Hampshire Country Club Planned Residential Development Village of Mamaroneck, Westchester County, New York Final Environmental Impact Statement

H Landscape Management Plan and Wetland Mitigation and Monitoring Plan





Landscape Management Plan

The purpose of this Landscape Monitoring Plan (LMP) is to provide additional detail and information regarding the future landscape operations of The Residences of Hampshire development. This document should be read in conjunction with the submitted Landscaping Plans of the Site Plan package. The Homeowner's Association for The Residences of Hampshire development will be responsible for maintenance of the landscape areas. Despite specification of best management practices and meeting or exceeding industry standards for LMP to promote and provide optimal conditions for wildlife and vegetation, desired outcomes cannot be guaranteed due to variable factors. The property owners cannot control or be responsible for variables that may influence results, such as, but not limited to, severe weather events (e.g. extended drought, hurricanes, heavy winds, torrential rains, etc.), pest and disease outbreak, and events or acts controlled by nature or beyond reasonable control.

According to the Planting Plans, a ratio of one-part organic matter (composted leaf mold) to two parts native topsoil is to be used for backfill soils for tree, shrub, perennial/groundcover, and ornamental grass plantings, in an effort to reduce irrigation water use upon landscape establishment.

Irrigation planning and practices for the Residences of Hampshire site begin with selection of plants that are tailored, respectively, to irrigated and non-irrigated areas. All plantings selected for non-irrigated areas will be species with a relative degree of drought-tolerance. Thereafter, there will be infrequent deep watering during the plant establishment, so as to promote deep root growth and development, which will increase the plantings' drought tolerance. Typically, species tolerant to this growth area require less water and maintenance, once established. All the plantings that have been proposed for non-irrigated areas are species, that should be drought-tolerant upon establishment, and should not require irrigation to survive beyond the establishment period. All plantings, whether native, non-native, or drought-tolerant, will all require temporary irrigation until their roots have developed and they have become established.

Temporary irrigation will be required for non-irrigated areas throughout the plant establishment period. The quantity of water expected to be used for irrigation of trees and plantings outside the permanent irrigation zones, during establishment, cannot be accurately quantified due to numerous variables. Temporary irrigation quantity will be dependent on precipitation, weather conditions, maintenance practices (e.g. use of mulch



and organic matter soil amendments), plant species, species-specific water intake rates, etc. As indicated above, good cultural practices, such as mulching root zones, organic matter soil amendments, deep infrequent watering, can promote plant establishment and reduce temporary irrigation quantity. The water source for temporary irrigation will be dependent on the landscape contractor; however potential irrigation sources could be either proposed on-site dedicated irrigation wells or nearby fire hydrant(s) with the proper municipal approvals. The delivery method for irrigation would also be contractor-dependent, but may include temporary irrigation rotary heads on tripods and/or temporary slow release watering bags for trees (i.e. Treegator Bags).

Upon final acceptance of installed landscape by the landscape contractor, all installed plant materials will be guaranteed for one year. All plantings 75% dead (defoliated, desiccated, and/or diseased) or more, will be replaced by the landscape contractor. Beyond the first year, replacement responsibility of the landscape plantings will be turned over to the property owner. By this time, it is anticipated the landscape plantings will be established.

Wetland Mitigation and Monitoring Plan

Hampshire Country Club Planned Residential Development Village of Mamaroneck, Westchester County, New York

PREPARED FOR

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PREPARED BY



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1 Proposed Action

1.1 Introduction and Background

This Wetland Mitigation and Monitoring Plan has been prepared by VHB Engineering, Surveying, Landscape Architecture and Geology, P.C., (VHB) for the Hampshire Country Club Planned Residential Development (PRD) proposed for the 106.2-acre Hampshire Country Club property, located in the Village of Mamaroneck, Westchester County, New York (hereinafter, the "Project Site," see Attachment A, Figure 1).

The Project Site, which is owned by Hampshire Country Club, LLC (HCC), includes an 18-hole golf course, a clubhouse, swimming pool, seven tennis courts, a one-story tennis pavilion, two-story pool facility/pro-shop, several maintenance/support buildings and off-street parking. Two roads (Cove Road and Eagle Knolls Road) run east-west through the southern section of the Project Site. The majority of the Project Site is comprised of the fairways, greens, roughs, and water features of the 18-hole golf course.

