C. Webb & Associates, LLC
Environmental Consulting Services

May 29, 2021

Attn: Tom Mocko
Environmental Planner
Community Development –
Planning & Environmental
Town of Glastonbury
2155 Main Street
Glastonbury, CT 06033

RE: Proposed Wetland Restoration Plan in Support of the Construction of a Hybrid Apple Orchard and an Irrigation Pond at 150 Chatham Hill Road.

Dear Mr. Mocko:

The following narrative describes all the activities associated with the proposed development of a hybrid apple orchard on the subject site.

Proposed Project Description

The proposed project includes the establishment of an orchard with 3 species of hybrid apples at the project site and the construction of a pond to irrigate the apple trees. A total of 1,000 apple trees will be planted for the entire project, with 600 +/- trees to be located south of the existing conservation area and the remaining 400+/- will be planted north of the conservation easement surrounding the proposed irrigation pond within wetland and upland review area (URA). The project will be conducted in three phases as shown on the attached plans and described below.

In April of this year, the first phase of project, planting 400 apple trees on the land south of conservation area in non-regulated area, was completed.

The second phase of the project will include the conversion of forested wetlands and URA into a pond approximately 12 feet deep and 28,200 sf (0.65 acres) in size and will discharge into a manmade stone channel from the pond outlet to an existing stream channel that flows to a culvert under Matson Hill Road. Attached to this letter is a hydrologic and hydraulic analysis that was prepared to properly size the stone channel at the outlet of the proposed pond and to insure that there would be no impact to the capacity of the existing culvert under Matson Hill Road. Also, under this phase, an additional 200 apple trees will be planted in the area south of the existing conservation area.

The third phase of project includes the construction of an access road along the western edge of the property to access the 400+/- apple trees proposed for the area surrounding the pond.

In order to construct and maintain this orchard project, permanent access through a portion (approximately 4038 sf) of the existing conservation easement would be required. In order to

compensate this loss of easement area, the landowner is offering to create an additional conservation easement area in the northeast corner of the property, approximately 8773 sf in size.

All the elements of the project discussed in this letter are presented on the two site plan sheets that accompany this letter.

Project Background

In 2020, the project manager for this site engaged in preliminary discussions with the Town's Environmental Planner regarding the proposed project. The discussion identified a tree removal approach within the wetland areas but not complete clearing and grubbing of the tree stumps. The project manager misunderstood the town's directive and instead cleared and grubbed the regulated area without wetland agency approval. The trees and stumps were chipped and used to create a wood chip berm surrounding the entire work area. The misunderstanding came to light this past April when the project manager contacted the environmental planner to inquire what permitting would be required to excavate the pond in the wetland areas and plant apple trees in in the URA.

Subsequently, following discussions and a field walk with the Environmental Planner, we are proposing to restore wetland areas that will not be converted into an agricultural irrigation pond and stream channel. The following section describes our proposed wetland restoration plan along with planting specifications for the Town staff and the commission's review and comment.

Proposed Wetland Restoration Planting Specifications for 150 Chatham Hill Road

The attached lists of recommended shrub and herbaceous plants are proposed for the restoration of the disturbed wetland areas on the subject site. The lists identify a variety of species so that the applicant has some flexibility when purchasing them. Also attached is a proposed shrub and seeding location layout plan. Any proposed changes or substitutions to these plants and/or plant locations should be approved by the Town of Glastonbury staff before installation.

Wetland Shrubs

Proposed wetland shrubs appropriate for this location include Winterberry, Silky Dogwood, Speckled Alder, Red Chokeberry, Red-osier Dogwood and Common Spicebush (see attached descriptions). We recommend that approximately 120 container shrubs (no bare root plants), between 3 to 4 feet tall, that include a mix of these species, be installed within the previously cleared wetland areas in the northwestern and northeastern corners of the property as well as on either side of the proposed native stone drainage channel. The shrubs in the lot corners should be installed in clumps of three (3) plants to create a "thicket" type of habitat. Spacing of the root balls in the thicket locations should be approximately 3+/- feet apart, with the thickets spaced 20 feet away from each other, at the areas identified on the attached proposed planting plan.

Wetland Seed Mixes

The following wetland seed mixes are available from New England Wetland Plants, Inc in Amherst, Massachusetts and are available at other nurseries as well. The proposed seed mixes are described in more detail in the attached list.

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds which are suitable for most wetland restoration sites that are not permanently flooded. All these species are best suited to moist ground as found in most wet meadows and scrub shrub restoration areas.

The New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites is another good choice for this location. This mix contains a selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as establishment of native vegetation.

Please feel free to contact me at (860) 680-5598 with any questions or comments.

Regards,

Clinton L. Webb, Jr.
Senior Environmental Planner
C. Webb & Associates, LLC

RECOMMENDED SHRUB PLANT LIST FOR 150 CHATHAM HILL ROAD WETLAND RESTORATION SITE

Alnus incana (rugosa) - Speckled Alder

A large shrub (15') that grows along stream edges and swamps. Has ability to fix nitrogen. Clumps of Alder form excellent wildlife cover. Good for bank stabilization. One of the most adaptable shrubs for difficult sites. Good for shores, wet meadows, and wetland forests.

