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October 8, 2020

David Koonce, Agent
Lancaster Conservation Commission
Prescott Building
701 Main Street, Suite 4
Lancaster, MA 01523 via email (dkoonce@lancasterma.net) & 1st class mail

Re: 97 Woodland Meadow Drive – Evaluation and Proposed Restoration Measures

Dear Mr. Koonce and Commission Members:

At the request of Brian Deciero of 97 Woodland Meadow Drive, and in response to the Commission's 8/13/2020 letter to Mr. Deciero, I have conducted an evaluation and wetland delineation at the 97 Woodland Meadow Drive property, and prepared for the Commission's review proposed restoration measures at the site. Mr. Deciero has also retained Foresite Engineering Assoc. of Stow, MA ("Foresite") to survey locate wetland flags and the limit of clearing, as described below. Plan completion is pending and the plan will be provided as soon as it is available.

Wetland Resources: As outlined on the attached September 30, 2020 Wetland Resource Evaluation Report by EcoTec, the site contains an area of Bordering Vegetated Wetland ("BVW") which I delineated on September 2, 2020. The Foresite Site Plan (to be provided when available) provides the locations of those BVW boundary flags as well as the limit of clearing (described below).

Work Completed: Mr. Deciero retained a contractor to cut several trees on the site, however the work actually completed included the clearing and grubbing of an approximately 10,000 square foot ("sf") area of the BVW (on Foresite plan, when available). In addition, within the western portion of the work zone, an area of approximately 2,000 sf was covered with up to 12 inches of wood chips, primarily in the BVW. Mr. Deciero reports that cut vegetation was removed from the site but that no soil was excavated or removed. He reports also that the only material brought onto the site was 5 truckloads of topsoil. My field evaluation indicates that this soil was apparently high in organic content and with minor exception, topsoil remains throughout the disturbed area. My evaluation indicates that significant filling or excavation did not occur.

A municipal storm drain discharges roadway runoff onto the site through a 12-inch drain pipe (see plan). This stormwater discharge is presumably subject to brief intense flows during large storm events and has created a small channel through the BVW. I suspect that such a channel existed prior to the recent disturbance. The channel extends for a short distance to a low-lying area where velocities abate, and water appears to move through the wetland as sheet flow downgradient of that point.

Following receipt of the Commission's letter, Mr. Deciero engaged a hydroseed contractor to seed the BVW and the upland slope to the south leading up toward the house. With the exception of some small rills on the slope, which continued growth will likely stabilize, and a localized scour where the channel below the drain outfall is (re)forming, I observed no erosion on the site. Within the drain pipe, I observed a significant accumulation of sand that appears to be winter road traction sand being washed through the drainage system into the wetland.

During my 9/2/2020 site evaluation, I observed that wetland herbaceous vegetation was already re-sprouting and colonizing the cleared BVW. This included sensitive fern (*Onoclea sensibilis*), sedges (Cyperaceae sp.) and soft rush (*Juncus effuses*).

Proposed Restoration: I propose the following measures to restore the BVW at the site:

1. **Wood chip removal:** Where wood chips are present in the BVW and buffer zone, the chips will be removed for reuse or composting on the site outside of the 100-foot buffer zone or trucked off site for beneficial reuse. The chips will be collected by a combination of hand raking and mechanized equipment. Mechanized equipment, consisting of a small tracked excavator and/or a skid-steer loader may be used, with driving of this equipment limited to the upland or on top of the chips. Chip removal will work from the interior of the wetland toward the wetland boundary. Bulk removal of chips can be conducted with the machinery, with the lowest layer of the chips raked by workers on foot into the machinery bucket or a pile for removal by the equipment. In order to restore a good growing medium while minimizing ground disturbance, chips will be removed such that in no case will more than a 1-inch thickness of chips be present, and 50% or more of the topsoil surface will be exposed in any 1 square foot area;
2. **Planting:** Planting of a large number of trees and shrubs is proposed for the altered BVW and buffer zone fringe. As noted in the attached planting lists, multiple species of shrubs are listed, with the option to choose several species from the list. This approach is proposed to avoid unnecessary specificity which might cause the proposed planting to stall due to the potential inability to acquire a particular plant species at time of planting;
3. **Erosion Control:** The site is largely vegetated at this time and the proposed planting will be conducted by workers on foot using hand tools which will result in minimal disturbance. It is proposed that erosion controls consisting of minimum 6-inch straw wattle will be deployed at the limited locations along the northern edge of the cleared area where flows are concentrated by local topography, including at the downgradient (northern) edge of the woodchip removal area, following initiation of removal of wood chips;
4. **Supervision:** The work, including plant placement, erosion control placement, and instruction to workers regarding wood chip removal and planting, will be directed and overseen by a qualified wetland scientist. Following completion, a completion report

with photographs will be provided to the Lancaster Conservation Commission by the wetland scientist.