The PRD consists of 105 residential units to be constructed on interior portions of the Project Site, development of seven tennis courts and creation of 36 acres of common open space (hereinafter, the "Proposed Action"). The common open space would be owned and maintained by the Homeowner's Association of the PRD. Additionally, the existing 18-hole golf course use would be downsized to a 36.8acre, nine-hole golf course to be owned and maintained by HCC.

The proposed nine-hole golf course contains or abuts eight existing wetlands, including golf course ponds and emergent vegetation wetlands. As required by the Village of Mamaroneck, a functional assessment of these wetlands was performed by VHB in May 2016, according to the methods developed by Dennis W. Magee (with technical contributions from Garrett G. Hollands), as described in "A Rapid Procedure for Assessing Wetland Functional Capacity Based on Hydrogeomorphic (HGM) Classification" (the "Magee-Hollands Method"). Under the Magee-Hollands Method, the functional capacity for each of the eight principal wetland functions described below is assessed, based partially on review of "desktop" resources (e.g., aerial imagery, maps and other references), but primarily upon field observations and measurements of hydrological, geological and biological characteristics of the wetlands and identification of land uses within the surrounding watershed.

The results of the wetland functional assessment indicated that the eight wetlands are primarily anthropogenic features that were created or altered to provide drainage and irrigation for the golf course, and to serve as water hazards. The wetlands also receive stormwater from onsite and offsite sources. Accordingly, the primary Magee-Hollands functions performed by the wetlands are the Modification of Groundwater Quality and Storm and Floodwater Storage functions that these features were created or historically altered to perform. The wetlands provide a moderate degree of functionality for Modification of Groundwater Recharge and Modification of Groundwater Discharge. Overall functionality is low for the Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna, Export of Detritus and Modification of Stream Flow functions.

As the eight wetlands would be preserved under the Proposed Action, the mitigation efforts proposed for these features have been specifically designed to improve their functional capacity for the eight Magee-Hollands wetland functions described above, particularly the Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna functions. Accordingly, this Wetland Mitigation and Monitoring Plan has been created to summarize the mitigation efforts proposed for these features, and to outline monitoring and maintenance efforts designed to ensure the success of the proposed mitigation.

1.2 Project Impacts

The Proposed Action has been designed to avoid or minimize potential adverse impacts by situating development away from wetlands, improving stormwater quality and providing for native plant buffers along wetland perimeters. Specifically, none of the residential buildings, tennis courts or other improvements would occur within a minimum of 100 feet of eight wetlands that occur on adjacent to the ninehole golf course. Similar to existing conditions, the wetlands would continue to provide drainage and irrigation, serve as water hazards and receive stormwater discharge. Under the proposed PRD, stormwater would be directed to a stormwater management system designed to filter pollutants and control runoff from impervious surfaces. The stormwater management system includes vegetated infiltration basins equipped with continuous deflective system (CDS) units and stone diaphragms to provide pretreatment of stormwater. As a result, a reduction in discharges of pollutants, organic material and mineral sediments to the wetlands will occur. Moreover, the Proposed Action would result in reduction of the existing 18hole golf course to a smaller, 9-hole golf course. Accordingly, a corresponding reduction in golf course management practices, including fertilizer, pesticide, and herbicide applications at would occur, and associated wetland water quality improvements are anticipated. Finally, the Proposed Action would result in installation of 20-foot wide wetland edge plantings along the perimeter of the eight wetland features, as described in section 1.3 below.

Based upon the foregoing, the primary impacts of the Proposed Action to wetlands are anticipated improvements in the Magee-Hollands Modification of Groundwater Quality, Storm and Floodwater Storage, Modification of Groundwater Recharge, Modification of Groundwater Discharge, Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna functions provided by these features, as compared to exiting conditions.

1.3 Wetland Mitigation Plan

As detailed in section 1.1, due to low vegetative abundance and diversity, the existing wetlands at the Project Site received low overall Magee-Holland scores for the Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna functions. Accordingly, the wetland mitigation plan has been specifically designed to improve the performance of the wetlands for these two important functions, as compared to exiting conditions.