- Recommended plant size 3 to 4 feet.

Aronia arbutifolia/Photinia pyrifolia - Red Chokeberry

A medium-sized shrub (6-10') with small white to pinkish flowers in the spring. Persistent red berries are eaten by wildlife in winter. Very soil adaptable. Good for shores, wet meadows, and wetland forests.

- Recommended plant size 3 to 4 feet.

Cornus amomum - Silky Dogwood

A fast-growing, clump-forming, medium shrub (5-8'). Reddish winter color on young stems. Blue fruit in the fall eaten by many animals. Provides nesting and cover for birds. Good for shores, wet meadows, and wetland forests.

- Recommended plant size 3 to 4 feet.

Cornus sericea - Red-osier Dogwood

Formerly C. stolonifera, this rapidly growing, spreading shrub reaches 6-10'. Showy red stems in winter. Berries and twigs provide food for a wide variety of wildlife. Good for stabilization.

- Recommended plant size 3 to 4 feet.

Ilex verticillata - Winterberry Holly

Medium to tall shrub found in a variety of wetlands. Shade to full sun. Bright red berries persist into winter and are important wildlife food. Good for shores, wet open areas, and wetland forests.

- Recommended plant size 3 to 4 feet.

Lindera benzoin - Common Spicebush

Medium shrub found in seasonal wetlands and moist woods. Red fruit important food source for many birds. The primary food of larval Spicebush Swallowtail butterflies. Fall foliage. Good for shores and wet open areas.

- Recommended plant size 3 to 4 feet.

RECOMMENDED SEED MIX LIST FOR 150 CHATHAM HILL ROAD WETLAND RESTORATION SITE

New England Wetmix (Wetland Seed Mix) Spec Sheet

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed to soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

Application rate: 1 lb./2500 sq. ft. or 18 lbs./acre

SPECIES: Fox Sedge (Carex vulpinoidea), Lurid Sedge (Carex lurida), Blunt Broom Sedge (Carex scoparia), Blue Vervain (Verbena hastata), Fowl Bluegrass (Poa palustris), Hop Sedge (Carex lupulina), Green Bulrush (Scirpus atrovirens), Creeping Spike Rush (Eleocharis palustris), Fringed Sedge (Carex crinita), Soft Rush (Juncus effusus), Spotted Joe Pye Weed (Eupatorium maculatum), Rattlesnake Grass (Glyceria canadensis), Swamp aster (Aster puniceus), Blueflag (Iris versicolor), Swamp Milkweed (Asclepias incarnata), Square stemmed Monkey Flower (Mimulus ringens).

New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites – Spec Sheet

The New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites contains a selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation.

This mix is particularly appropriate for detention basins that do not hold standing water. Many of the plants in this mix can tolerate infrequent inundation, but not constant flooding. The mix may be applied by hand, by mechanical spreader, or by hydro-seeder. After sowing, lightly rake, roll or cultipack to insure good seed to soil contact. Best results are obtained with a Spring or late Summer seeding. Late Fall and Winter dormant seeding requires an increase in the application rate. A light mulching of clean, weed-free straw is recommended.

Application rate: 35 lbs/acre | 1250 sq ft/lb

SPECIES: Riverbank Wild Rye (Elymus riparius), Creeping Red Fescue (Festuca rubra), Little Bluestem (Schizachyrium scoparium), Big Bluestem (Andropogon gerardii), Switch Grass (Panicum virgatum), Upland Bentgrass (Agrostis perennans), Nodding Bur Marigold (Bidens cernua), Hollow-Stem Joe Pye Weed (Eupatorium fistulosum/Eutrochium fistulosum), New England Aster (Aster novae-angliae), Boneset (Eupatorium perfoliatum), Blue Vervain (Verbena hastata), Soft Rush (Juncus effusus), Wool Grass (Scirpus cyperinus).

PROPOSED PROJECT WORK SCHEDULE

Phase 1 – Wetland Restoration Plan

This work will begin with the removal of any fill and/or large rock material from the wetland regulated areas to be replanted with shrubs and seed mixes as shown on the site plan. The soil material removed from the regulated area will be placed and graded on site as shown on the proposed plan. All disturbed areas will be seeded, planted, and mulched immediately following the grading work to stabilize the work areas. Work can commence following approval of the application and the issuance of the wetland permit.

Phase 2 – Pond Construction

The pond and channel construction should be carried out during the dry season which is typically from July through early September. The portion of stream channel where work will be conducted will be blocked off from any water flows during construction as shown on the site plan. The soil material removed from the regulated area will be placed and graded on site as shown on the proposed plan. All disturbed areas will be seeded, planted, and mulched immediately following the grading work to stabilize the work areas. Work can commence following approval of the application and the issuance of the wetland permit.

Phase 3 – Hybrid Apple Tree & Irrigation System Installation

The proposed hybrid apple trees and irrigation system will be installed following the completion of Phases 1 and 2 at the locations shown on the proposed plan. Any excess soil remaining from the tree planting will be placed, graded, and stabilized on site as shown on the proposed plan.