, three 10-14" dbh red maples, one 4 trunk red maple and one 6-10" dbh tupelo. Sweet pepperbush shrubs within the replacement area will be dug up with special consideration to keep root balls intact with the hope of re-using them again within the replacement area after excavation occurs.

Step 3: Excavation of Replication Area

An excavator or backhoe shall remove existing soils up to the edge of the proposed replication area boundary, to a depth at which redoximorphic features become visible in the C-horizon at the soil surface (20 inches). Final grading will be at the same elevation as the adjacent IVWs areas to reach favorable hydrological conditions.

Step 4: Final Grading of Replication Area

Upon removal of existing soils down to the proper depth (as determined by the wetland scientist on site during the removal process), if soils are not sufficient, supplemental soils shall be imported, sourced from composted organic materials, and shall consist of a 50:50 mix of loam and organic material with an organic content between 12 and 20%. Topsoil shall be placed within the replication area to a depth 6-12" and even with the surrounding proposed elevation on design plan, to be determined by the supervising wetland scientist. Final grade shall be confirmed to be proper by the wetland scientist prior to plantings. Placement of soil shall be such that no equipment drives over or compacts placed soils. Final grading will result in micro relief of pits and mounds. Topography will create areas that pool and flood during heavy rain events and also see water near the surface during the wet season. Saved trees will remain on hummocks

Step 5: Place Woody Debris and Boulders

If Woody debris, snags, and moss-covered boulders currently lay on site in the proposed replication area, these shall be preserved and randomly placed throughout the replication area to provide cover for wildlife.

Step 6: Planting

Precise citing of plants may be determined by the wetland scientist in the field prior to installation. All plantings (reference the planting list from section C) shall be distributed throughout the area; trees spaced at 10-15' on center; shrubs spaced at 6-12' on center. Shrubs shall be planted in clumps of 3 the same species. As a rule, plants of the same species will be placed in groupings that more closely mimic natural conditions. Trees shall be planted on mounds and shrubs in depressions. Stockpiled shrubs will be placed first. All other plantings will be removed from burlap sacks, wire cages and plastic containers prior to planting. Each plant will have its roots loosened prior to planting to encourage root growth away from the planting bulb. Leaf litter shall be spread throughout area if available. Wetland seed mix shall be scattered evenly by hand throughout the replication area. Once all work is complete an erosion control barrier will be installed to enclose the replication area on the access side of the replication area.

Step 7: Erosion Controls Removal

Once the replication area is stable, a request shall be submitted to the Conservation Commission to remove the erosion controls around the wetland replication areas. Upon approval of stabilization, erosion controls shall be removed promptly, and any significant disturbance shall be seeded with a wetland seed mix as specified in section C.

Step 8: Replication Monitoring

a. **Seasonal monitoring reports** shall be prepared for the replication areas by a qualified wetland scientist for a period of 2 additional years after installation or every year until a COC is issued by the Franklin Conservation Commission. This monitoring program will consist of early summer and early fall inspections and will include photographs and details about the vitality of the replication areas. Monitoring reports shall be submitted to the Commission by December 15th of each year. Monitoring reports shall describe, using narratives, plans, and color photographs, the physical characteristics of the replication areas with respect to stability, soil characteristics (i.e. horizons, depths, texture, percent gravel and rock, organic matter, Munsell hue, value and chroma, consistence and evidence of hydrologic influence), survival of vegetation and plant mortality, aerial extent and distribution, species diversity and vertical stratification (i.e. herb, shrub and tree layers). Invasive species will be documented if present, monitored and removed.

b. **At least 75% of the surface area** of the replication areas shall be re-established with wetland plant species within two growing seasons. If the replication areas does not meet the 75% re-vegetation requirement by the end of the second growing season (after installation), the Applicant shall submit a remediation plan to the Commission for approval that will achieve replication goals, under the supervision of a Wetland Specialist. This plan must include an analysis of why the areas have not successfully re-vegetated and how the Applicant intends to resolve the problem.

C. PLANTING LIST:

Proposed Plantings for Replication Area 1 (1960 s.f.)

