

Appendix I. Waterbody Inventory and Wetland Delineation Report

**WETLAND AND STREAM DELINEATION REPORT
STONY POINT HORIZONTAL DIRECTIONAL DRILL**

**STONY POINT
ROCKLAND COUNTY
NEW YORK**



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1.0 INTRODUCTION

1.1 Project Description and Purpose

Champlain Hudson Power Express, Inc. (CHPE) and CHPE Properties, Inc. (the Client) is proposing the construction of ± 339 miles of high voltage direct current underground and underwater transmission line from Montreal, Quebec, to Queens, New York. It will bring 1,250 megawatts of renewable energy into New York by the end of year 2025, the anticipated Project Commercial Operation Date construction, to reduce the dependency on fossil fuels and carbon emissions. The proposed Project will provide enough power for more than 1 million homes, along with numerous environmental and economic benefits to millions of residents in New York State communities.

This portion of the project applies to the Stony Point Horizontal Directional Drill (HDD) Project (Project), a transitional segment located in Stony Point, Rockland County, New York. This HDD operation will install conduits that will be used for the future installation of the submarine cable transition from the Hudson River to land cable for the overland route. The Stony Point HDD Segment is the first of four for transitional HDD's. CHPE contracted with TRC to delineate the boundaries of wetlands and aquatic features within the 27.5-acre Project Area (**Figure 1, Appendix A**).

1.2 Report Purpose

TRC conducted a wetland and stream delineation of the Project Area on behalf of the Client on May 27, 2022. This report details the wetlands and surface water features identified within the Project Area (including rivers, streams, ponds, and lakes), regardless of jurisdictional status. However, this report's description of potential jurisdictional areas to regulatory agencies lends itself toward assessing jurisdiction and avoiding wetlands and surface waters by implementing setbacks during Project planning.

Delineation efforts included the following tasks:

1. A desktop review of existing, publicly available federal and state agency resources;
2. A field delineation of all aquatic features within the Project Area using a handheld Global Positioning System (GPS) with reported sub-meter accuracy; and,
3. Documentation of the delineated aquatic features including the assumed agency jurisdiction for each resource based on hydrology, vegetation, and hydric soils data collected in the field.

Conclusions proposed herein provide information necessary to support a permit application to the United States Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC)¹.

2.0 REGULATORY AUTHORITY

2.1 United States Army Corps of Engineers

In accordance with Section 404 of the Clean Water Act (CWA), the USACE asserts jurisdiction over Waters of the United States (WOTUS). WOTUS are defined as wetlands, streams, and other aquatic resources under the regulatory authority of Title 33 Code of Federal Regulations (CFR) Part 328 and the United States Environmental Protection Agency (EPA) per Title 40 CFR Part 230.3(s). Wetlands are defined as *“those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”* (EPA, 2001).

On June 22, 2020, the Navigable Waters Protection Rule took effect, replacing the prior Clean Water Rule established in 2015. The Navigable Waters Protection Rule (NWPR) outlined categories of waters considered jurisdictional, as well as those considered non-jurisdictional. However, On August 30, 2021, the U.S. District Court for the District of Arizona issued an order vacating and remanding the NWPR, nationwide.

In accordance with a September 2, 2021 directive from the Acting Assistant Secretary of the Army for Civil Works, the USACE has resumed conducting approved jurisdictional determinations (AJDs) nationwide, consistent with the pre-2015 WOTUS regulatory regime. The pre-2015 regulatory regime is the 1986 WOTUS regulation, as informed by previously issued 2003 SWANCC and 2008 Rapanos guidance documents resulting from US Supreme Court decisions.

Summary of Key Points:

The USACE (and Environmental Protection Agency [EPA]) will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and,
- Wetlands that directly abut such tributaries.

¹ Because the Project is being reviewed pursuant to Article VII of New York Public Service Law, the NYSPSC is responsible for determining if the Project complies with all applicable state laws.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and,
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and,
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and,
- Significant nexus includes consideration of hydrologic and ecologic factors.

