GOVE ENVIRONMENTAL SERVICES, INC.

WETLAND
&
NATURAL RESOURCES REPORT
For
REVISED HUDSON LOGISTICS CENTER PROJECT

43 Steele Road

Hudson, NH

September 9, 2022

Prepared By

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1.0 Introduction

The following report provides details on the wetland and other natural resources on the Green Meadow Golf Club property in connection with the proposed amendment to the Conditional Use Permit for the Hudson Logistics Center project (HLC) (the "Amended Project") which was originally approved on April 21, 2021 ("the Approved Project"). The primary purposes of this report are to document the wetland delineation process and provide detailed descriptions of the wetland resources on the property and an assessment of their functions and values. This report also includes a summary of the proposed wetland and buffer impacts in the context of avoidance, minimization, and compliance with Article IX of the Town of Hudson's Zoning Ordinance (the "Wetland Ordinance"). Limited information on Rare Threatened and Endangered species has been included in this report. More detailed information on wildlife and wildlife habitat in general can be found in the Wildlife Report[1] by Lucas Environmental which is available under separate cover.

2.0 Wetland Resources

2.1 Wetland Delineation

Although limited flagging along the access roads was completed in 2017, the majority of the wetland delineation depicted on the *Hudson Logistics Center* amended plans was conducted during the fall of 2019. All wetlands within the project area were flagged and reviewed by Brendan Quigley, NHCWS #249, utilizing the following standards:

1. *US Army Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (Jan 1987) **AND** Regional Supplement to Corps of Engineers Wetland Delineation Manual; Northcentral and Northeast Region, Version 2.0, January 2012.
2. Field Indicators of Hydric Soils in the United States, Version 8.0, 2016 **AND (for disturbed sites)** *New England Hydric Soils Technical Committee. 2017 Version 4, Field Indicators for Identifying Hydric Soils in New England.* New England Interstate Water Pollution Control Commission, Lowell, MA.
3. *National Wetland Plant List*, Version 3.3 (2016).

[1] *WILDLIFE HABITAT EVALUATION, 2022 UPDATE Hudson Logistics, Center Steele Road, Hudson,New Hampshire*, Lucas Environmental, LLC, September 9, 2022

All flagging was surveyed by Hayner Swanson, Inc, either in 2017 or recently in 2019/2020. ACOE wetland delineation data forms were prepared by local request in late November and early December of 2020 and can be found in Appendix C.

2.2 Wetland Descriptions

The property has several extensive areas of wetlands in addition to the large areas of manicured lawn that dominate the property. Other than the relatively undisturbed bank of the Merrimack River, which defines the entire 5,000-foot (+/-) western boundary of the property, wetlands on this site are characterized by a long history of alteration that predates regulation of freshwater wetlands. Prior to construction of the golf course in the early 1950's, the property was largely cleared and actively managed for agriculture like most of the surrounding land. The most substantial changes occurred between 1952 and 1965 during which intensive aggregate extraction and alteration of the landscape was carried out to create the two 18-hole courses that exist at the site today. During this time, naturally occurring wetlands onsite underwent varying degrees of modification by clearing, filling, channelization, and excavation. Significant areas of upland, wetland, or uplands adjacent to wetlands were excavated to create water features for the golf course. Several of these excavations created isolated circular ponds, while others remain hydrologically connected and form a complex arrangement of wetlands, channels, and waterbodies in the eastern portion of the site. A figure depicting an overview of the wetlands on the property is included in the Figures Section. Also included is an overlay of the same wetlands on a 1952 aerial photo, clearly demonstrating the alterations carried out to create the golf course.

Based on drainage and connectivity, the resource areas on the site can be divided into four (4) main categories: the Merrimack River, the isolated ponds, northeast wetlands, and southeast wetlands.

Merrimack River
The Merrimack River lies along the entire western boundary of the site. All the wetlands and streams on the property, except for the isolated ponds drain to the river. The mostly steep wooded banks are relatively undisturbed and forested. One exception is where the golf course maintains access to seasonally deploy a pipe into the river for irrigation purposes. There are no vegetated wetlands associated with the river in this location. The Merrimack River has also been designated a Prime Wetland (without buffer) by the City of Nashua.

Isolated Ponds
There are four (4) isolated ponds on the site that were created as water features during construction of the golf course. These ponds are permanently flooded and isolated from each other and other wetlands. The ponds have a very narrow fringe of emergent or scrub-shrub wetland around their perimeters which is subject to regular, or at least periodic mowing.

Northeast Wetlands
This is a largely forested wetland system occupying the northeast corner of the property. This area contains several excavated ditches which have apparently been created to convey stormwater from a large detention pond and other drainage associated with development on Lowell Road. The entire wetland complex drains to a relatively undisturbed and unnamed perennial stream which flows north through a culvert under the Circumferential Highway/Sagamore Bridge Road. This stream reaches the Merrimack River approximately 1600-feet to the northwest of the site.

Southeast Wetlands
This is a more diverse system of forested, scrub-shrub, emergent, and open water wetlands directly or indirectly associated with Limit Brook which is a perennial tributary to the Merrimack River. The forested components of this system lie directly east and south of the Mercury Systems parcel and are associated with Limit Brook by way of several modified or created connections. Limit Brook flows onto the property in the southeast corner, makes a broad turn to the west, and leaves the site to the south. Limit Brook flows into the Merrimack Rover approximately 1.3 miles to the south just past the Massachusetts state line. The middle portion of the original flow path of the brook was extensively modified at the time the golf course was constructed to create several large water features. These ponds continue to carry the flow of the brook and physically connect other areas of wetland but no longer resemble a stream or natural wetland system. The emergent and scrub shrub wetlands associated with the stream where it enters and leaves the property, however, are relatively undisturbed and represent some of the more functionally intact and valuable wetlands on the property. The downstream portion of scrub-shrub and emergent wetland south of Steele Road also lies in the 100-year floodplain of Limit Brook and is therefore a Priority Resource Area.

A more detailed description and functional assessment of these wetlands is provided in Section 3.

2.3 Vernal Pools

A vernal pool investigation was conducted in the spring of 2020. Wetland areas were investigated for the presence of suitable ponding and evidence of vernal pool breeding activity, primarily through counting of egg masses. The topography of the site and character of the wetlands did not suggest extensive vernal pool habitat. The permanently flooded ponds on the site support large populations of predatory frogs and likely fish populations. These types of areas are very rarely suitable for vernal pool breeding activity, and none were identified in these areas. Most of the forested and emergent wetlands on the site lack depressions with adequate depth and seasonal hydrology.

Only one area of vernal pool breeding was noted on the property, located in the north end of the forested wetland that crosses through the Mercury Systems property. Its location is

depicted on the Wetland Overview Figure and on the plans. Wood Frog chorusing was heard throughout the wetland, which was flooded on March 26, but no egg mases were found. A total of 14 wood frog egg masses were identified in a single area at the northern end of this wetland during a follow up survey on April 4, 2020.

The current flooding of this wetland is being maintained by a beaver dam at its outlet, so it is not clear that this entire forested wetland represents suitable stable habitat for vernal pool breeding. Without this impoundment the wetland would only be saturated, as can be seen in the 2012 photo that is used in the Wetland Resources Overview figure contained in the Figures Section. The area where egg masses were identified may in fact be the only location where a suitable pool exists without the beaver impoundment.

3.0 Wetland Function and Value Assessment

3.1 Methods

The wetland function and value assessment was conducted using the US Army Corps Highway Methodology guidelines. To facilitate the evaluation of the complex array of wetlands on the property they were broken up into eight (8) Evaluation Areas based on connectivity and classification. The extent of each evaluation area and corresponding reference number is depicted on the *Wetland Evaluation Areas* figure included in the Figures Section at the end of the narrative. The evaluation data forms (NHDES version) are included in Appendix C.

The US Army Corps Highway Methodology considers 13 categories of function or value within a particular wetland area:

- **Groundwater recharge/discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where ground water can be discharged to the surface.
- **Floodflow Alteration:** This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
- **Fish and Shellfish Habitat:** This function considers the effectiveness of seasonal or permanent water bodies associated with the wetland in question for fish and shellfish habitat.
- **Water Quality—Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.
- **Water Quality—Nutrient Removal/Retention/Transformation:** This function relates to the effectiveness of the wetland to prevent adverse effects of excess

nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

- **Production Export:** This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.
- **Sediment/Shoreline Stabilization:** This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.
- **Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and or migrating species must be considered.
- **Recreation:** This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.
- **Educational/Scientific Value:** This value considers the effectiveness of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.
- **Uniqueness/Heritage:** This value relates to the effectiveness of the wetland or its associated water bodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.
- **Visual Quality/Aesthetics:** This value relates to the visual and aesthetic qualities of the wetland.
- **Threatened or Endangered Species Habitat:** This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species

Functions are self-sustaining properties of wetlands, which exist in the absence of human involvement. Values refers to the benefits gained by human society from a given wetland or ecosystem and their inherit functions. Functions and values identified as "primary" have been determined to be significant features of the wetland being evaluated. This does not necessarily indicate the wetland supports these functions or values at a significant level in comparison to other wetlands in the region or even near the site.

The wetlands were also evaluated for "Ecological Integrity" utilizing Section 1 of the NH Method for the Evaluation of Freshwater Wetlands. Rather than relating to a single function or value, ecological integrity considers the overall health and completeness of the wetland system in the context of the larger ecosystem. The NH method also produces a numeric score for Ecological Integrity from 1 to 10. Generally, a wetland in an untouched area of wilderness would have the highest score of 10 while one in the middle of a busy city would have the lowest scores near 1. For consistency with the rest of the function and value assessment, Ecological Integrity was assessed using the same eight

evaluation areas. It should be noted, however, that the broader concept of ecological is more difficult to apply to small portions of the same wetland system or to large rivers such as the Merrimack.

A discussion of each evaluation area and the associated functions and values is provided in the sections below.

3.2 Identified Functions &Values

Evaluation Area 1

This is the Merrimack River and its steep bank which forms the western boundary of the project site. This resource is classified as lower perennial riverine, with a permanently flooded, unconsolidated bottom (R2UBH)[2]. The steep bank extending from the edge of the maintained golf course down to the river edge is forested with mature pine, oaks, and lesser amounts of birch and maple.

The Merrimack River is a major river in New Hampshire supporting numerous functions and values at a high level. *Wildlife habitat, Aesthetic and Recreational Value, Cultural Significance*, and *Shoreline Stabilization* are among the primary functions and values of the river in this area. Most relevant and significant for this property is likely the Shoreline Stabilization value. Rather than being supported by the river itself, this value is supported by the forested high bank between the high-water mark and the top of the bank at the level of the golf course. This area serves to stabilize the shoreline and contain peak flow during flood events.

The NH Method documentation notes the limitations of the process with respect to large river systems because of the multiple and wide-ranging set of variables that can affect these types of resources. The broader Ecological Integrity of the Merrimack River has certainly been diminished historically by intensive development in its watershed, dams, history of industrial use, and loss of floodplain. A more recent focus on such issues, particularly water quality, have resulted in meaningful improvements and the river remains an important ecological corridor in NH. At this location, the roughly 1-mile long naturally vegetated bank and lack of more intensive development indicates a relatively high Ecological Integrity (score of 6.3) compared to the other resources on this site and in the immediate area.

Evaluation Area 2

This evaluation area consists of a complex of wetlands occupying the northeast corner of the site. The predominant wetland type is forested wetland dominated by red maple with

[2] Cowardin, L. M., 1979. *Classification of Wetlands and Deepwater Habitats in the United States*. Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.

an understory of witch hazel, highbush blueberry, and nannyberry. Royal fern, cinnamon fern, and sensitive fern are common in the herbaceous layer. These wetlands are classified as deciduous, forested wetland, with saturated hydrology (PFO1B). A section of drainage ditch originating at the intersection of Lowell Road and the driveway for Parcel 234/4 (Mercury Systems) is included in this evaluation area.

Water flows into the wetland from the surrounding uplands and from stormwater discharges associated with the adjacent development, including a large detention basin and drainage ditch. Several excavated ditches in the wetland and at the edge of the existing golf course direct water to a small unnamed stream, which is depicted as perennial on the USGS map. Alterations and ditching in this area make the original path and extent of this stream unclear. Currently, a natural channel only exists within the wetland just south the highway before it flows off site through a culvert under the roadway. The stream ultimately drains to the Merrimack River approximately 1600' to the northwest of the site.