Common Name	Scientific Name	Number	Size
Trees (n= 15)*			
Red Maple (FAC)	<i>Acer rubrum</i>	4	4-5'
Shrubs (n=33)*			
Highbush Blueberry (FACW)	<i>Vaccinium corymbosum</i>	8	3 gal. pot
Sweet Pepperbush (FAC)	<i>Clethra alnifolia</i>	7	3 gal. pot
Seed Mix			
New England Wetland Plants WETMIX or equivalent*	Replication area	1.5	1 lbs

*Planting species and seed mixes may be substituted with Conservation Commission approval with similar native species with the same wetland indicator status if certain species are unavailable.

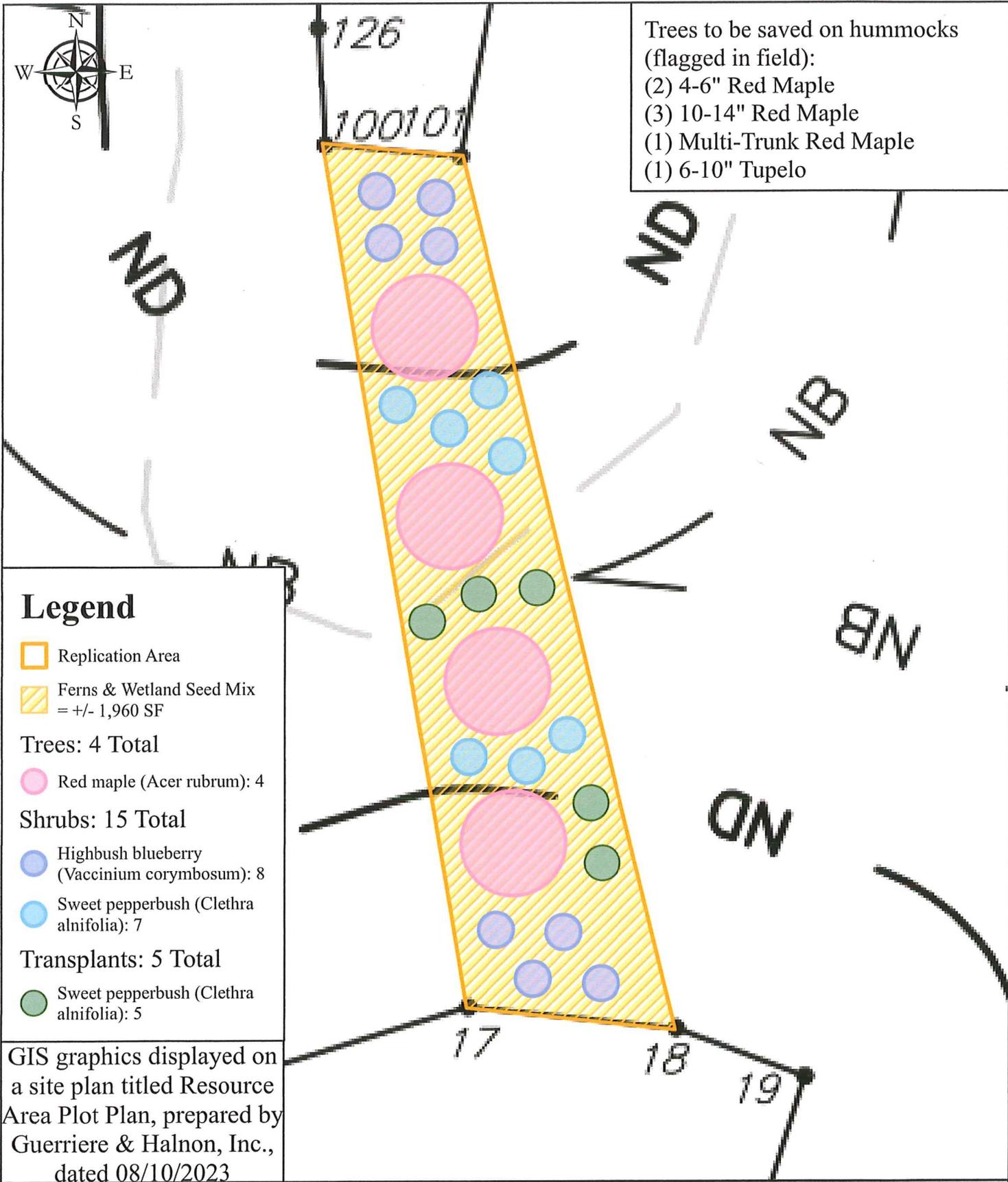
D. CONCLUSIONS

The IVW impact area will be mitigated at a ratio of 2:1 with the final replication area. All local, state and federal statutory interests and performance standards have been protected and will be met by the project, as described above. The wetland replication plan has been designed to replicate the environmental attributes of the Isolated Wetland as closely as possible and to meet or exceed the benefits to local wildlife. The native trees and shrubs found growing within the IVW are proposed within the replication area for even greater species diversity. Stockpiled shrubs and soils will be transported and used within the replication area.

Sincerely,
Goddard Consulting, LLC.

A handwritten signature in cursive script that reads "Nicole Hayes".

Nicole Hayes, PWS
Senior Wetland Scientist



Trees to be saved on hummocks (flagged in field):
 (2) 4-6" Red Maple
 (3) 10-14" Red Maple
 (1) Multi-Trunk Red Maple
 (1) 6-10" Tupelo

Legend

- Replication Area
- Ferns & Wetland Seed Mix = +/- 1,960 SF
- Trees: 4 Total**
- Red maple (*Acer rubrum*): 4
- Shrubs: 15 Total**
- Highbush blueberry (*Vaccinium corymbosum*): 8
- Sweet pepperbush (*Clethra alnifolia*): 7
- Transplants: 5 Total**
- Sweet pepperbush (*Clethra alnifolia*): 5

GIS graphics displayed on a site plan titled Resource Area Plot Plan, prepared by Guerriere & Halnon, Inc., dated 08/10/2023

Date: 06/18/2024
 GC Job Number: 101-078