As detailed on the Landscaping Plan (see Attachment B) implementation of the wetland mitigation plan would result in the installation of native plantings in 20-foot wide zones situated along perimeter areas of the eight wetlands located on or adjacent to the nine-hole golf course. The species to be planted within the mitigation areas include native trees, shrubs and herbaceous plant species that commonly occur along wetland and pond edge communities in southeastern New York State. Among the proposed species are red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), tupelo (*Nyssa sylvatica*), summersweet (*Clethra alnifolia*), winterberry (*Ilex verticillata*), gray dogwood (*Cornus racemosa*), switchgrass (*Panicum virgatum*), Joe-Pye weed (*Eupatorium purpureum*), tussock sedge (*Carex Stricta*) and others. Once established, it is anticipated that the wetland mitigation areas will significantly improve the Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna functions of the eight wetlands.

Provisions for monitoring and maintenance of the mitigation areas are detailed in Sections 2 and 3 of this plan.

2 Monitoring and Maintenance

2.1 Mitigation Goals

The wetland mitigation plan will be determined to be successful if the plantings within the eight wetland mitigation areas (20-foot wide wetland edge planting zones) achieve 85 percent areal coverage within 5 years of their installation, and if qualitative improvements in the two targeted Magee-Hollands wetland functions (Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna) are realized for each wetland. These mitigation plan goals may be modified, as necessary, to comply with any potential Village of Mamaroneck (the "Village") and/or United States Army Corps of Engineers (USACE) permitting or mitigation requirements.

2.2 Monitoring Surveys

HCC will be responsible for maintenance of the wetland mitigation areas as part of normal operations and maintenance of the nine-hole golf course. To evaluate the efficacy of the wetland mitigation plan, annual vegetation monitoring surveys will be performed by VHB or other qualified personnel. Monitoring will commence with a baseline survey in Year 1, which will be the year that installation of the mitigation areas is completed.

A list of dominant plant species and their estimated relative frequency and percent areal cover will be identified once annually during the growing season within the wetland mitigation areas. The survey will occur within one vegetation monitoring plot selected during Year 1 for each of the eight wetland mitigation areas shown on the Landscaping Plan (see Attachment B). The monitoring plots will remain fixed over the course of the monitoring period to facilitate comparisons between years. Plot locations will be marked with flagged wooden stakes (or similar durable materials) and recorded with a sub-meter Global Positioning System (GPS) unit, to allow for repeat sampling throughout the monitoring period. The monitoring plots will be used for herbaceous layers (non-woody plants and woody plants less than 3.28 ft tall), a 15-foot diameter plot will be used for saplings/shrubs (woody plants less than three inches in diameter at breast height (dbh) and taller than 3.28 ft), and a 30-foot diameter plot will be used for trees (woody plants greater than three inches dbh). In

cases where the plot extends outside the mitigation area, the shape of the plot will be adjusted accordingly to remain within the confines of the mitigation area. The location of monitoring plots will be determined after planting of the mitigation areas is complete, to ensure the plots representatively sample each mitigation area. Permanent photograph locations will be established for each plot during repeat visits to develop a photo record during the monitoring period.

The following data will be collected at each mitigation area:

- Site information Wetland/plot number, wetland type, date, observer(s).
- Hydrology Water depth or depth to saturated soils will be recorded to the nearest inch. Depths will be recorded at the center of the monitoring plot.
- Vegetation percent cover The absolute areal cover of plant species will be visually estimated within the monitoring plot. Each species rooted within the plot will be identified, along with the species wetland indicator status and its relative frequency within the plot. The percent cover of open water or exposed soil also will be recorded, if applicable. Areal cover estimates will be based on the USACE cover class ranges shown in Table 1.
- Plant survival Each species identified within the monitoring plot will be assigned one of three overall fitness categories: (1) thriving, (2) alive but stressed, (3) dead or near dead.
- Invasive plant species Any invasive plant species rooted within the monitoring plot will be noted, and absolute areal cover will be estimated visually. The areas surrounding the monitoring plot will be inspected to identify any invasive plant species.
- Photographs Representative photographs will be taken annually at each monitoring plot, from permanent photograph locations to maintain consistency and allow for comparison between yearly monitoring surveys.
- Magee-Hollands rankings rankings for the two targeted wetland functions (Diversity of Wetland Vegetation and Contribution to Abundance and Diversity of Wetland Fauna) will be calculated for each wetland.

