Wetland Mitigation Plan and Specification
Somers Realty Planned Hamlet
Route 6, Town of Somers, NY
December 3, 2008

Project Description

The applicant proposes the development of 79.38 acres in conformance with the existing Planned Hamlet zoning. There are approximately nine acres of jurisdictional wetlands on this site, which are regulated by the Town of Somers and the Army Corps of Engineers. The site wetlands are not regulated by the New York State DEC.

The applicant is proposing the filling of up to 0.20 acres of town and federally regulated wetland. This level of fill is necessary for the completion of the roads and infrastructure to Town standards. A total of 0.85 acres of expanded or constructed wetland, as described below, is proposed to offset this wetland disturbance. Fill activities are related to fill areas for completion of road grading or crossing of wetlands to complete the road configuration; no building sites, parking facilities or stormwater management areas are within wetland areas.

Wetland features on site have been degraded by past land use activities including prior mining of the site, installation of the gas line easement and impacts due to adjacent land development. It is unclear whether these headwater wetlands were degraded due to anthropogenic disturbance or if these wetlands were "created" within the former soil mine. The site is part of the Muscoot River drainage basin. Two areas of open water exist on the property; neither of these wetlands will be directly impacted.

Mitigation Proposal

The applicant is proposing a three-tier approach to mitigating the encroachments into town wetlands.

Wetland Expansion. It is proposed to expand the existing wetland, resulting in an increase of 0.85 acres for a greater than 4:1 ratio. The wetland expansion is described in greater detail below.

Wetland Restoration. Several areas of the existing wetland are dominated by invasive plant species, particularly common reed (*Phagmites australis*) and purple loosestrife (*Lythrum salicaria*). It is proposed to actively remove these species by hand in those areas where the plants are most dominant.

Wetland Buffer Restoration. Previous disturbance of this site has left a large portion of the property with sparse shrub and herbaceous vegetation. The final location of these buffer restoration areas will depend on the final approved site plan, but are expected to include the area between the proposed road to the units adjacent to Mahopac Avenue and Wetlands C and J, the area between the road to the eastern portion of the property and Wetland D, and the area between the proposed access road off Route 6 and the northern end of Wetland A. Many of the same species that are proposed for the wetland mitigation area are also suitable for this transition zone. A portion of the existing wetland buffer between the road to the eastern portion of the property and Wetland D will be

converted to a wetland mitigation area.

It is proposed that the wetland and buffer mitigation measures will be timed to coincide with road construction, as this is the reason for the proposed impacts. Wetland creation will occur concurrent with road grading and filling of the wetlands as described. The extent of enhancement of the wetland buffers is dependent on the final site plan, and at the discretion of the Planning Board could be tied into completion and dedication of the Town roads or certificate of occupancy to particular buildings that are proximate to the buffer areas.

Approximately 1.6 acres of town regulated wetland will be impacted by the proposed activities, as shown on the following table:

Wetland Buffer Encroachment by Activity		
Reason for Buffer Encroachment	*Square feet of disturbance*	*Acres of Disturbance*
Building support/Rear yard	*21,780*	*0.50*
Roads	*41,405*	*0.95*
Detention basins	*7,229*	*0.17*
Total:	*70,414*	*1.62*

The applicant is committed to enhancing, restoring and/or expanding other buffer areas. This will include the removal of invasive species from these areas, and re-planting with conservation seed mixes and shrubs. Specific planting plans for these areas will be provided with the individual site plans for each development plan/phase. Details of this planting plan will include the use of low growing shrubs and native grasses in order to soften and stabilize the new slope, provide habitat opportunities and filter stormwater runoff . Only annual mowing will be allowed in these areas. It is expected that a total of 2.3 acres of wetland buffer will be treated in this manner.

Wetland Creation Proposal

It is proposed to construct 0.85 acres of new wetland adjacent to the delineated site wetlands. Using this "shared hydrology" approach, upland areas adjacent to the site wetlands will be excavated to elevations consistent with the wetlands, hydrology will be diverted to the new area where appropriate, and vegetation planted that is consistent with the native vegetation found in the site wetlands.

Site Selection. The area of proposed wetland construction was chosen due to its proximity to existing wetlands, suitable subsoils for retention of hydrology, and position in the watershed to ensure a regular source of hydrology from sources other than direct precipitation. It is also located on a parcel that will not contain future building sites, ensuring long term viability and preservation. An additional factor was ease of access to the area for both initial excavation and planting and long term maintenance.