The Primary functions of the wetlands in Evaluation Area 2 include *Flood Flow Alteration*, *Sediment/Toxicant Retention*, and *Nutrient Removal/Retention/Transformation*. These functions are derived from a combination of proximity to development and association with a stream that is a tributary to the Merrimack River. Significant runoff from adjacent developed areas is directed to these wetlands where there are numerous opportunities for sediment trapping and nutrient transformation before leaving the site. The constricted outlet and basin character of the lower portion of the wetland also provides some storage during periods of significant rainfall, and therefore these wetlands serve a Flood Flow Alteration function. These functions are somewhat diminished overall by the diches that have been excavated in the wetland and the wetlands position low in the watershed.

Wildlife Habitat and Production Export are also supported in the wetland but have not been considered primary functions. Wildlife Habitat and Production Export function is derived from the variety of hard and soft mast producing species as well as the well-developed multi-canopy character of the forested wetland. These functions are limited, however, by the proximity of development and transportation infrastructure on all sides of the wetland.

The Ecological Integrity of this wetland is very low (score of 2.7) due to proximate development including commercial development along Lowell Road, internal disturbance, and disrupted surface hydrology, including the long culvert which effectively separates it from the Merrimack River.

Evaluation Area 3

Evaluation Area 3 consists primarily of forested wetland located just south of Area 2 and shares many of the same characteristics with the lower part of Evaluation Area 2. It is a

red maple dominated swamp, with understory species including winterberry, highbush blueberry, royal fern, cinnamon fern, and skunk cabbage. The long-term hydrology of the wetland is likely saturated/seasonally flooded, but appears to be periodically flooded due to beaver activity at its southern end. The wetland has therefore been classified as, deciduous, forested, with a saturated and seasonally flooded hydrology that is influenced by beaver (PFO1Eb).

The wetland drains south through an excavated channel connecting it to Evaluation Area 5 and ultimately Limit Brook. Water levels in the channel vary seasonally, and with beaver activity, resembling a linear pond at higher water levels, and more of an emergent wetland in the middle of the summer. Given its narrow shape and limited water depth, even at high water, this area has been classified as a semi-permanently flooded excavated emergent wetland with a saturated scrub shrub edge (PEM2Fx/PSS1B). Emergent vegetation is dominated by a variety of sedges, rushes and wildflowers. Dominant species along its shrub edge include Silky dogwood, Meadowsweet, gray birch, and glossy buckthorn.

An area of hydric soils and wetland hydrology also extends from the forested portion of the wetland into the maintained turf of the adjacent golf course. This area has been evaluated separately as Evaluation Area 3.1 given its very different characteristics and function.

The primary functions of Evaluation Area 3 are *Nutrient Attenuation*, *Flood Flow Alteration*, and *Wildlife Habitat.* Because of its emergent and forested characteristics that occur between managed golf course turf and areas of ponded water, Nutrient Attenuation is an important function of this area. Excess nutrients in runoff are taken up and held as vegetation rather than entering areas of open water. The restricted outlet at the beginning of the narrow channel, even in the absence of the current beaver dam, increases retention time, supporting nutrient transformation. Heavy algae growth in the currently flooded wetland provides strong evidence that the wetland does carry out this function. This storage capacity created by the restricted outlet also supports Flood Flow Alteration function. Wildlife Habitat and Production Export are present in the form of numerous soft-mast producing species in the scrub-shrub stratum that are likely utilized by numerous songbirds and small mammals. The shallow pond-like character of the connecting ditch, as well as the flooded forested wetland are suitable to amphibians and turtles. Vernal pool breeding activity, though very modest, was in fact noted in the forested wetland during the spring of 2020. This is discussed further in the Vernal Pool section.

The Ecological Integrity of this wetland is very low (score of 3.5) due to proximate development, disturbance, and disrupted hydrology. It scored slightly higher than Evaluation Area 2, however, because less of the adjacent development consists of impervious surfaces and fewer invasive species are present.

Evaluation Area 3.1

The wetland being evaluated in this area consists of maintained lawn area extending between the forested wetland in Area 3 to one of the ponds in Area 5. Both hydric soils and signs of wetland hydrology were documented in this area, and although vegetation consists of golf course turf, this is an artificially maintained condition that would cease if mowing ended. This wetland has been designated as saturated wet meadow with a "farmed" modifier (PEM2Bf). This area may have represented the extent of wetland in this area predating large scale alteration of the landscape or could have developed due to these alterations and the new drainage patterns that it created.

Though technically qualifying as wetlands, these areas of maintained lawn hold very little, if any, functional wetland value. Other than intermittent ponding, there is no surface water, no wildlife habitat, or unique or interesting features. The primary function of this wetland is limited *Groundwater Discharge.* The Ecological Integrity of this wetland is the lowest of all areas evaluated with a score of just 2.2. The wetland consists entirely of a managed golf course turf but gains points for lack of impervious surface, roads, or modifications to its surface hydrology.

Evaluation Area 4

This area is located in the eastern portion of the project site just south of Evaluation Area 2 but separated by the access driveway for Parcel 234/4. Evaluation Area 4 consists of forested, Red Maple dominated wetland similar to that described in Evaluation Areas 2 and 3 but with stable saturated hydrology (PFO1B). The wetland drains south toward Limit Brook but is not directly associated with the waterway.

The Primary functions of the wetlands in Evaluation Area 4 include *Flood Flow Alteration, Sediment/Toxicant Retention, and Nutrient Removal/Retention/Transformation*. Wildlife Habitat and Production Export, and Groundwater Discharge are also supported but have not been considered primary functions of this area. The Ecological Integrity of this wetland is higher (score of 5.1) in comparison to most of the other areas evaluated due to the larger forested area in which it exists and less disturbed condition overall.

Evaluation Area 5

This evaluation area consists of wetlands associated with Limit Brook which is a perennial tributary to the Merrimack River. The stream enters the site from the east, first flowing through a complex of relatively natural emergent and scrub shrub wetlands bordered by areas of golf course turf. These wetlands are areas dominated by cattail, numerous sedges, rushes, silky dogwood, and arrow-wood. These wetlands are classified as PEM1E/PSS1E. The stream then flows into two interconnected ponds that were excavated during construction of the golf course as water features. Their water level is

maintained by a small dam located adjacent to Steele Road. These ponds are too small and shallow to be classified as lacustrine features, so they are classified under the Palustrine system as areas of Unconsolidated Bottom, in this case also excavated and impounded (PUBHxh). The ponds have fringe of scrub-shrub and emergent saturated wetlands (PEM2/PSS1E) but are otherwise surrounded by golf-course. Dominant species in the fringe wetland areas include speckled alder, purple loosestrife, reed canary grass, and numerous other meadow species such as goldenrods and asters.

The primary functions of the wetlands in Evaluation Area 5 are *Wildlife Habitat, Nutrient Attenuation, and Flood Flow Alteration*. The variety of wetland types present in this wetland complex, in association with a perennial stream and ponds, support a number of wildlife habitat functions. These range from the presence of numerous soft-mast producing species in the scrub-shrub stratum which provides foraging habitat for numerous songbirds and small mammals, to the ponds, typically suitable for warm water fish species, amphibians, and turtles. Though several barriers exist to free travel along the Limit Brook corridor it likely does provide access between the habitats on this site and a large utility right-of-way located to the south which extends to the Merrimack River.

Because of its association with a golf course turf and a perennial stream, Nutrient Attenuation is another important function of this area. Excess nutrients in runoff are taken up and held as vegetation rather than entering areas of open water. Additionally, the broad nature of the areas on either side of the stream provides floodwater storage during major rain events and during spring snowmelt. This wetland complex also has several secondary functions including Shoreline Stabilization and Production Export.

Despite the variable habitat and other aspects of the wetland that make it suitable for the functions described above, its Ecological Integrity is quite low with a score of 3.2. This is due to the extensive modification of surface hydrology and its surroundings which are comprised almost entirely of active golf course.

Evaluation Area 6

This area is the continued flow path of Limit Brook extending from the south side of Steele Road to the southeastern property boundary. It has been evaluated separately since these wetlands also lie within the 100-year floodplain of Limit Brook and therefore qualify as a Priority Resource Area. It consists of a shallow pond, an area of ditched wet meadow, and a more natural emergent and scrub-scrub shrub wetland extending to the southern property line. The excavated pond is similar to those in Area 5 but appears shallower and more likely to have vegetation in the water. It has therefore been classified as an area of Palustrine Aquatic Bed wetland (PABHxh). A narrow, ditched channel extends from a pipe at the downstream end of the pond through maintained turf. Dominant species in the fringe wetland around the pond and this ditched wet meadow are consistent with Area 5 although shrubs are largely absent, so they have been classified as

saturated emergent (PEM2B). The final portion of wetland in the evaluation area is a largely natural emergent and scrub-scrub shrub wetland through which Limit Brook flows unimpeded off site to the south. This wetland is similar to the wetland in Area 4 where Limit Brook enters the site. It has numerous sedges, rushes, ferns, silky dogwood, and arrow-wood. This wetland is classified as PEM1E/PSS1E.

The primary functions of the wetlands in Evaluation Area 6 are, *Flood Flow Alteration, Nutrient Attenuation*, and *Wildlife Habitat***.** This area lies within the mapped 100-year floodplain associated with Limit Brook, so the pond and wetland areas are clearly important flood storage areas. The pond, with its constricted outlet and narrow, densely vegetated swale, act as an effective water quality treatment feature. Together they can intercept and treat runoff from the expanse of managed turf surrounding them prior to releasing it to more natural wetlands downstream. These more natural areas hold the greater wildlife value, with numerous food sources, cover, and connectivity to off-site habitat areas. This wetland complex also supports Shoreline Stabilization and Production Export.

As with Area 5, the Ecological Integrity of this wetland is substantially impacted by the adjacent golf course and modified surface hydrology despite characteristics which clearly support several important wetland functions. The Ecological Integrity score of this wetland is 3.2.

Evaluation Area 7

This Evaluation Area consists of the 4 isolated excavated ponds located throughout the course. Like the ponds discussed in Areas 5 and 6, these ponds were excavated during construction of the golf course to create water features. Unlike the ponds along the course of Limit Brook however, these ponds are hydrologically isolated features. Only a very narrow fringe of emergent wetland exists around their nearly circular perimeters, which is subject to regular mowing. Species in this fringe wetland include purple loosestrife, reed canary grass, soft rush, and common meadow species such as asters and goldenrods. The ponds have been classified as permanently flooded unconsolidated bottom wetlands created by excavation (PUBHx).

The function and value of these ponds is limited by their small size, isolated hydrology, and setting surrounded by managed golf course turf. Their primary function is *Groundwater Recharge/Discharge*. A secondary function is very limited Wildlife Habitat for species such as eastern painted turtles, green frogs, mallards, and Canada geese which have been observed utilizing the ponds and their margins.

The isolated ponds received a low Ecological Integrity score of just 3.1. This is primarily due to their construction as golf course water features which by design are surrounded by an active golf course and subject to related regular maintenance.

Evaluation Area 8
This is a small, isolated depression located at the edge of a fairway in the southwest corner of the project site. This area may have been created or adapted to function as a detention pond as there are several pipes entering the area. Soil is sandy and it does not appear to hold water for significant periods of time but also does not have an obvious outlet. Vegetation, while sparse, includes sensitive fern, purple loosestrife, and various weedy species. This area may be classified as an intermittently flooded, excavated, wet meadow (PEM2Jx)

The primary functions of this wetland are *Groundwater Recharge* and *Sediment/Toxicant Retention*. Both these functions are derived from the fact that the area receives runoff from the surrounding golf course and it infiltrates it through a sandy substrate. This provides groundwater recharge and prevents sediment and from entering the Merrimack River which lies close by.

Though not a pond, this small wetland feature is a similarly constructed, though possibly specifically for the management of runoff. This area was included in the evaluation of the isolated ponds and received an Ecological Integrity score of 3.1 for the same reasons.

4.0 Rare, Threatened, & Endangered Species

A updated review request was submitted to New Hampshire Natural Heritage Bureau (NHB) for the presence of known species of concern on or near the site. The updated review lists one invertebrate species, one vertebrate species and two plant species. Respectively, these are Persius Dusky Wing (*Erynnis persius persius*), Eastern Box Turtle (*Terrapene carolina*), River Birch (Betula nigra), and Arrow-Head Rattlebox (*Crotalaria sagittalis*). Other than the omission of Wild Lupine (*Lupinus perennis ssp. Perennis*), which is associated with Persius Dusky Wing, these are the same species identified during review of the Approved Project. The NHB Data Check Report can be found in Appendix D.

