

BUFFER ENHANCEMENT AND MONITORING PLAN

**Salem Hunt Residential Development
June Road
Town of North Salem, New York**

Lead Agency: Town of North Salem Planning Board
North Salem Town Hall
266 Titicus Road
North Salem, New York 10560

Prepared By: Tim Miller Associates, Inc.
10 North Street
Cold Spring, New York 10516
Contact: Tim Miller, AICP
(845) 265-4400

December 16, 2009

Buffer Enhancement and Monitoring Plan

Project Description

The FEIS Plan proposes 65 units in 24 buildings. The buildings will consist of two, three and four unit townhomes. The plan also includes a separate clubhouse and pool for future residents, roads and stormwater management facilities. A Wastewater Treatment Plant (WWTP) will be built for the treatment of wastewater from the development. Treated wastewater from the plant will be discharged to the SSDS located in the east-central portion of the site.

Construction of the FEIS Plan includes on-site disturbance to wetland buffers of 0.45 acres. Wetland buffer disturbance will occur for the entrance road (affecting the Wetland D buffer), temporary disturbance required for utilities, including a water line affecting Wetland B buffer (200 square feet), and stormwater lines and wastewater lines affecting Wetland D buffer. The project may also include a foot bridge in Wetland D and an off-site stormwater conveyance pipe in the Wetland D buffer adjacent to June Road. The applicant has proposed mitigation for the total 0.45 acres of wetland buffer impact by providing 0.58 acres of wetland buffer enhancement planting in the buffers of Wetlands A, C, and D. This footbridge will only be constructed if it receives the necessary governmental approvals.

Mitigation Proposal

The following elements have been incorporated into this wetland mitigation plan for mitigating impacts to the Town wetland as a result of buffer disturbance:

1. The removal of invasive species within wetlands and buffer areas. The specifics of this task are described in more detail in the Invasive Species Eradication Program.
2. Planting of appropriate native species in select buffer areas. Species will be chosen which are known to be resistant to deer browsing, which is known to be a serious issue on the Salem Hunt site. It is the intense deer browsing that is occurring at the site which has eliminated many native species, with only resistant invasive species, i.e., japanese barberry left to dominate the shrub layer. The submitted landscape plans show approximately one half acre of buffer where additional plantings will be provided, and identify an additional one half acre of wetland that will be restored with the removal of multiflora rose and phragmites (near June Road and the proposed site access).
3. Conservation and other easement agreements will be established for approximately 17.3 acres (43 percent of the site) including buffer and all wetland areas, and are likely to also include a maintenance agreement with the Bridle Trails group.

Further, native berry and cover trees are proposed to be used in landscaping throughout the project, as well as on the outer boundary of the development. The following species are proposed for the buffer enhancement areas as shown on the landscaping plan (refer to sheets SP-2.1 and SP-2.2):

<u>Scientific Name</u>	<u>Common Name</u>
<i>Amelanchier canadensis</i>	Shadblow
<i>Cornus amomum</i>	Silky Dogwood
<i>Cornus racemosa</i>	Gray Dogwood
<i>Salix discolor</i>	Pussy Willow
<i>Viburnum dentatum</i>	Arrowwood
<i>Viburnum lentago</i>	Nannyberry Viburnum
<i>Viburnum trilobum</i>	Cranberrybush
<i>Hamamelis virginiana</i>	Witch hazel
<i>Ilex glabra</i>	Inkberry
<i>Lindera benzoin</i>	Spicebush
<i>Aronia arbutifolia</i>	Red chokeberry
<i>Kalmia latifolia</i>	Mountain Laurel

All of these species are native and locally common, and are known to provide wildlife food or cover. Most bird and many of the mammal species that utilize the site can make use of the berries, flowers or twigs produced by these plants.

Planting Details

Plant choices for the wetland buffer enhancement were made according to existing site conditions and locally common species.

All planting will proceed by hand. Materials will be brought to the site in good condition (see below) and then placed in central drop locations. The materials will then be hand-carried to their planting locations and in turn, planted by hand. Only rounded, shallow planting shovels will be used in this effort.

Criteria for selecting plant material will include (1) the plant's ability to withstand the expected light and saturation conditions; (2) its demonstrated survival on this site and other nearby sites; (3) the plant must be native and non-invasive; and (4) whether the plant material is available at nurseries in the same region as the site. A complete plant species list is provided in Drawing No. SP-2.1, in the table "Wetland Buffer Enhancement Plant List". Seed mix was chosen based on the species' ability to survive in moist areas adjacent to the road with some sun.

Planting will be done in spring or early summer (between April 1 and July 1). Shrubs may also be planted in the late summer to early fall (September 1 to October 30). In all cases, a hole will be dug twice as deep as the root ball. The only shovels allowed are rounded, shallow spades. The hole will then be backfilled with a thin layer (two to four inches) of rich, organic topsoil, the plant placed inside, the hole backfilled to the top and then gently tamped down.

Container-grown plant material delivered to the job site will be inspected to assure moist soil/root masses. Any dry and light weight plants will not be accepted. If not planted immediately the container will be stored out of the sun and wind and kept moist (i.e., a means of watering will be provided and watering will occur daily). When removed from the containers, the plants will be the size of the specified container. If in leaf, the plants will appear healthy with no spots, leaf damage, discoloration, insects or fungus. If not in leaf, the buds will be firm and free of damage, discoloration, insects or fungus. Containers will be a minimum of quart size for shrubs and gallon size for trees.

Plants not having an abundance of well developed terminal buds on the leaders and branches will be rejected. The stems and branches of all plants will be turgid and the cambium healthy or the plants rejected.

Seeding within and adjacent to wetland areas should not be completed when there is more than two inches of standing water, or in areas that are likely to be flooded. Seeds should be broadcast by hand or knapsack seeder using the proper seeding rate (15 pounds per acre), and carefully proportioning seed for the entire area. If area has been recently cleared and raked, cover with a light layer of straw mulch following seeding.

Monitoring and Maintenance

At least one pre-construction meeting will occur between the chosen planting contractor/subcontractor and the site environmental systems planner prior to beginning construction on site. The construction monitor will have experience in wetland construction and a Bachelor of Science degree in Natural and/or Physical Resources.

Monitoring and maintenance efforts for the buffer enhancement plantings will take place over a three year period following construction. This will include site visits twice a year, with additional inspections as required depending on conditions. The applicant's environmental monitor will conduct a survey of the site and site conditions will be noted and adjusted as necessary. An annual report will be provided to the Town of North Salem at the end of the growing season for each of the three years. These reports will include the following information:

1. Photographs showing all representative areas of the mitigation site shall be taken at least once each year during the period between 1 June and 15 August.
2. A visual count of all newly installed plantings with a description of health, vigor, size and other physical factors.
3. Recommendations for replacement of dead plant material or exchange with a different species if one species does not appear to be well adapted to final site conditions.

Plantings will meet or exceed an 80 percent survival rate by the end of the second growing season. If this goal is not met, the site will be re-evaluated, and replanting will be completed as necessary. Invasive species (i.e., *Lythrum salicaria* and *Phragmites australis*) will not constitute more than 10 percent of the vegetative community. If this goal is exceeded, measures will be taken to eradicate the invasive species.