Wetland Replication Plan

0 7.5 15 Feet

1" = 15'



Veterans Memorial Drive
 Franklin, MA 02038

Property ID: 259-007-002

Attachment 1.

Wetland soil profiles and hydric indicator elevations

Wetland Impact Area Soil Profile

Soil Depth	Soil Color	Soil Material	Mottles and percentages	Start of Ground Water Movement Elevation
0-1"	Leaf debris			
1-10"	10YR2/1	Organic muck	No	
10-30"	10YR6/1	Silty loam	10YR5/6 mottles at 20%	10-inches is the start of ground water movement

Other indicators of Hydrology present:

Soil surface has water staining

Soil is saturated at 1 inch

No free water was observed within 30-inches of test hole within 30 minutes

Mottles present at 10-inches are the start of ground water movement within this area

Wetland Adjacent to Replacement Area

Soil Depth	Soil Color	Soil Material	Mottles and percentages	Start of Ground Water Movement Elevation
0-1"	Leaf debris			
1-6"	10YR2/1	Organic muck	No	
6-30"	10YR6/1	Silty loam	10YR5/6 mottles at 25%	6-inches is the start of ground water movement

Other indicators of Hydrology present:

Soil surface has water staining

Soil is saturated at 1 inch

No free water was observed within 30-inches of test hole within 30 minutes

Mottles present at 6-inches are the start of ground water movement within this area

Wetland Replacement Area

Soil Depth	Soil Color	Soil Material	Mottles and percentages	Start of Ground Water Movement Elevation
0-2"	Leaf debris			
2-4"	10YR2/2	Silty loam	No	
4-20"	10YR5/4	Sandy loam	No	
20-30"	10YR6/1	Loamy sand	10YR5/6 at 30%	20-inches is the start of ground water movement

Other indicators of Hydrology present:

Soil surface has water staining

Soil is saturated at 2 inches

No free water was observed within 30-inches of test hole within 30 minutes

Mottles present at 20-inches are the start of ground water movement within this area

The wetland replacement area needs to be excavated down to approximately 20-inches to achieve wetland hydrology in this area.