During the initial review, surveys for Arrow-Head Rattlebox, and River Brich were conducted as requested by NHB. Arrow-Head Rattlebox was not observed during the surveys, which also concluded that there was no suitable habitat for this species within the impact area. NHB concurred with these results. A single occurrence of River Brich was identified on the banks of the Merrimack River and appropriately reported to NHB. Since the occurrence is located outside of any proposed impacts and within a proposed preservation area, NHB previously expressed no further concerns for this species. The updated review report indicates that unless plans change with respect to the protection of the River Brich, there is no need for further coordination on rare plant species.

During the review for the Approved Project a survey was also conducted for Wild Lupin, essentially as a proxy for the potential presence of Persius Dusky Wing, which has an obligated host relationship with the plant. No Wild Lupin was identified during that

survey and neither NHB nor NH Fish & Game (NHFG) expressed any further concerns about these two species. Following additional coordination with NHFG regarding Eastern Box Turtle and wildlife habitat more generally, NHFG indicated that they had no further comments on the previously Approved Project. The Amended Project includes all the same elements that contributed to this determination, including extensive preservation and restoration of existing golf course area, use of oversized crossing structures, and wildlife friendly stormwater management. More detail information of wildlife habitat can be found in the Wildlife Report.

5.0 Relation to the Proposed Project

This report is being submitted in connection with a revised proposal for the Hudson Logistics Center project which involves the redevelopment of the of the roughly 375-acre Green Meadow Golf Club property into a warehouse and distribution facility. The Approved Project consisted of three buildings, two new access driveways extending to the site from Lowell Road, and related site improvements. The Approved Project involved impacts within the Hudson Wetland Conservation Overlay District (the "District") totaling 233,869 SF (55,525 SF wetland and 178,344 SF Buffer) which were approved by way of a Conditional Use Permit from the Planning Board on April 21, 2021.

The Amended Project utilizes the same access roads but includes only a single building and requires 13% less impact within the District or 203,061 SF (50,332 wetland 152,729 buffer) at 13 discrete impact areas as shown on the Wetland Impact Plan.[3] Over 95% of the total proposed impact within the District (Impact Areas A through H & 1, 2) is related to the two access driveways, one located centrally at the existing driveway for #267 Lowell Road (Green Meadow Drive), and a second located in the northwest corner of the property (Northern Access Road) (the "Access Impacts". Three additional impacts totaling 9,099 SF (Impact Areas 3, 4, 5) are necessary in the development area to install outfalls for stormwater management and are, as detailed below, primarily temporary in nature, do not include impervious surface, and will be restored (the "Lot Development Impacts").

The sections below provide a summary of the proposed impacts as they relate to the principles of avoidance and minimization and compliance with the Conditional Use Permit criteria contained within §334-36(C) and §334-37 of the Town's Wetland Ordinance.

[3] *Hudson Logistics Center, Wetland Impact Plan* by Langan Engineering & Environmental Services.

5.1 Section 334-36(C)(2)—Access Impacts

Section 334-36(C)(2) of the Wetland Ordinance permits the issuance of a Conditional Use Permit to construct streets, roads, and other access ways, including driveways, footpaths, bridges, and utilities if they are essential to the productive use of the land beyond the District, are located and constructed in such a way as to minimize the potential for detrimental impact to the District, and there are no viable alternatives available.

5.1.1 The Access Impacts are essential to the productive use of the land beyond the District & there are no viable alternatives.

Access to the Site is limited by the existence of the Merrimack River to the west, elevated highway infrastructure to the north, and by residential development to the south. The only possible access to the property is from Lowell Road east of the Site. However, wetlands extend along the entire eastern portion of the property, including along the only existing access at Steele Road which crosses Limit Brook three times. Steele Road would require significant improvements to serve as an access for the Amended Project (or likely any comparable development of the property) necessitating impacts to Limit Brook and its associated high value wetland. There are therefore no alternative options for access which do not incur impacts to wetlands.

More than one access is required for the Amended Project to efficiently and safely mange traffic and provide for adequate emergency access. Considering the Site contains more than 200 acres of contiguous upland which is well suited for development, this requirement is not unique to the Amended Project. Utilizing Steele Road as an access is not feasible due to the nature of impacts to high value wetlands and other concerns related to its route through a residential neighborhood and suitability of the intersection with Lowell Road.

The proposed Access Impacts associated with the two proposed access driveways are, therefore, the only viable option for accessing the Site and are therefore essential to the productive use of land on the site that lies beyond the District. The two driveways have been designed to minimize impacts to wetlands and wetland functions and values to the greatest extent possible, as described in the following sections.

5.1.2 The Access Impacts are located and constructed in such a way as to minimize the potential for detrimental impact to the District

Access has been located to avoid impacts to high value resource areas such as would be required to Limit Brook and its associated wetlands if Steele Road was used. The Northern Access Road and Green Meadow Drive have been designed to avoid and minimize impacts within the District to the maximum extent practicable.

First, both roads have been aligned to cross wetlands at their narrowest points. Green Meadow Drive utilizes a short portion of the existing driveway for #267 Lowell Road (Mercury Systems) over an existing easement to limit interference with the private driveway and parking areas for Mercury Systems. Green Meadow Drive then follows the existing developed Mercury Systems site as closely as possible while maintaining road width and configuration for safe line-of-site and turning radius. Impacts in this location are thereby minimized by locating impacts at the wetland edge along existing development, which avoids potentially greater impact to wetland function and values through segmentation. Steeper grading has also been incorporated along this section of the roadway to limit the extent of impact necessary for the road. Green Meadow Drive then utilizes uplands and is aligned to cross the narrowest point of the main wetland (Impact Area F), thus avoiding a much more substantial impact that would be incurred by crossing the main wetland just to the north.

At Impact Area F, a 27.75-foot wide by 4.3-foot high open bottom structure will be used. As discussed in greater detail in Lucas Environmental's Wildlife Habitat Evaluation, this structure meets openness guidelines for wildlife passage through stream crossings, even though they do not technically apply at this wetland crossing. This approach will facilitate maximum wildlife movement between wetlands to the north and the ponds associated with Limit Brook to the south. The use of wing walls at either end of the structure has also allowed the width of the crossing, and therefore impacts, to be further reduced. Additionally, sloped curbing will be used along appropriate stretches of Green Meadow Drive to facilitate wildlife crossing (particularly for turtle species) and prevent entrapment within vertical curbing should they happen to encounter the road rather than the crossing structure.

The Northern Access Road utilizes an existing easement along Sam's Club driveway (Walmart Boulevard) to gain access to the Property at the northeast comer. The road utilizes uplands and a straight alignment to the narrowest portion of the wetland where a single crossing is proposed (Impact Area 1). This crossing will utilize 11-foot high retaining walls for the length of the proposed impact to avoid additional impacts due to slope grading. Like the crossing on Green Meadow Drive, a very large 12-foot wide by 7.5-foot high open bottom structure is also proposed which meets stream crossing guidelines for openness and channel span. The crossing will therefore minimize any impacts to wildlife by providing for both terrestrial and aquatic wildlife passage and maximize connectivity within the stream corridor.

The proposed access and associated impacts are essential to the use of the land beyond the District and have been located and designed to minimize direct impact and other potential detrimental impacts within the District. The Amended Project therefore meets the specific conditional use permit criteria of Section 334-36(C)(2) of the Zoning Ordinance applying to the Access Impacts.

5.2 Section 334-36(C)(4)—Lot Development Impacts

Section 334-36(C)(4) of the Wetland Ordinance permits lot development impacts as conditional uses where the applicant can demonstrate that: a) the use will not significantly interfere with wetland functions and values, water quality, or wildlife habitat pursuant to the statement of purpose of the Zoning Ordinance, or, b) in the alternative, the use will impact wetlands functions and values; but, in the opinion of the Planning Board, such uses are not contrary to the public interest and will result in significant public benefit provided:

- Compensatory mitigation is provided such that those District functions and values to be impacted will be off set in whole, and
- The Applicant has demonstrated avoidance and minimization to the fullest extent practical

5.2.1 The proposed Lot Development Impacts will not significantly interfere with the wetland functions and values, water quality, or wildlife habitat of the wetlands involved

All proposed Lot Development Impacts for the Amended Project (Impact Areas 3, 4, & 5) consist of grading necessary to install 3 outfall pipes from stormwater treatments features. These impacts do not involve impervious surface and are temporary in nature except for approximately 200 square feet of rip rap that is required for stabilization of the discharge point at each location. Following construction, these areas will be seeded using appropriate native seed mix and be allowed to naturalize. Additionally, the proposed buffer associated with Impact Areas 4 and 5 is currently managed golf course turf. The buffer function in these areas will be enhanced by providing a naturally vegetated buffer where one currently does not exist. Considering the relatively small size of theses impact areas and the proposed restoration, the proposed Lot Development Impacts will not significantly interfere with the wetland functions and values of the wetlands involved.

The Lot Development Impacts will not interfere with water quality either. The proposed stormwater management system will capture and treat all runoff from the development and will be the primary protection against water quality degradation. The three Lot Development Impacts are all essentially temporary as they are associated with grading, involve no impervious surface, and will be naturally revegetated following construction. Approximately 39% of this impact will occur within Buffer areas that are currently maintained golf course turf. The post construction function of these Buffer areas will be enhanced by restoring them and allowing them to naturalize. Together with the restoration and naturalization of wetland Buffer outside of the proposed impact areas, water quality functions supported by the Buffer and wetlands will be greatly enhanced overall.

Finally, the Lot Development Impacts will not significantly interfere with wildlife, or wildlife habitat, primarily due to the existing condition of the buffer areas involved which are largely maintained golf course turf. The existing golf course does not support meaningful wildlife habitat and can only be improved by the naturalization of these areas following construction. A more detailed assessment of wildlife habitat in relation to the proposed project can be found in the Wildlife Report.

5.2.2 In the alternative, should the Conservation Commission or Planning Board determine that the Lot Development Impacts will significantly impact wetlands functions and values; but, in the opinion of the Planning Board, such uses are not contrary to the public interest and will result in significant public benefit provided: Compensatory mitigation is provided …and…The Applicant has fully demonstrated avoidance and minimization to the extent it is practical.

As described above, the proposed Lot Development Impacts will not have a significant impact on wetland functions and values and will likely enhance function in these areas. Alternatively, the impacts also meet the criteria Section 334-36(C)(4) of the Wetland Ordinance because they have been minimized to the maximum extent practicable and will result in public benefit in the form of significant compensatory mitigation.

Avoidance and minimization of impacts for Lot Development is evident when considering the scope of the overall development and the fact that 1) lot development constitute less than 5% of all proposed impacts, 2) no structures or impervious surfaces are proposed within the District, 3) the impacts are for grading and largely temporary in nature, and 4) the impacts are required to install stormwater management outfalls at specific elevations in the buffer and therefore cannot be avoided.

Mitigation consists of formal preservation, via conservation easement offered to the Town of Hudson, covering approximately 120 acres of land, nearly a third of the Property. Included in this area is the entire 250-foot Protected Shoreland along the Merrimack River as well as the majority of the land east of the development, including Limit Brook, its associated wetlands, and upland buffers. Extensive restoration of existing golf course in this conservation area will also be undertaken to restore wetland buffer and other sensitive ecological areas, many of which have been devoid of a natural buffer for upwards of 90 years. This will not only serve to advance inherent wetland function such as water quality and wildlife habitat but will also advance public benefits derived from a given wetland or ecosystem such as open space, aesthetics, and recreation. This will be particularly meaningful along the lower Merrimack River which has limited intact riparian area.

Additionally, the Amended Project will incorporate approximately 50 acres of additional natural buffer area between the proposed primary warehouse building and the southern property line.

The proposed preservation area alone is more than 500 times the proposed Lot Development Impacts and 30 times the preservation that would be required under the US Army Corps of Engineers Compensatory Mitigation Guidance at the relevant 20:1

The project therefore meets the specific conditional use permit criteria of Section 334-36(C)(4) of the Zoning Ordinance applying to the Lot Development Impacts.

5.3 Section 334-37(A)—General Conditional Use Permit Criteria

Section 334-37(A) of the Ordinance specifies the general criteria for conditional use permits applying to all impacts within the District. The relevant criteria are summarized below within the context of the proposed work.