Functional Replacement. As stated above, the applicant will replace 0.20 acres of existing wetlands with a contiguous area of wetland totaling 0.85 acres. The wetlands to be lost are generally areas that have been affected by previous site activity, including existing asphalt near the site entrance at Route 6. They are however, all small parts of a larger wetland system.

The new wetland areas will be larger and contiguous, and will be an improvement functionally when compared to the areas that will be lost. These areas will provide better storage of stormwater flows, along with the water quality treatment that comes with that storage, and will improve wildlife habitat by providing a greater diversity of seed and berry-bearing native trees and shrubs. Non-native invasive vegetation will be removed from within Wetlands D and E and adjacent areas. The goal of the planting plan is to ultimately create a wooded wetland corridor with vernal pool hydrology in some isolated areas.

Grading Details

It is proposed to excavate the mitigation area in order to establish pools and flow paths as shown on the grading plan. These areas will be accessed for purposes of the wetland mitigation construction from the proposed road. If suitable, topsoil removed from excavated area will be used within the new wetlands as replacement of organic material for surface preparation.

Soil erosion and sediment control fencing will be installed at the outer and down slope limits of the proposed wetland expansion. The location of the proposed mitigation will be cleared as necessary, but with an eye toward preserving any trees or shrubs adjacent to the work area; some may be removed and stockpiled for replanting after completion of grading.

Where available, the upper one foot of topsoil will be stripped from the site and set aside from other site grading materials. The temporary storage area will be an upland site either removed from wetlands by 100 feet or separated from same by a soil erosion and sediment control fence.

All excavations will be to finished grade elevations as indicated in the mitigation drawings. Per the above, topsoil will be stripped from the site and stockpiled for use in finishing grading. The stockpiled topsoil will be returned to the site to create a planting surface four to six inches deep for the wetland mitigation plantings as described above. Finished soils at the invert of the mitigation sites will be of landscape quality.

The finished surfaces of the planting area will be smooth within specified tolerances in uniform levels or slopes between points where elevations are indicated or between such points and existing grades. The accepted grading tolerance will be a smooth and even surface, free of voids, and within 0.25 feet of the specified elevation. Leaving the surface rough, crating mounds and kettles for a variable microtopography can be beneficial. During the course of earthwork, inspections will be schedule at a frequency to be determined by the engineer/environmental consultant but no less than weekly. Some changes to the grades may be appropriate to establish flow paths and preserve trees. These determinations will be made by the wetland specialist supervising the grading.

Planting Details

Plant choices for the wetland expansion 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. See Table 1 for complete plant species 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 backfield to the top and then gently tamped down. Final level of the tree or shrub will be consistent with the root collar as grown in the nursery.

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 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 (7.5 pounds per acre), and carefully proportioning seed for the entire area. Cover with a light layer of straw mulch following seeding.

Plant Species Choices for Wetland Expansion
Somers Planned Hamlet
Route 6, Town of Somers, NY

Map Symbol	Quantity	Scientific Name	Common Name	Size
Trees				
Ar	31	Acer rubrum	Red Maple	5' - 6'
Shrubs				
Iv	19	Ilex verticillata	Winterberry holly	4' - 5'
Ca	19	Clethra alnifolia	Summersweet	3' - 4'
Co	21	Coephalanthus occidentalis	Buttonbush	3' - 4'
As	18	Alnus rugosa	Speckled alder	4' - 5'
Am	9	Aronia melanocarpa	Black chokeberry	4’ - 5’
Cs	32	Cornus sericea	Redosier dogwood	3’ - 4’
Sc	30	Sambucus canadensis	Elderberry	3’ – 4’
Sd	28	Salix discolor	Pussy willow	4' - 5'
Vd	30	Viburnum dentatum	Arrowwood	4' - 5'
Herbs				
ME (Mixed emergents)	2,800	Mix of Symplocarpus foetidus, Onoclea sensibilis, Juncus effusus, Carex stricta, Carex crinita	Skunk cabbage, sensitive fern, soft rush, tussock sedge, fringed sedge	2" plugs, 4’ on center
Seed Mix				
ERNMX-122	7 pounds	Northeast Wetland Hummock Mix		