Authorization for the proposed restoration:

- a. Ownership: The majority of the proposed work is on Deciero property. As noted on the Site Plan (to be provided as soon as available), a portion of the work proposed is on map 40, parcel 43-1, owned by Davis Dairy Inc. When Mr. Deciero became aware of this fact (by review of a draft of the Foresite Site Plan) he contacted that property owner, who subsequently granted permission for access to that property for purposes of the proposed restoration (see attached concise email communication between John Davis of Davis Dairy, Inc. granting permission for the proposed restoration work on land owned by Davis Dairy Inc.);
- b. Regulatory: The proposed restoration requires authorization from the Lancaster Conservation Commission. To expedite the restoration so that it can be completed in this growing season, I recommend and request that the Commission issue an Enforcement Order authorizing the proposed restoration.

Mr. Deciero has already initiated discussions with contractors to facilitate quick mobilization to complete the restoration work. My hope is that the restoration can be completed soon, so that the wetland will benefit from a full 2021 growing season growth.

I hope that this information is helpful and look forward to working with the Commission to restore the site. Please do not hesitate to contact me if you have any questions concerning this or other matters.

Sincerely,



Paul J. McManus, PWS
President

Enclosures

- Access permission for parcel 43-1
- Proposed planting specifications
- Site photographs
- Wetland Resource Evaluation Report

C: Brian Deciero - owner

Email Communication between Brian Deciero and John Davis of Davis Dairy Inc. granting permission for the proposed restoration work on land of Davis Dairy Inc.

From: maze01@comcast.net

Date: October 2, 2020 at 9:22:49 AM EDT

To: Brian Deciero <decierowelding@gmail.com>

Subject: RE: 97 woodland meadow rd

Brian sorry for the delay but you have the Davis family permission to work on our land . John Davis

-----Original Message-----

From: Brian Deciero <decierowelding@gmail.com>

Sent: Thursday, October 01, 2020 8:51 PM

To: maze01@comcast.net

Subject: 97 woodland meadow rd

If you could please write a email giving me permission to replant the vegetation on you're land thanks

Sent from my iPhone Brian deciero

Proposed Restoration Planting Specifications:

The proposed BVW planting area consists of approximately 10,000-sf. Native species are proposed to be planted. EcoTec notes that based upon an inspection of the surrounding unaltered BVW, it appears that the site was significantly impacted by invasive bush honeysuckle (*Lonicera* sp.). it will not be possible to prevent the return of this species to the proposed restoration area. The following plant densities are proposed:

- Trees: 1 tree per 300 sf = 35 trees;
- Shrubs: 1 shrub per 50 sf = 200 shrubs.

For the proposed shrub plantings, it is proposed that at least four species (minimum 20 specimens of each) will be selected, depending upon availability. Shrubs will be planted throughout the area in a non-linear arrangement to mimic natural plant distribution. Within the most low-lying portions of the wetland, where the ground may be saturated well into the growing season, hand-shoveling of soil shall be employed to create small mounds similar to the “pit and mound” microtopography observed in natural wooded swamps.

Table 1: Bordering Vegetated Wetland Planting Plan

SPECIES; SIZE; SPACING	NUMBER
Trees: Red maple (<i>Acer rubrum</i>) Min 4' height, min 2-gal container	35
Shrubs; min 3' in height, min 1 gal container;	200 Total*
Highbush blueberry (<i>Vaccinium corymbosum</i>)	*Depending upon availability from local nursery stock, at least four (4) of the listed species will be selected, with at least twenty (20) specimens of at least four species planted, to promote diversity of the proposed shrub community
Silky dogwood (<i>Cornus amomum</i>)	
Sweet pepperbush (<i>Clethra alnifolia</i>)	
Arrow-wood (<i>Viburnum dentatum</i>)	
Winterberry (<i>Ilex verticillata</i>) – lower BVW only	
Swamp Azalea (<i>Rhododendron viscosum</i>) – lower BVW only	
Red chokeberry (<i>Aronia arbutifolia</i>)	
Meadowsweet (<i>Spiraea latifolia</i>)	
Steeplebush (<i>Spiraea tomentosa</i>)	

Buffer Zone Planting Zone: Shrubs will be planted along the margin (approximately 220 linear feet) at an average spacing of 7 feet on center. This results in a total of 31 shrubs. Shrubs will consist of a mixture of the following species:

Table 2: Buffer Zone Planting Plan

SPECIES; SIZE; SPACING	NUMBER
Shrubs; min 3' in height, min 1 gal container;	
Hazelnut (<i>Corylus americana</i>)	35 Total*
Meadowsweet (<i>Spiraea latifolia</i>)	*Comprised of at least three species, with a minimum of 5 specimens of each selected species
Highbush blueberry (<i>Vaccinium corymbosum</i>)	
Grey dogwood (<i>Cornus racemosa</i>)	
Nannyberry (<i>Viburnum lentago</i>)	
Witch hazel (<i>Hamamelis virginiana</i>)	

All plants will be planted in clean topsoil and mulched with composted, native leaf litter at a depth of two (2) inches to deter herbaceous and weedy growth. Plants will be watered as/if necessary, during the first six weeks after planting to assure survival.

Site Photographs: 97 Woodland Meadow Drive 9/2/2020



View north across cleared area showing channel developing from storm drain outlet



Wood chips proposed to be removed



Planted grass for erosion control with sedge and sensitive fern colonizing naturally



View west along wetland boundary (blue flags) from near flag A-4