5.3.1 §334-37(A)(1): The proposed activity minimizes degradation of land situated within the District and offsets potential adverse impacts to functions and values of wetlands, surface waters, and vernal pools.

The Amended Project has been carefully designed to limit the extent of wetland impacts and the effect the proposed impacts have on wetland functions and values. Through close coordination with the Conservation Commission during review of the Approved Project, impacts were reduced by over 20%. The Amended Project reduces impacts within the District by an additional 30,808 square feet or by an additional 13%.

The Amended Project completely avoids impacts to the most valuable wetlands with the greatest function and value and minimizes the footprint and potential adverse effects of the unavoidable impacts. As discussed above, the Access Roadways have been located to utilize uplands where possible and cross wetland areas at the narrowest points or at their edges to minimize impacts. The access roadways also incorporate structural measures such as retaining walls, steep grading, large open bottom crossing structures, and sloped curbing, to further reduce impacts and potential adverse effects on wildlife.

The vernal pool located in the forested wetland just east of the golf course will not be impacted. All project related disturbance in proximity to the vernal pool is located outside the District within the adjacent golf course which does not support habitat for vernal pool species. The manmade pond and surrounding maintained area immediately north of the pool will be returned to a natural condition through restoration landscaping which will improve habitat surrounding the pool.

Similar restoration of buffer areas currently consisting of golf course turf along Limit Brook, other wetlands in the eastern part of the site, and along the Merrimack River will serve to enhance wetland functions such as Wildlife Habitat, Water Quality Renovation, Flood Attenuation, and Aesthetics. The project also avoids any impact to the four manmade ponds on the golf course. Although these four ponds are not part of the

District, avoiding impacts to these areas will allow them to naturalize, further offsetting potential adverse effects on wetland function and values

The Amended Project minimizes degradation of land within the District and preserved wetland function to the greatest extent possible and therefore satisfies Section 334-37(A)(l) of the Zoning Ordinance.

5.3.2 §334-37(A)(2): The proposed activity will have no significant negative environmental impact to abutting or downstream properties and/or hydrologically connected water and/or wetland resources.

The Amended Project avoids potential downstream impacts first by avoiding impacts to areas with the most potential for offsite effects. There are no impacts to Limit Brook, its associated wetland, or its 100-year Floodplain. The same is true of the Merrimack River, its associated floodplain, and its entire 250-foot protected shoreland. The functions and values most relevant to off-site effects that are supported in these areas, such as Flood Attenuation, Water Quality, and Aesthetics, will be preserved and advanced by the Amended Project through preservation and naturalization of these areas as described in previous sections.

The unavoidable impacts caused by Green Meadow Drive and the Northern Access Road that are necessary for access have been minimized to the greatest extent possible and designed to maintain and facilitate wildlife and hydrological connectivity. These improvements will have no potential for downstream impacts or effect on hydrological connectivity.

The modest remaining impacts for Lot Development (9,099 SF) are incurred by grading activity where no impervious surface is proposed. These impacts will also be restored following construction. The buffer impacts at Impact Areas 4 and 5, which constitute nearly 40% of these impacts (3,602 SF) occur within wetland buffer that is currently maintained golf course turf. Buffer function in these areas will be enhanced following restoration and naturalization of these areas. Considering the proposed extensive restoration of wetland buffer within the easement areas and elsewhere along the eastern side of the development, the project will result in a net improvement in buffer functions that serve to protect downstream water quality and off-site screening.

The Amended Project will also comply with the Town's recently revised Stormwater Management Regulations, and State of New Hampshire Alteration of Terrain Regulations. These two sets of regulations will ensure that the stormwater management system provides fully modern protections for water quality, rate of runoff, and infiltration. Stormwater management has also been designed to maintain the existing drainage patterns on the site to the maximum extent possible.

Considering the avoidance and minimization of impacts, the proposed restoration and preservation of wetlands and riparian buffer, and the comprehensive stormwater management, the Project has been designed to have no negative environmental impact to abutting or downstream properties and/or hydrologically connected and/or wetland resources. The project therefore satisfies Section 334-37(A)(2) of the Zoning Ordinance.

5.3.3 §334-37(A)(3): The proposed activity or use cannot practicably be located otherwise on the site to eliminate or reduce impact to the Wetland Conservation Overlay District.

As described in detail within Section 5.1, there are no viable alternatives to the access roadways which have been designed to avoid and minimize impacts within the District to the maximum extent practicable. The remaining impacts within the District are associated with three areas of grading necessary to install outfalls for stormwater detention and treatment features (Impact Areas 3, 4, & 5). With the exception of a roughly 200 SF rip-rap splash pad located at the end of each pipe, these impacts are temporary and will be revegetated following construction. No impervious surface is proposed at these three impact areas.

These impacts are necessary because the three outfall pipes must be installed at specific elevations to function properly, specifically the lower elevations that lie in close proximity to the wetlands. The location and scope of these three impact areas is therefore dictated by existing grades and cannot be moved out of the District.

For these reasons there is no practicable alternative location for these impacts involving less impact within the District and the project therefore satisfies Section 334-37(A)(3) of the Zoning Ordinance.

5.3.4 §334-37(A)(4): The proposed activity incorporates the use of those Best Management Practices recommended by the New Hampshire Department of Environmental Services and/or other State agencies having jurisdiction.

The Amended Project was designed with the adjacent resources in mind with guidance from the Best Management Practice Techniques for Avoidance and Minimization manual prepared by USEPA, and NHDES. The project also includes comprehensive stormwater management for treatment and attenuation of runoff that has been designed in accordance with NH Alteration of Terrain program. A comprehensive construction phasing, erosion, and sedimentation control plan has been developed for the construction phase of the project to ensure maximum protection of the adjacent resource areas during construction. BMP's employed meet or exceed those specified in New Hampshire Stormwater Manual Volume 3: Erosion and Sediment Controls during Construction.

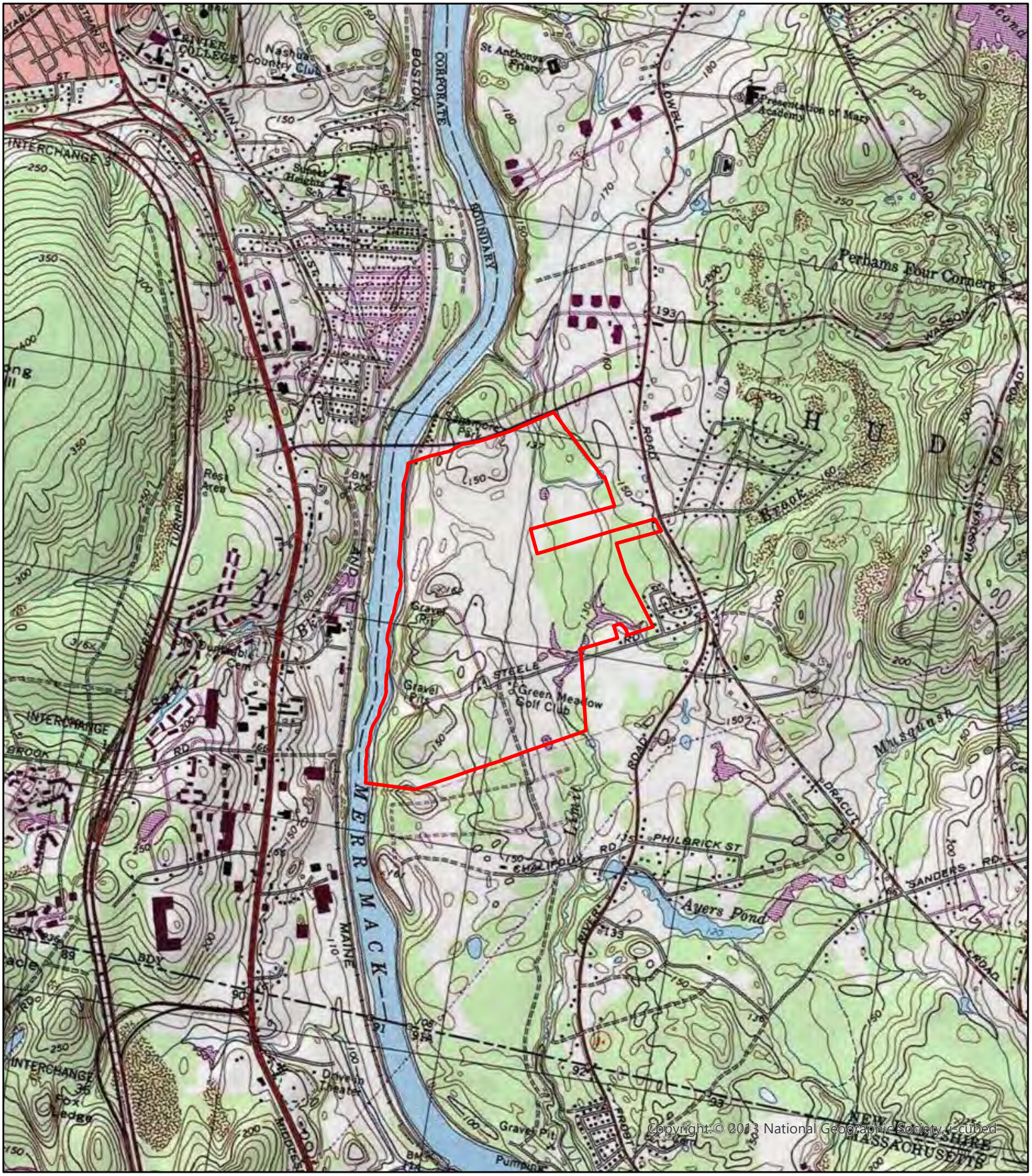
As the proposed project incorporates the use of those BMPs recommended by the State, as referenced above, a reasonable conclusion is that Hillwood's proposal satisfies §334-37(A)(4) of the Zoning Ordinance.

6.0 Conclusion

The extensive resource areas associated with the property were identified, characterized, and assessed prior to advancing the design of the Amended Hudson Logistic Center Project. The Merrimack River occupies the entire western edge of the property and represents the predominant resource area associated with the site. Vegetated wetland is otherwise concentrated east of the developed golf courses and along Limit Brook. The remainder of property is largely free of wetland except for 4 manmade ponds.

The relative sensitivity and function of these resources was used to inform the design of the project which avoids impacts to the most valuable resources on the property and minimizes the extent and effect of unavoidable impacts. As detailed in section 5.0, this has been accomplished through general project layout and the inclusion of both structural measures and a mitigation proposal involving extensive restoration and preservation of degraded wetland buffer and riparian area. The project therefore limits degradation to the Hudson Wetlands Conservation Overlay District to the maximum extent practicable and includes measures which specifically address the criteria for a Conditional Use Permit under Condition Use Criteria and specifically complies with the criteria for Conditional Uses related to Access and Other Uses under Article IX of the Town of Hudson's Zoning Ordinance.