Plan Notes

1. Prior to commencement of site work, silt fence is to be placed at limit of disturbance.
2. Regrade area and spread topsoil four to six inches deep using existing stockpiles, or supplement with imported material as necessary. Final grading is to be generally completed as shown on this plan. Some field adjustment to achieve desired flow paths is acceptable.
3. Trees to remain will be identified prior to the commencement of site grading. These trees will be flagged in the field prior to the commencement of any clearing or excavation. Leave smaller existing trees in assumed area of disturbance to the extent practicable. Field adjustments to the grading plan may be necessary in order to ensure minimal impacts to roots of trees to be saved.
4. Hay and seed area of wetland expansion with Ernst Conservation Seeds Northeast Wetland Hummock Mix or equivalent. Companion seed with annual ryegrass as per grower’s recommendations. It is recommended that salt hay be used to avoid the introduction of invasive seeds, or that the area be hydromulched with cellulose.
5. Trees and shrubs will be planted within the proposed wetland creation area as specified on the plan and the table above.

Monitoring and Maintenance

At least one pre-construction meeting will occur between the chosen grading and/or 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 mitigation plantings will take place over a five year period following construction. This will include bi-weekly visits for the first growing season, and then a minimum of twice a year for the next four years, 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 Somers and the Army Corps of Engineers at the end of the growing season for each of the five years. These reports will include the following information:

1. All plant species, along with their estimated relative frequency and percent cover, shall be identified by using plots measuring 10 feet by 10 feet, with at least one representative plot located in each of the habitat types within the mitigation site. For this proposal, there are two plots identified on the plan view planting plan.
2. Vegetation cover maps, at a scale of one inch equals 100 or larger, shall be prepared for each growing season.
3. 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.
4. Surface water and groundwater elevations in representative areas of the mitigation site shall be recorded during each inspection.
5. Evaluation of hydric soil indicators, as defined in the 1989 Interagency Manual.
6. Evaluation of vernal pool hydrology, characterized by shallow pools in spring and following heavy rain events.
7. Evaluation of wetland vegetation as compared with the structure and composition the natural wetland vegetation of Wetland C.

Plantings will meet or exceed and 85 percent survival rate by the end of the second growing season. If this goal is not met, the site will be re-evaluated, and re-grading and/or 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.

Constructed Wetland Assessment Form

Project: _____ Date of Assessment: _____

Location: _____

Wetland Creation ☐ Wetland Restoration ☐ and/or Wetland Enhancement ☐

Person(s) conducting the assessment. _____

Initial evaluation. ☐ Semiannual. ☐ Annual. ☐

Hydrology:

Has adequate wetland hydrology been achieved in the Assessment Area? yes ☐ no ☐ partial ☐ .
If partial, what percentage of the Assessment Area has adequate Wetland Hydrology? _____ %.
What percentage of the Assessment Area will be inundated or have open water for three weeks or more during the growing season? _____%. Range of depths of inundation: _____ to _____

Remarks: (Sources of hydrology, vernal pools, islands, etc.)

Vegetation:

Have all disturbed nonaquatic areas been revegetated? Yes ☐ No ☐ Approximate areal cover. _____ %.
Is the assessment area adequately protected from significant erosion? Yes ☐ No ☐ Will additional plantings/seedings or structures be necessary to achieve adequate erosion control? Yes ☐ No ☐ . Have aquatic species been planted? Yes ☐ No ☐ . Have any aquatic species volunteered? Yes ☐ No ☐

Indicate the dominant species found within the assessment area. As practical, include aquatic species also. [Indicate if planted (P) or apparent volunteer (V).]

Percent of dominants that are FAC, FACW, or OBL species. _____ %.
Is the plant community a wetland? Yes ☐ No ☐ Will additional plantings/seedings be necessary to create a hydrophyte dominated community? Yes ☐ No ☐

Function and Value:

Indicate the wetland functions currently observable in the Assessment Area and their relative value in the Assessment Area wetland system (low, moderate, or high). What additional wetland functions can be projected for the Assessment Area?

Is the constructed/restored wetland a success? Yes ☐ No ☐ If no, describe the actions necessary to salvage or improve the Assessment Area to create a functioning wetland system. (Use the back of this page.)