Table 1: Areal Cover Class Ranges

Areal Cover Range (%)	0-6	6-15	15-26	26-50	50-76	76-95	95-100				
Cover Class	3	10.5	20.5	38	63	85.5	97.5				
Source: LISACE 1987											

Source: USACE, 1987

2.3 Reporting

Annual monitoring reports summarizing the status of the monitoring and maintenance activities will be prepared each year during the monitoring period. The monitoring period will be a minimum of three years and will conclude when the mitigation plan meets the mitigation goals outlined in Section 2.1. A copy of the report will be provided to HCC and the Village no later than December 15th of the year during which the monitoring occurred. Each report will include:

- Maps showing wetlands, wetland mitigation areas, monitoring plots and photograph locations.
- > Data and results of the monitoring survey.
- > Analysis of invasive plant species within the mitigation areas, as necessary.
- Photographs taken during the monitoring survey, with comparison to prior monitoring survey photographs, as necessary.
- Conclusions based on the monitoring survey results, including an assessment of whether progress toward the identified mitigation goals has occurred.
- Recommendations for maintenance or adaptive management efforts to address site conditions that may hinder the success of the wetland mitigation plan.

2.4 Responsible Party

Hampshire Country Club, LLC 1025 Cove Road Mamaroneck, New York 10543 (646) 723-4750

3 Adaptive Management Plan

3.1 Background

The Wetland Mitigation and Monitoring Plan includes an adaptive management strategy to address unforeseen changes in the mitigation areas or surrounding site conditions. Adaptive management measures will be implemented as necessary to address both foreseeable and unforeseen circumstances that may adversely affect the success of the wetland mitigation plan, including colonization by invasive plant species, as discussed in Section 3.2.

The results of each annual monitoring survey will be used to determine whether adaptive management measures are warranted, and any such measures will be included in the recommendations section of the annual monitoring report. HCC will be responsible for implementing the adaptive management recommendations, as necessary.

3.2 Invasive Species

In the event that significant occurrences of invasive plants that threaten the success of the mitigation plan are observed within the mitigation areas during the annual monitoring surveys, HCC will be responsible for implementing methods designed to limit or remove the plants.

A variety of methods are available for controlling invasive pants, and the selection of method depends largely on the invasive plant(s), extent of the occurrence and site conditions. If the occurrence is deemed minor, hand-removal will be the preferred method to limit the overall impact within the affected mitigation area(s). For larger occurrences, mechanical means may be employed in accordance with applicable regulations and with appropriate controls to protect adjacent areas and restore native plantings within the affected area. In some cases, biological controls (e.g., beetles) may be effective for limiting the growth of invasive species such as purple loosestrife (*Lythrum salicaria*), although such controls may not completely eliminate all of the targeted plants.



Attachment A





↑ 。

170

340 680 Feet

Hampshire Country Club - PRD

Village of Mamaroneck, NY



Attachment B





Landscaping Plan

Source: Kimley-Horn

Tree Protection

- O START OF CONSTRUCTION.
- CUNTRACTOR SHALL NOT OPERATE VEHICLES WITHI PROTECTION AREA, CONTRACTOR SHALL NOT STORE MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, TREE PROTECTION AREA.
- DAMAGE TO EXISTING TREES CAUSED BY THE CO BE REPAIRED BY A CERTIFIED ARBORIST AT THE EXPENSE

Edge of Woods Clearing

EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORAF EROSION CONTROL FENCE AND HAY BALE BARRIER. ERECT BARRIER AT EDGE OF THE EARTHWORK CUT LINE PRIOR TO TREE CLEARING. LAY OUT THIS LINE BY FIELD SURVEY.