Figures



0 0.25 0.5 1 Miles

Scale: 1:24,000

USGS Locus Map

Hudson Logistics Center
Steel Road
Hudson, NH

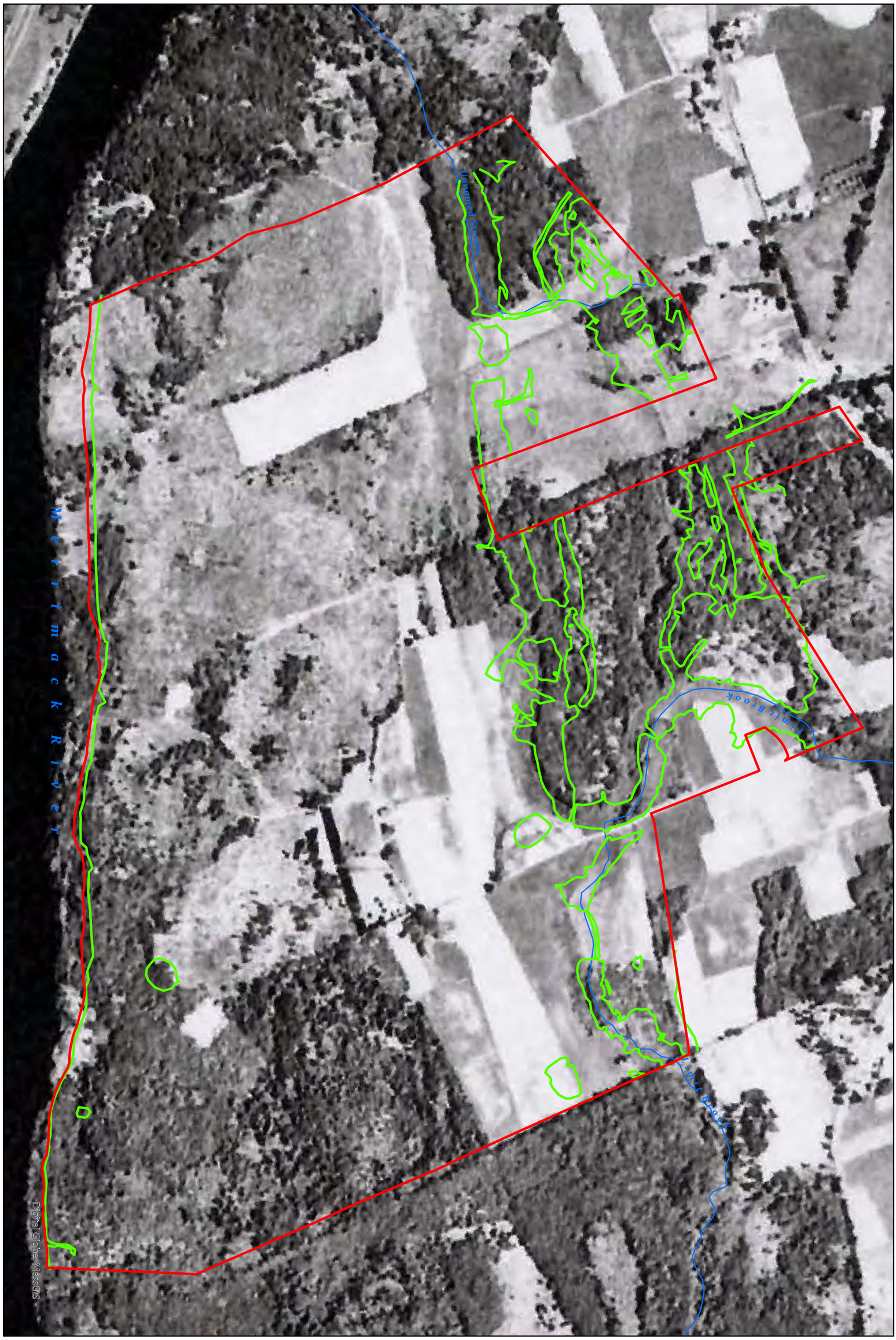
Gove Environmental Services, Inc.
8 Continental Drive, Bldg 2 Unit H, Exeter NH 03833 603.778.0644

Gove Environmental Services, Inc.
8 Commercial Drive Bldg 2 North Hampton NH 03833 603-778-0644

Date: 8/3/22

Hudson Logistics Center
Steele Road
Hudson NH

Wetland Overview



1952 Aerial Photo/wetlands Overlay	Hudson Logistics Center Steele Road Hudson NH	N	Gove Environmental Services, Inc. 8 Continental Drive, Bldg 2 Unit H, Exeter NH 03833 603.778.0644 Date: 8/3/22

Evaluation Area
- EA 1
- EA 2
- EA 3
- EA 3.1
- EA 4
- EA 5
- EA 6
- EA 7
- EA 8

No Name
Lowell Rd
Rena Ave
Linda St
Bruce St
Friel Golf Rd
No Name
Wal Mart Blvd
Circumferential to 3A
Circumferential Highway
Steele Rd
Birdie Ln
Eagle Dr
Muldoon Dr
Fairway Dr
Driveway A956
No Name
Sagamore Park Rd
Circumferential Highway
Ramp Daniel Webster Hwy To Circumferential
Elgin St
Peach Dr
Unnamed Stream
Vernal Pool
Merrimack River
EA2
EA3
EA4
EA5
EA6
EA7
EA3.1
EA8
Digital Globe, MassGIS

Gove Environmental Services, Inc.
8 Commercial Drive Bldg 2 North Hampton NH 03833 603.778.0644

Date: 8/3/22

Hudson Logistics Center
Steele Road
Hudson NH

Wetland Evaluation Areas

Appendix A

Wetland Photos

Impact Area 1

Impact Area 2

Impact Area 3

Impact Area 4 (buffer portion)

Impact Area 4 (wetland portion)

Impact Area 5

Impact Area A

Impact Area B

Impact Area C

Impact Area D

Impact Area E

Impact Area F

Impact Area F

Impact Area G

Impact Area H

Appendix B

Functional Assessment Worksheets

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 50	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA1	LOCATION: (LAT/ LONG) 42.716057/71.437079
WETLAND AREA: 5,000 +/- LF Bank	DOMINANT WETLAND SYSTEMS PRESENT: Riverine
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? numerous, Merrimck River	COWARDIN CLASS: R2UHB1
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☐ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☒ Yes ☐ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☒ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☒ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: NO IMPACT	PROPOSED WETLAND IMPACT AREA:

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☒ Yes ☐ No		☒ Yes ☐ No	Major River
2	☒ Yes ☐ No	1,3,5,11	☐ Yes ☒ No	
3	☒ Yes ☐ No	3,4,5	☒ Yes ☐ No	
4	☒ Yes ☐ No	8	☐ Yes ☒ No	This function is supported by wetlands associated with waterways, not necessarily the major river itself but storage is present due to high banks
5	☒ Yes ☐ No	4,7,17	☒ Yes ☐ No	Major River
6	☒ Yes ☐ No	1	☐ Yes ☒ No	known ES associations, Nashua Prime Wetland
7	☒ Yes ☐ No	8,9	☐ Yes ☒ No	applies to forested bank of river
8	☒ Yes ☐ No	1,2,3,4,5,6,10,11	☒ Yes ☐ No	major river, production and export is high
9	☒ Yes ☐ No	2,8,12	☒ Yes ☐ No	major river with many accessable viewing locations, important part of the landscape
10	☒ Yes ☐ No	1,2,10,16	☐ Yes ☒ No	applies to vegetated bank of river only
11	☒ Yes ☐ No	1,3,6,8,12,14	☒ Yes ☐ No	Forested bank of the river is extremely important in maintaining channel stability
12	☒ Yes ☐ No	1,2,11,19,20,26,30	☒ Yes ☐ No	Major NH river with extensive historical, societal, and natural heritage associations
13	☒ Yes ☐ No	2,4,5,7,9,12	☒ Yes ☐ No	numerous boating, fishing, and viewing opportunities

14	☒ Yes ☐ No	6,7,8,21	☒ Yes ☐ No	habitat at this location is Riverine, river corridor provides connection to numerous other habitats

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: Merrimack River	STREAM TYPE (ROSGEN): F
HAVE FISHERIES BEEN DOCUMENTED? ☒ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☒ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE: see Functions and Values in section 4	

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course, comercial development	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 50	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA2	LOCATION: (LAT/ LONG) 42.724385/71.426943
WETLAND AREA: ~16 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 2	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☒ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☒ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Impact Area 1 Fill/Stream Crossing	PROPOSED WETLAND IMPACT AREA: 9,125 SF/249 LF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☐ No	extensive alteration, impacted by drainage, surounded by development
2	☐ Yes ☒ No		☐ Yes ☒ No	disturbed wetland, no access
3	☐ Yes ☒ No		☐ Yes ☐ No	perennial status of sytream is questionable
4	☒ Yes ☐ No	4,5,6,7,8,9,11,13,15,18	☒ Yes ☐ No	constricted outlet and basin topo provide storage
5	☐ Yes ☒ No		☐ Yes ☐ No	
6	☐ Yes ☒ No		☐ Yes ☐ No	no known ES, disturbed
7	☒ Yes ☐ No	3,4, 5, 6, 7, 8, 12,13	☒ Yes ☒ No	organic soils, retention, dense vegetation, comlpex flow path. -diminished by ditching and disturbance
8	☒ Yes ☐ No	1,2,8,12	☐ Yes ☒ No	forested wetland with mast prodiucing trees and berry prodicing shrubs
9	☐ Yes ☒ No		☐ Yes ☐ No	disturbed wetland with limited viewing oportunity
10	☒ Yes ☐ No	1,2,4,5,10,13,16	☒ Yes ☐ No	retention, dense vegetation, comlpex flow path. -diminished by ditching and disturbance
11	☒ Yes ☐ No	15	☐ Yes ☒ No	dense vegetation stabuilizes stream durring minor flooding
12	☐ Yes ☒ No		☐ Yes ☐ No	disturbed wetland, common, no known heritage
13	☐ Yes ☒ No		☐ Yes ☐ No	

14	☒ Yes ☐ No	10,11,19	☐ Yes ☒ No	some habitat provided by mix of canopy structire and food sources -limited by adjacnt development on all sids

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: Unnamed Perrennial	STREAM TYPE (ROSGEN): E
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☒ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☒ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE: stream asseed as part of the wetland system

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA3	LOCATION: (LAT/ LONG) 42.720666/71.428526
WETLAND AREA: ~7 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? none	COWARDIN CLASS: PFO1Eb/PEM2Fx/PSS1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☒ Yes ☐ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Impact Area F Fill	PROPOSED WETLAND IMPACT AREA: 6,850 SF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☐ No	extensive alteration, impacted by proximity of golf course
2	☐ Yes ☒ No		☐ Yes ☒ No	disturbed wetland
3	☐ Yes ☒ No		☐ Yes ☐ No	permanace of flooding in excavated section is questionble
4	☒ Yes ☐ No	4,5,6,7,8,9,11,13,15,18	☒ Yes ☐ No	constricted outlet and basin topo provide storage
5	☒ Yes ☐ No	10,13	☐ Yes ☒ No	no apparent inlet, signs of discharge at north end
6	☐ Yes ☒ No		☐ Yes ☒ No	no known ES, disturbed
7	☒ Yes ☐ No	3,4, 5, 6, 7, 8, 12,13	☒ Yes ☐ No	heavy nurtrient input,organic soils, retention, dense vegetation, comlpex flow path.
8	☒ Yes ☐ No	1,2,8,12	☐ Yes ☒ No	forested/and shrub wetland with berry producing shrubs, emergent with wildfower species
9	☐ Yes ☒ No		☐ Yes ☐ No	disturbed wetland with limited viewing oportunity
10	☒ Yes ☐ No	1,2,4,5,10,13,16	☐ Yes ☒ No	retention, dense vegetation, comlpex flow path, limited sources of sediment.
11	☐ Yes ☒ No		☐ Yes ☐ No	not directly assocuted with flowing water
12	☐ Yes ☒ No		☐ Yes ☐ No	disturbed wetland, common, no known heritage
13	☐ Yes ☒ No		☐ Yes ☐ No	none
14	☒ Yes ☐ No	8,9,10,11,19,20	☒ Yes ☐ No	interconneted variety of wetland types including emergent, overland access to open water

				-diminished by proximety to golf course

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1	3/26/20 4/4/20	Wood Frog 14 egg masses		unknown, currently imopunded by beaver	wetland is floodded by beaver activity, areial photos from past years indicate this is not permanent, area at north end where egg masses were foiund is likely the the vernal pool heavy nutrient and algea
2					
3					
4					
5					
6					

7					
8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE:

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	

11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA3.1	LOCATION: (LAT/ LONG) 42.720666/71.428526
WETLAND AREA: ~2 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Maintained wet Lawn
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? none	COWARDIN CLASS: PEM2BF
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Impact Area 3 & G-J Fill	PROPOSED WETLAND IMPACT AREA: 28,310 SF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☐ No	maintateined golf course turf, graded and modifired soil profile, no real wetland function or value in current condition.
2	☐ Yes ☒ No		☐ Yes ☐ No	
3	☐ Yes ☒ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☒ Yes ☐ No	13	☒ Yes ☐ No	appears to be a groundwater seep area
6	☐ Yes ☒ No		☐ Yes ☐ No	
7	☐ Yes ☒ No		☐ Yes ☒ No	
8	☐ Yes ☒ No		☐ Yes ☐ No	
9	☐ Yes ☒ No		☐ Yes ☐ No	
10	☐ Yes ☒ No		☐ Yes ☐ No	
11	☐ Yes ☒ No		☐ Yes ☐ No	
12	☐ Yes ☒ No		☐ Yes ☐ No	
13	☐ Yes ☒ No		☐ Yes ☐ No	