Plant Maintenance Notes

- CONTRACTOR SHALL PROVIDE COMPLETE M
- CONTRACTOR SHALL PROVIDE ALL MATE EQUIPMENT FOR THE COMPLETE LANDSO WATER SHALL BE PROVIDED BY THE COM WATERING SHALL BE REQUIRED DURING THE GROWING 3 WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEE

CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE ENE OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THA THE

- TOP OF ROOTBALL 1 INCH ABOVE FINISH GRADE

EXCAVATE SHRUB BED TO REQUIRED DEPTH AND BACKFILL WITH SPECIFIED SOIL MIX: SOIL MIX SHALL BE CONTINUOUS WITHIN EACH SHRUB BED

- 4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLAN

AMERICAN AS DOCUMENTS.

Planting Notes

NO PLANT MATE CONSTRUCTION CONTRACTOR S CONFLICT.

- TREES: Acer rubrum Red Maple Betula nigra River Birch Liriodendron tulipifera Tu

SHRUBS ERENNIALS / ORNAMENTAL GRAS s spicata - Spike Gras ris obtusa - Blunt Spik biscus moschuetos var. palustr s versicolor - Blue Flag Iris ncus effusus - Common Rush ncus gerardii - Black Grass inicum virgatum - Switchgrass ilidaoo semeervirens - Seaside

1/16 LD_601



UNIT

LIMIT

FOUNDATION PLANTINGS SI - Flowering Dogwood - Serviceberry - Inkberry Holly - Japanese Holly - Japanese Pioris

S

NOTES

06/16

UNIT

UL RE & COMBINATION OF THE FOLLOWING SPECIES

NOTES 1. STAKING IS NOT REQUIP TREES UNDER 10' HIGH.

PAINT TOP OF STAKES ORANGE OR REFLECTIVE RED TAPE.

Otto Luyken Cherry Laurel Uriope muscari Big Blue Stella D'Oro Daylly Crama Brues Trickread

Foundation Planting - Single Family Home

LIMIT O

OUNDAT – Flower – Service – Inkberr – Japane

NOTES

UNIT

SHALL BE A COMBINATION OF THE FOLLOWING SPECIES:

Otto Luyken Cherry Laure Liriope muscari Big Blue Stella D'Oro Daylly Cranse Brules Tickreed

Foundation Planting - Two Unit Configuration

UNIT

LIMIT OF

NOTES

06/16

NOTES 1. STAKING IS NOT REQUIRED FOR TREES UNDER 3" CALIPER.

NYLON TREE TIE WEBBING (LOOSELY TIED)

FOUNDATION F Howering Do Serviceberry Inkberry Holly Japanese Holly

,REE PI. ROOTBALL TREE TIE

UNIT

SHALL BE A COMBINATION OF THE FOLLOWING SPECIES: OTIO Lupking Cherry Laure Liriope muscari 'Big Blue' - Stella D'Oro Daylly Creme Brulee Tickseed

NOTES

STAKING IS NOT REQUIRED FOR TREES UNDER 12' HIGH.

NYLON TREE TIE WEBBING (LOOSELY TIED)

Foundation Planting - Three Unit Configuration

UNIT

ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHTECT PRIOR TO INSTALLATION.

CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE O CONFLICTS. CITON HAS BEEN COMPLETED IN THE IMME FOR SHALL NOTIFY OWNER'S REPORT

A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALL UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY C REPRESENTATIVE

ALL TREES SHALL BE BAI NOTED IN THE DRAWING

FINAL QUANTITY FOR EACH PLANT TYPE S SHOWN ON THE PLAN, THIS NUMBER SHAI CASE OF ANY DISCREPANCY BETWEEN QI PLANT LIST AND ON THE PLAN. THE CONT DISCREPANCIES BETWEEN THE NUMBER 7 PLANT LIST AND PLANT LABELS PRIOR TO AND ON THE PLAN. THE CONTRA AND ON THE PLAN. THE CONTRA ANCES BETWEEN THE NUMBER OF I

ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED E LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE C REPRESENTATIVE.

ALL PLANT MATERIALS SHALL BE GU

THIS PLAN IS INTENDED FOR PLANTING PURPOSES. RE CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION

WETLAND / INFILTRATION BASIN NOTES:

WETLAND EDGE PLANTINGS & INFILTRATION BASINS SHALL CONSIST OF A COMBINATION OF THE FOLLOWING SPECIES:



Landscaping Plan Planting Details & Notes

Source: Kimley-Horn