14	☐ Yes ☒ No		☐ Yes ☐ No	

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE:	

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course, comercial development, residential	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA4	LOCATION: (LAT/ LONG) 42.719680/71.424429
WETLAND AREA: ~8 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☐ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☒ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Impact Areas B-E Fill	PROPOSED WETLAND IMPACT AREA: 23,325

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☒ Yes ☐ No		☐ Yes ☒ No	Intact forested wetkland but adjacvnt to development and golf course
2	☐ Yes ☒ No		☐ Yes ☒ No	common forested wetland area
3	☐ Yes ☒ No		☐ Yes ☐ No	no surface water
4	☒ Yes ☐ No	5,6,7,9,13,15	☒ Yes ☐ No	restricted outlet flat topo and slow flow to Limit Brook
5	☒ Yes ☐ No	13	☐ Yes ☒ No	signs of GW seep
6	☐ Yes ☒ No		☐ Yes ☐ No	no known ES
7	☒ Yes ☐ No	3,4, 5, 6, 7, 12,13	☒ Yes ☐ No	organic soils, slopw difuse flow, constricted outlet
8	☒ Yes ☐ No	1,2,8,12	☐ Yes ☒ No	forested wetland with mast prodiucing trees and berry producing shrubs
9	☐ Yes ☒ No		☐ Yes ☐ No	common forested wetland
10	☒ Yes ☐ No	1,2,3,4,5,9,10,13,14	☒ Yes ☐ No	organic soils, slopw difuse flow, constricted outlet
11	☐ Yes ☒ No		☐ Yes ☐ No	no surface directly associated surface water
12	☐ Yes ☒ No		☐ Yes ☐ No	common forested wetland no known heritage
13	☐ Yes ☒ No		☐ Yes ☐ No	
14	☒ Yes ☐ No	7,8,10	☐ Yes ☒ No	some habitat provided by forest but not wetland specific

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					
8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE:

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- ☒ Wildlife and vegetation diversity/abundance list.
- ☒ Photograph of wetland attached.
- ☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- ☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course, residential development	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA5	LOCATION: (LAT/ LONG) 42.724385/71.426943
WETLAND AREA: ~10 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Emergent/Scrub-Shrub/Pond
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PEM1E/PSS1E/PUBHxh
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☒ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: NO IMPACTS	PROPOSED WETLAND IMPACT AREA:

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☒ Yes ☐ No		☐ Yes ☒ No	extensive alteration, impacted by excavation, impondment and adj development
2	☐ Yes ☒ No		☐ Yes ☒ No	altered wetland
3	☒ Yes ☐ No	1,2,4,8,-11	☐ Yes ☒ No	supported in Impounded areas and possibly in Limit Brook diminished by barriers to connecticvity
4	☒ Yes ☐ No	4,5,6,7,8,9,11,13,15,16,17,18	☒ Yes ☐ No	desnse vegetated areas propvide some natiral floodplain, ponds sprovide storage, comstrited outlet
5	☐ Yes ☒ No		☐ Yes ☒ No	
6	☐ Yes ☒ No		☐ Yes ☐ No	no known ES, altered
7	☒ Yes ☐ No	2,4,5,6,8,11,13	☒ Yes ☐ No	deeper water areas, dense vegetation,, constricted outlet, high nutrient area
8	☒ Yes ☐ No	1,2,8,11,12	☐ Yes ☒ No	berry producing shrubs, detritis, transport by stream
9	☒ Yes ☐ No	1,2,4,9	☐ Yes ☒ No	multiple wetland types able to be viewed, emergent and meadow vegetation, diminished by golf course landscape
10	☒ Yes ☐ No	1,2,3,4,5,10,11,16	☒ Yes ☐ No	retention, deep water areas, dense vegetation
11	☒ Yes ☐ No	15	☐ Yes ☒ No	dense vegetation stabilizes stream durring minor flooding
12	☐ Yes ☒ No		☐ Yes ☐ No	altered wetland, no known heritage

13	☐ Yes ☒ No		☐ Yes ☐ No	none
14	☒ Yes ☐ No	6,7,8,11,12,19,21	☐ Yes ☒ No	diversity of wetland types including pond and emergent connected by stream

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					

7					
8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: Limit Brook	STREAM TYPE (ROSGEN): E
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☒ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☒ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE: stream asseed as part of the wetland system

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	

11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA6	LOCATION: (LAT/ LONG) 42.714301/71.425996
WETLAND AREA: ~4 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Emergent/Scrub-Shrub/Pond
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PEM1E/PSS1E/PABHxh
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island?
	IS THE WETLAND HUMAN-MADE? ☒ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☒ Yes ☐ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☒ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: NO IMPACTS	PROPOSED WETLAND IMPACT AREA:

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☒ Yes ☐ No		☐ Yes ☒ No	extensive alteration, impacted by excavation, impondment and adj development
2	☐ Yes ☒ No		☐ Yes ☒ No	altered wetland
3	☒ Yes ☐ No	1,2,4,8,-11	☐ Yes ☒ No	supported in Impounded areas and possibly in Limit Brook diminished by barriers to connecticvity
4	☒ Yes ☐ No	4,5,6,7,8,9,11,13,15,16,17,18	☒ Yes ☐ No	within 100 year floodplain
5	☐ Yes ☒ No		☐ Yes ☒ No	
6	☐ Yes ☒ No		☐ Yes ☐ No	no known ES, altered
7	☒ Yes ☐ No	2,4,5,6,8,11,13	☒ Yes ☐ No	deeper water areas, dense vegetation, constricted outlet, high nutrient area
8	☒ Yes ☐ No	1,2,8,11,12	☐ Yes ☒ No	berry prodicing shrubs, detritis, transoport by stream
9	☒ Yes ☐ No	1,2,4,9	☐ Yes ☒ No	mutple wetkand types able to be viewed, emergent and meadow vegetation, diminished by golf course landscape
10	☒ Yes ☐ No	1,2,3,4,5,10,11,16	☒ Yes ☐ No	retention, deep water areas, dense vegetation
11	☒ Yes ☐ No	15	☐ Yes ☒ No	dense vegetation stabuilizes stream durring minor flooding
12	☐ Yes ☒ No		☐ Yes ☐ No	altered wetland, no known heritage
13	☐ Yes ☒ No		☐ Yes ☐ No	none

14	☒ Yes ☐ No	6,7,8,11,12,19,21	☐ Yes ☒ No	diversity of wetland types including pond and emergent connected by stream

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: Limit Brook	STREAM TYPE (ROSGEN): E
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☒ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☒ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE: stream assessed as part of the wetland system

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA7	LOCATION: (LAT/ LONG) multiple , see plans/
WETLAND AREA: ~1.5 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Manmade Pond
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? none	COWARDIN CLASS: PUBHx
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☒ Yes ☐ No if not, where does the wetland lie in the drainage basin?	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☒ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☐ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Impact Areas 4-6 Fill	PROPOSED WETLAND IMPACT AREA: 44,730 SF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☐ No	Manmade ponds in a managed landscape of golf course
2	☐ Yes ☒ No		☐ Yes ☐ No	golf course water features
3	☒ Yes ☐ No		☐ Yes ☒ No	may support fish species but very low quality nutrinet rich, low Ox conditions
4	☐ Yes ☒ No		☐ Yes ☐ No	no inlet or outlet
5	☒ Yes ☐ No	4,15	☒ Yes ☐ No	fluctuating wtaer leval, no inlow or outflow
6	☐ Yes ☒ No		☐ Yes ☐ No	golf course water features
7	☐ Yes ☒ No		☐ Yes ☐ No	no inlet
8	☐ Yes ☒ No		☐ Yes ☐ No	very small, maintained edges
9	☐ Yes ☒ No		☐ Yes ☐ No	golf course water features
10	☐ Yes ☒ No		☐ Yes ☐ No	no inlet or outlet
11	☐ Yes ☒ No		☐ Yes ☐ No	no flow or wave action
12	☐ Yes ☒ No		☐ Yes ☐ No	golf course water features
13	☐ Yes ☒ No		☐ Yes ☐ No	golf course water features

14	☒ Yes ☐ No	17,19,21	☐ Yes ☒ No	amphibian specues typical of small ponds have been observed as hve waterfowl

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE:	

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: golf course	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249	
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☐ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: EA8	LOCATION: (LAT/ LONG) 42.71944/71435656
WETLAND AREA: ~250 SF	DOMINANT WETLAND SYSTEMS PRESENT: Manmade basin
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? none	COWARDIN CLASS: PEM2Jx
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☒ Yes ☐ No if not, where does the wetland lie in the drainage basin?	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☐ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: NO IMPACT	PROPOSED WETLAND IMPACT AREA:

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course
2	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course
3	☐ Yes ☒ No		☐ Yes ☐ No	no water
4	☐ Yes ☒ No		☐ Yes ☐ No	no outlet
5	☒ Yes ☐ No	3	☒ Yes ☐ No	no outlet, drainage dorected to this area infiltrates
6	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course
7	☐ Yes ☒ No		☐ Yes ☐ No	no outlet
8	☐ Yes ☒ No		☐ Yes ☐ No	very small, maintained edges
9	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course
10	☒ Yes ☐ No	1,2,17	☒ Yes ☐ No	drainage directed to this basin infittrates, no outlet, sediment is prevented from reaching river -very small, limited function
11	☐ Yes ☒ No		☐ Yes ☐ No	no flow or wave action
12	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course
13	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course

14	☐ Yes ☒ No		☐ Yes ☐ No	Manmade basin in a managed landscape of golf course

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE:	

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	

13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

☒ Wildlife and vegetation diversity/abundance list.

☒ Photograph of wetland attached.

☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-1 Evaluation Date: 12-5-2020 Evaluator: BSQ

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		(a.) Less than 1 % b. From 1-3 % c. More than 3 %	(10) 5 1
3. What percentage of the wetland has been altered by agricultural activities?		(a.) Less than 5 % b. From 5 to 25 % c. More than 25 %	(10) 5 1
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. (b.) Moderate: Some used trails, roads, litter c. High: Many trails, roads, and/or litter	10 (5) 1
6. What percentage of the wetland is occupied by invasive plant species?		a. None (b.) 1-5% of the wetland has invasive species c. > 5% of the wetland has invasive species	10 (5) 1
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland (c.) Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 (1)
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?	at this loc,	(a.) Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	(10) 5 1
10. Is there a human-made structure that regulates the flow of water through the wetland?	None assoc. with this location	(a.) No human made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	(10) 5 1

63

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 6.3

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-2 Evaluation Date: 12-5-20 Evaluator: BSQ

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % b. From 1-3 % (c.) More than 3 %	10 5 (1)
3. What percentage of the wetland has been altered by agricultural activities?	paddocks golf course	a. Less than 5 % (b.) From 5 to 25 % c. More than 25 %	10 (5) 1
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. (b.) Moderate: Some used trails, roads, litter c. High: Many trails, roads, and/or litter	10 (5) 1
6. What percentage of the wetland is occupied by invasive plant species?		a. None b. 1-5% of the wetland has invasive species (c.) > 5% of the wetland has invasive species	10 5 (1)
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland (c.) Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 (1)
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?		a. Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge (c.) Greater than 10% impervious area within 500 ft of the wetland edge	10 5 (1)
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight (c.) One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 5 (1)
			17

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 1.7

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-3 Evaluation Date: 12-5-20 Evaluator: BSQ

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % b. From 1-3 % (c.) More than 3 %	10 5 (1)
3. What percentage of the wetland has been altered by agricultural activities?	Pre dating golf course	a. Less than 5 % (b.) From 5 to 25 % c. More than 25 %	10 (5) 1
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. (b.) Moderate: Some used trails, roads, litter c. High: Many trails, roads, and/or litter	10 (5) 1
6. What percentage of the wetland is occupied by invasive plant species?		a. None (b.) 1-5% of the wetland has invasive species c. > 5% of the wetland has invasive species	10 (5) 1
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland (c.) Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 (1)
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?		a. Less than 3% impervious area within 500 ft of the wetland edge (b.) 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	10 (5) 1
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight (c.) One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 5 (1) 35

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 3.5

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-2.1 Evaluation Date: 12-5-20 Evaluator: BSQ

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	wetland is on maintained golf course turf	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % b. From 1-3 % (c.) More than 3 %	10 5 (1)
3. What percentage of the wetland has been altered by agricultural activities?	existing golf course considered for this	a. Less than 5 % b. From 5 to 25 % (c.) More than 25 %	10 5 (1)
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?	known considered logging for this	a. Less than 1% b. From 1 to 10 % (c.) More than 10 %	10 5 (1)
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter (c.) High: Many trails, roads, and/or litter	10 5 (1)
6. What percentage of the wetland is occupied by invasive plant species?	maintained turf	a. None b. 1-5% of the wetland has invasive species (c.) > 5% of the wetland has invasive species	10 5 (1)
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland (b.) Roads, driveways, railroads are within 500 ft of the wetland c. Roads, driveways, railroads cross, or are adjacent to, the wetland	10 (5) 1
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?		a. Less than 3% impervious area within 500 ft of the wetland edge (b.) 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	10 (5) 1
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or in** the wetland. (b.) One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 (5) 1

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 2.8

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-4 Evaluation Date: 12-5-20 Evaluator: BSC

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % (b.) From 1-3 % c. More than 3 %	10 (5) 1
3. What percentage of the wetland has been altered by agricultural activities?		(a.) Less than 5 % b. From 5 to 25 % c. More than 25 %	(10) 5 1
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. (b.) Moderate: Some used trails, roads, litter c. High: Many trails, roads, and/or litter	10 (5) 1
6. What percentage of the wetland is occupied by invasive plant species?		a. None (b.) 1-5% of the wetland has invasive species c. > 5% of the wetland has invasive species	10 (5) 1
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland (b.) Roads, driveways, railroads are within 500 ft of the wetland c. Roads, driveways, railroads cross, or are adjacent to, the wetland	10 (5) 1
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity (b.) Human activity evident in up to 25% of the 500 ft zone c. Human activity evident in more than 25% of the 500 ft zone	10 (5) 1
9. What is the percent of impervious surface within 500 feet of the wetland edge?		(a.) Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	(10) 5 1
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or** in the wetland. (b.) One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 (5) 1

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10)

5.1

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-5 Evaluation Date: 12-5-20 Evaluator: BSQ

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % (b.) From 1-3 % c. More than 3 %	10 (5) 1
3. What percentage of the wetland has been altered by agricultural activities?	Existing golf course constructed for this	a. Less than 5 % b. From 5 to 25 % (c.) More than 25 %	10 5 (1)
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter (c.) High: Many trails, roads, and/or litter	10 5 (1)
6. What percentage of the wetland is occupied by invasive plant species?		a. None b. 1-5% of the wetland has invasive species (c.) > 5% of the wetland has invasive species	10 5 (1)
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland (c.) Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 (1)
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?		(a.) Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	(10) 5 1
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight (c.) One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 5 (1)

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 3.2

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-6 Evaluation Date: 12-5-20 Evaluator: BSR

1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. (c.) > 10% of the watershed has land uses that could degrade water quality.	10 5 (1)
2. Is there evidence of fill in the wetland?		a. Less than 1 % (b.) From 1-3 % c. More than 3 %	10 (5) 1
3. What percentage of the wetland has been altered by agricultural activities?	Golf course considered for this	a. Less than 5 % b. From 5 to 25 % (c.) More than 25 %	10 5 (1)
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		(a.) Less than 1% b. From 1 to 10 % c. More than 10 %	(10) 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter (c.) High: Many trails, roads, and/or litter	10 5 (1)
6. What percentage of the wetland is occupied by invasive plant species?		a. None b. 1-5% of the wetland has invasive species (c.) > 5% of the wetland has invasive species	10 5 (1)
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland (c.) Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 (1)
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone (c.) Human activity evident in more than 25% of the 500 ft zone	10 5 (1)
9. What is the percent of impervious surface within 500 feet of the wetland edge?		(a.) Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	(10) 5 1
10. Is there a human-made structure that regulates the flow of water through the wetland?		a. No human made structures present **upstream of, or** in the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight (c.) One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 5 (1)

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 3.2 32

NH METHOD FOR THE EVALUATION OF FRESHWATER WETLANDS *(revised December, 2015)*

Wetland Name/Code: EA-7+8 (man made ponds) Evaluation Date: 12-5-20 Evaluator: BJQ

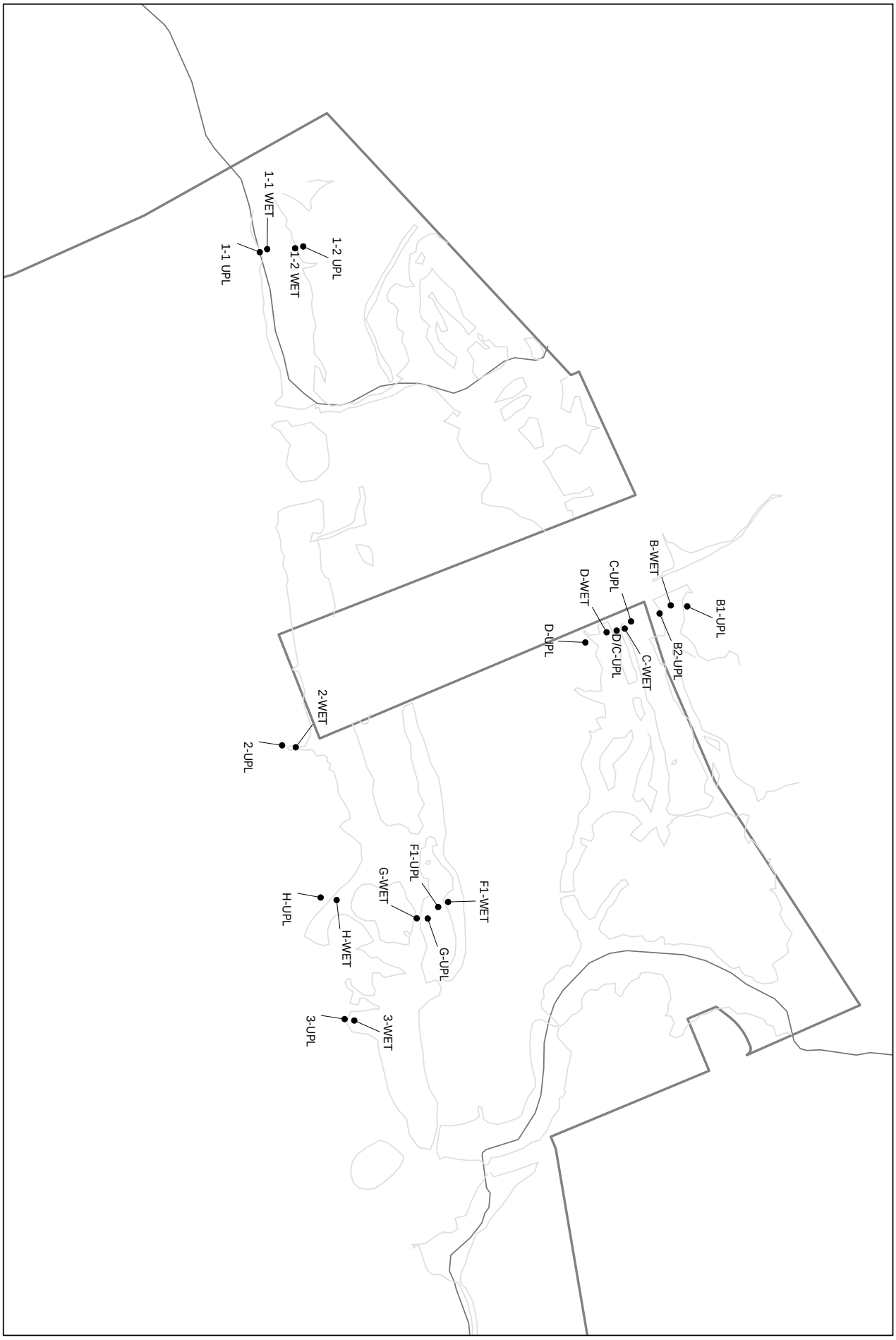
1 – ECOLOGICAL INTEGRITY

Evaluation Questions	Observations & Notes	Answers	Score
1. Are there land uses in the wetland's watershed that could degrade water quality in the wetland?		a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. > 10% of the watershed has land uses that could degrade water quality.	10 5 1
2. Is there evidence of fill in the wetland?	largely NA, some risk at creation	a. Less than 1 % b. From 1-3 % c. More than 3 %	10 5 1
3. What percentage of the wetland has been altered by agricultural activities?	Golf course	a. Less than 5 % b. From 5 to 25 % c. More than 25 %	10 5 1
4. What percentage of the wetland has been adversely impacted by logging activity within the last 10 years?		a. Less than 1% b. From 1 to 10 % c. More than 10 %	10 5 1
5. How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.)?		a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter c. High: Many trails, roads, and/or litter	10 5 1
6. What percentage of the wetland is occupied by invasive plant species?		a. None b. 1-5% of the wetland has invasive species c. > 5% of the wetland has invasive species	10 5 1
7. Are there roads, driveways and/or railroads crossing or adjacent to the wetland or come within 500 ft. of the wetland?		a. No roads, driveways or railroads. within 500 ft. of, or in the wetland b. Roads, driveways, railroads are within 500 ft of the wetland c. Roads, driveways, railroads cross, or are adjacent to, the wetland	10 5 1
8. How much human activity is taking place in the upland within 500 feet of the wetland edge?		a. Less than 5% or no activity b. Human activity evident in up to 25% of the 500 ft zone c. Human activity evident in more than 25% of the 500 ft zone	10 5 1
9. What is the percent of impervious surface within 500 feet of the wetland edge?		a. Less than 3% impervious area within 500 ft of the wetland edge b. 3-10% impervious area within 500 ft of the wetland edge c. Greater than 10% impervious area within 500 ft of the wetland edge	10 5 1
10. Is there a human-made structure that regulates the flow of water through the wetland?	isolated by design	a. No human made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification is slight c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface water hydrology	10 5 1
			31

AVERAGE SCORE FOR ECOLOGICAL INTEGRITY
(Add scores for each question and divide by 10) 3.1

Appendix C

Wetland Delineation Data Forms



Wetland Data Plot locations	**Hudson Logistics Center** **Steele Road** **Hudson NH**	N	Gove Environmental Services, Inc. **Date: 12/4/20**

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 1-1_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1-1_UPL

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	60	Yes	FACU
2. *Quercus rubra*	15	No	FACU
3. *Acer rubrum*	15	No	FAC
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. *Corylus cornuta*	10	Yes	FACU
2. *Prunus serotina*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5'r)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	115 (A)		435 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-1_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10yr 3/2	100					Sandy	
9-18	10yr 5/3	95	10yr 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 1-1_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Impact Area 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1-1_WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Rubus allegheniensis*	2	Yes	FACU
2. *Rubus idaeus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	7	=Total Cover	
Herb Stratum (Plot size:)			
1. *Solidago rugosa*	25	Yes	FAC
2. *Lythrum salicaria*	5	No	OBL
3. *Impatiens capensis*	20	Yes	FACW
4. *Toxicodendron radicans*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	20	x 2 =	40
FAC species	60	x 3 =	180
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	92 (A)		253 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-1_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	2.5y 2.5/1	98					Sandy	high organic matter
9-16	5y 5/2	98	10yr 4/6	2	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 1-2_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1-2_UPL

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	20	Yes	FAC
2. *Quercus rubra*	20	Yes	FACU
3. *Prunus serotina*	15	Yes	FACU
4. *Populus tremuloides*	15	Yes	FACU
5. *Acer rubrum*	10	No	FAC
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. *Elaeagnus umbellata*	10	Yes	UPL
2. *Prunus serotina*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5'r)			
1.	5	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Vitis labrusca*	5	Yes	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	70	x 4 =	280
UPL species	10	x 5 =	50
Column Totals:	110 (A)		420 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-2_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10yr 3/2	100					Sandy	
5-13	10yr 4/6	100					Sandy	
13-20	2.5y 5/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 1-2_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Impact Area 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 1-2_WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Betula populifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Frangula alnus*	30	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size:)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Vitis labrusca*	5	Yes	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	70	x 3 =	210
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	80 (A)		240 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-2_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5y 2.5/1	100					Sandy	high organic matter
8-15	5y 5/2	95	7.5yr 4/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 2_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area 2

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 2_UPL

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	15	Yes	FACU
2. *Quercus rubra*	25	Yes	FACU
3. *Acer rubrum*	20	Yes	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. *Frangula alnus*	10	Yes	FAC
2. *Prunus serotina*	5	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5'r)			
1. *Dryopteris intermedia*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	42	x 3 =	126
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	87 (A)		306 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 2_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 3/2	100					Sandy	
12-18	10yr 5/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 2_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): swale Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area 2

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 2_WET

Tree Stratum (Plot size: 10' x30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x15')			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 =Total Cover		
Herb Stratum (Plot size: 5'r)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Dryopteris intermedia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	15 (A)		40 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
narrow wetland area. Tree and shub plots adjusted to wid of wetkand (~10' wide)

SOIL

Sampling Point 2_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10yr 2/1	98	7.5yR 3/3	2	C	M	Sandy	ox rhizo
8-10	2.5y 4/1	98	7.5yr 3/3	2	C	M	Sandy	
10-15	2.5y 5/2	95	10yr 4/4	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** ____

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 3-UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID: Impact Area 3

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is not likley to support hydrophytic vegeation under normal circumstanses based on appaeance of cultivated lawn and lack of signs of hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 3-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summary of findings

SOIL

Sampling Point 3-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10yr 3/2	100					Sandy	
10-16	2.5y 5/3	95	10yr 5/6	5	C	M	Sandy	
16-20	2.5y 6/3	95	10yr 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: 3-WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area 3

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is very likley to support hydrophytic vegeation under normal circumstanses based on observatuion of sod stressed by peristent ponding and vegetation in adjacnt non-maintained areas

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 3-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summatry of findings

SOIL

Sampling Point 3-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 2/2	100					Sandy	oxidized rhizopspheres
3-13	2.5y 2.5/1	100					Sandy	high organic content
13-16	5y 5/1	90	2.5y 5/6	10	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: B_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area B

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: B_UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	25	Yes	FACU
2. *Quercus rubra*	25	Yes	FACU
3. *Betula lenta*	20	Yes	FACU
4. *Betula populifolia*	10	No	FAC
5. *Acer rubrum*	5	No	FAC
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Pinus strobus*	5	Yes	FACU
2. *Prunus serotina*	5	Yes	FACU
3. *Frangula alnus*	2	No	FAC
4.			
5.			
6.			
7.			
	12	=Total Cover	
Herb Stratum (Plot size:)			
1. *Osmundastrum cinnamomeum*	2	Yes	FACW
2. *Carex pensylvanica*	2	Yes	UPL
3. *Pinus strobus*	2	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	6	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	17	x 3 =	51
FACU species	82	x 4 =	328
UPL species	2	x 5 =	10
Column Totals:	103 (A)		393 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10yr 2/1						Sandy	
5-11	10yr 3/2						Sandy	
11-17	10yr 4/4						Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: B_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Impact Area B

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: B_WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Betula lenta*	5	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Frangula alnus*	5	Yes	FAC
2. *Ilex verticillata*	5	Yes	FACW
3. *Euonymus alatus*	2	No	UPL
4. *Pinus strobus*	2	No	FACU
5.			
6.			
7.			
	14	=Total Cover	
Herb Stratum (Plot size:)			
1. *Osmundastrum cinnamomeum*	2	No	FACW
2. *Carex pensylvanica*	2	No	UPL
3. *Mitchella repens*	2	No	FACU
4. *Toxicodendron radicans*	5	Yes	FAC
5. *Dryopteris intermedia*	5	Yes	FAC
6. *Brachyelytrum aristosum*	2	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	18	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	7	x 2 =	14
FAC species	60	x 3 =	180
FACU species	14	x 4 =	56
UPL species	6	x 5 =	30
Column Totals:	87 (A)		280 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10yr 2/1	98					Sandy	ox rhizo
9-12	10yr 4/1	98	7.5yr 3/3	2	C	M	Sandy	
12-18	2.5y 5/2	8	10yr 4/6	20	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: B2_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area B

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: B2_UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	65	Yes	FACU
2. *Betula lenta*	10	No	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Quercus rubra*	5	Yes	FACU
2. *Prunus serotina*	2	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	7	=Total Cover	
Herb Stratum (Plot size:)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Dryopteris intermedia*	2	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	7	x 3 =	21
FACU species	82	x 4 =	328
UPL species	0	x 5 =	0
Column Totals:	94 (A)		359 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B2_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10yr 2/1						Sandy	
5-9	10yr 3/2						Sandy	
9-17	10yr 4/4						Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: C_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area C

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: C_UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Quercus rubra*	10	No	FACU
3. *Betula lenta*	20	Yes	FACU
4. *Acer rubrum*	2	No	FAC
5.			
6.			
7.			
	72	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Crataegus crus-galli*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size:)			
1. *Osmundastrum cinnamomeum*	2	No	FACW
2. *Dennstaedtia punctilobula*	20	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	7	x 3 =	21
FACU species	70	x 4 =	280
UPL species	20	x 5 =	100
Column Totals:	99 (A)		405 (B)

Prevalence Index = B/A = 4.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point C_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10yr 2/1						Sandy	
2-6	10yr 4/4						Sandy	
6-13	10yr 5/4						Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: C_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area C

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: C_WET

Tree Stratum (Plot size: width of wet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: width of wet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5'r)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Gaultheria procumbens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	30 (A)		90 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
narrow wetland area. Tree and shub plots adjusted to wid of wetkand (~15' wide)

SOIL

Sampling Point C_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10yr 2/1	100					Sandy	ox rhizo
8-10	10yr 4/1	98	7.5yr 3/3	2	C	M	Sandy	
10-15	2.5y 5/2	95	10yr 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: D-C_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area C & D

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: D-C_UPL

Tree Stratum (Plot size: 15'x30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	20	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Betula lenta*	10	Yes	FACU
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'x15')			
1. *Betula lenta*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Pinus strobus*	2	No	FACU
4.			
5.			
6.			
7.			
	17	=Total Cover	
Herb Stratum (Plot size: 5'r)			
1. *Osmundastrum cinnamomeum*	2	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	5	x 3 =	15
FACU species	62	x 4 =	248
UPL species	0	x 5 =	0
Column Totals:	69 (A)		267 (B)

Prevalence Index = B/A = 3.87

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
tree and shrub lots adjusyted to the width of narrow upland area ~15'

SOIL

Sampling Point D-C_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10yr 2/1	100					Sandy	
4-14	7.5yr 2.5/2	100					Sandy	
14-230	10yr 4/3	90	10yr 3/6	10			Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: D_WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area D

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: D_WET

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. *Vaccinium corymbosum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5'r)			
1. *Impatiens capensis*	15	Yes	FACW
2. *Symplocarpus foetidus*	5	Yes	OBL
3. *UKN carex*	2	No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	45 (A)		105 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point D_WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5y 2.5/1	100					Muck	ox rhizo

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 12/2/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: D_UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PFO1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: Impact Area D

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: D_UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2.			
3. *Betula lenta*	20	Yes	FACU
4. *Betula populifolia*	10	No	FAC
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Euonymus alatus*	5	Yes	UPL
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size:)			
1. *Dennstaedtia punctilobula*	20	Yes	UPL
2. *Osmundastrum cinnamomeum*	5	No	FACW
3. *Pinus strobus*	2	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	27	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point D_UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 2/1						Sandy	
3-4	10yr 3/3						Sandy	
4-12	10yr 4/6						Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: F1-UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area F

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is not likley to support hydrophytic vegeation under normal circumstanses based on appaeance of cultivated lawn and lack of signs of hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: F1-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summary of findings

SOIL

Sampling Point F1-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10yr 2/2	100					Sandy	oxidized rhizoshperes
4-5	2.5y 5/2	95	2.5y 5/6	5	C	M	Sandy	
5-13	2.5y 6/3	95	2.5y 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: F1-WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No** X
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area F

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located at the edge of the maintained golf course. Gtroundcover cosists of turf but tyrees and sshuibs ayt the edge of the plot represent normal circumstanses

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: F1-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Frangula alnus*	20	Yes	FAC
3. *Cornus amomum*	5	No	FACW
4. *Lyonia ligustrina*	5	No	FACW
5. *Spiraea latifolia*	2	No	FACW
6.			
7.			
	47	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	47 (A)		129 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
plot is located at the edge of the maintained golf course. Shrub and tree layers represent normal circumstances while herbacouse layer is maintained lawn

SOIL

Sampling Point F1-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 2/1	100					Sandy	oxidized rhizoshperes
3-13	5y 6/2	95	2.5y 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** X

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: G-UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area G

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is not likley to support hydrophytic vegeation under normal circumstanses based on appaeance of cultivated lawn and lack of signs of hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: G-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summary of findings

SOIL

Sampling Point G-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10yr 2/2	100					Sandy	oxidized rhizoshperes
5-13	2.5y 5/3	95	10yr 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: G-WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): shallow swale Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area G

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is very likley to support hydrophytic vegeation under normal circumstanses based on observatuion of sod stressed by peristent ponding and vegetation in adjacnt non-maintained areas

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: G-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summatry of findings

SOIL

Sampling Point G-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10yr 2/2	95	7.5yr 3/4	5	C	M	Sandy	oxidized rhizopspheres
5-12	2.5y 5/2	60	2.5y 5/6	10	C	M	Sandy	includes arrea of mixed 2.5y4/2
12-18	10yr 2/1	100					Muck	buried organic

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: H-UPL

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID: Impact Area H

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is not likley to support hydrophytic vegeation under normal circumstanses based on appaeance of cultivated lawn and lack of signs of hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: H-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summary of findings

SOIL

Sampling Point H-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 3/3						Sandy	
3-13	2.5y 5/3	95	10yr 5/6	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil has been disturbed by regrading for construction of the golf course

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center City/County: Hudson Sampling Date: 11/25/20

Applicant/Owner: Hillwood Development State: NH Sampling Point: H-WET

Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:

Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local relief (concave, convex, none): near flat Slope %:

Subregion (LRR or MLRA): LRR R Lat: see map Long: Datum:

Soil Map Unit Name: NWI classification: PEM2Bf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Impact Area H

Remarks: (Explain alternative procedures here or in a separate report.)
Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is very likley to support hydrophytic vegeation under normal circumstanses based on observatuion of sod stressed by peristent ponding and vegetation in adjacnt non-maintained areas

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: H-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Maintained lawn (kentucky bluegrass)*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
see remarks in summatry of findings

SOIL

Sampling Point H-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 3/2						Sandy	oxidized rhizopspheres
3-5	2.5y 5/2	90	2.5y 5/6	10	C	M	Sandy	
5-12	2.5y 4/2	95	10yr 4/6	5	C	M	Sandy	
12-16	2.5y 6/2	90	2.5y 5/6	10	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil has been disturbed by regrading for construction of the golf course

Appendix D

NHB Data Check Report

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Luke Hurley, Gove Environmental Services, Inc.
8 Continental Drive
Exeter, NH 03833

From: NHB Review, NH Natural Heritage Bureau
Date: 7/19/2022 (valid until 07/19/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - hudson, NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-2375** Town: Hudson Location: 43 Steele Road
Description: This review request is being submitted for a re-design of the previously approved Hudson Logistics Center project (see NHB20-0672) involving the redevelopment of the Green Meadow Golf Club into a warehouse and distribution facility. The revised project will involve construction of a single building rather than three and will involve less wetland impact than the original project. The revised project will utilize the same access locations and same general area, located entirely within the footprint of the existing golf courses. All environmental commitments of the original approved project are anticipated to remain unchanged.

cc: NHFG Review

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: NHB is providing this for informational purposes. Based on email communication with Amy Lamb dated July 15th- July 30th, 2020, surveys were performed for Arrowhead rattlebox and the species was not found on site. Based on the email communication with Amy Lamb dated October 29th 2020, the River birch record along the Merrimack river adjacent to the golf course will not be impacted by the project. If plans change in the future please coordinate with NHB.**
F&G: Please refer to NHFG consultation requirements below.

Invertebrate Species	**State[1]**	**Federal**	**Notes**
Persius Dusky Wing (*Erynnis persius persius*)*	E	--	Contact the NH Fish & Game Dept (see below).

Plant species	**State[1]**	**Federal**	**Notes**

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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arrow-head rattlebox (*Crotalaria sagittalis*)*	E	--	
river birch (*Betula nigra*)	T	--	The population could be deleteriously affected by any project activities that alter the hydrology of its habitat, by increased sedimentation, and by increased nutrients/pollutants in stormwater runoff.

Vertebrate species	**State[1]**	**Federal**	**Notes**
Eastern Box Turtle (*Terrapene carolina*)	E	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section below.

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

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Contact NH Fish & Game at (603) 271-0467 with questions.

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