2.2 New York State Department of Environmental Conservation

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law [ECL]) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas, typically extending 100 feet from the wetland perimeter. To implement this Act, regulations were promulgated by the State under 6NYCRR Parts 663 and 664. Part 664 designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest. Wetlands regulated by the State are those 12.4 acres (5 hectares) in size or larger, as well as those smaller than 12.4 acres, deemed to be of “unusual local importance.” The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands. This allows landowners and other interested parties a means of determining where state jurisdictional wetlands exist, although the maps are legally only approximations—thus the need for on-site delineations. Under Part 663, approval under an Article 24 permit is required from the NYSDEC prior to most disturbances to a state-protected wetland or its protected adjacent area, including the removal of vegetation.

Article 15 of the ECL (Protection of Waters), and its implementing regulations under 6 NYCRR Part 608, provides the NYSDEC with regulatory jurisdiction over activities disturbing the bed or banks of protected streams, including small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected stream. This law and regulation also provide NYSDEC jurisdiction over navigable waters of the State, including contiguous marshes, estuaries, tidal marshes and wetlands that are inundated at mean high water level or tide. A protected stream

is defined in the ECL as any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, C(T), or C(TS) (6 NYCRR Part 701). State water quality classifications of unprotected watercourses include Class C and Class D streams. The classifications are defined below.

- A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing.
- The best usages of Class B waters are primary and secondary contact recreation and fishing.
- The best usage of Class C waters is fishing. Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning.
- Waters with a classification of D are generally suitable for fishing and non-contact recreation.

It should be noted, per 6 NYCRR Chapter X, Subchapter B, “*All streams or other bodies of water which are not shown on the reference maps herein shall be assigned to Class D, as set forth in Part 701, supra, except that any continuous flowing natural stream which is not shown on the reference maps shall have the same classification and assigned standards as the waters to which it is directly tributary.*”

As previously indicated in Footnote #1, the NYSPSC is responsible for determining if the Project complies with all applicable state laws, including those listed above.

3.0 PROJECT AREA CHARACTERISTICS

3.1 Resources

The following publicly available resources were used in the investigation, delineation, and report preparation:

- United States Geological Survey (USGS) Haverstraw, New York 7.5-minute quadrangle;
- United States Department of Agriculture (USDA) Ecoregion Maps;
- NYSDEC Ecozone Mapping;
- USGS National Hydrography Dataset;
- USGS Hydrologic Unit Maps;

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- NYSDEC Environmental Resource Mapper (ERM);
- NYSDEC Freshwater Wetlands Mapping;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey; and
- Recent aerial orthoimagery.

3.2 Vegetation and Ecological Communities

The Project Area resides in the Laurentian Mixed Forest and Eastern Broadleaf Forest Provinces and the St. Lawrence Valley, Hudson Valley, and Lower New England Section ecoregions of the United States as defined by the USDA Forest Service (Bailey et al., 1995). Ecoregions are ecosystems of regional extent. The USDA identifies ecoregions by ecosystem characteristics into the following classifications:

- Domains: the largest ecosystem, which are groups of related climates and are differentiated based on precipitation and temperature.
- Divisions: represent the climates within domains and are differentiated based on precipitation levels and patterns, as well as temperature.
- Provinces: Subdivisions of divisions, which are differentiated based on vegetation or other natural land covers.
- Sections: Subdivisions of provinces based on terrain features; sections are the finest level of detail described for each subregion.
- Mountainous Areas: Mountainous regions that exhibit different ecological zones based on elevation.

Recent aerial orthoimagery of the Project Area and surrounding vicinity, obtained from Google Earth (V7.3.2.5776) (December 2020) indicates that the Project Area is predominantly covered by deciduous forests, open fields and quarry pits. The following ecological communities, as defined by *Ecological Communities of New York State* (Edinger et al., 2014), were identified on the Project Area at the time of the delineation:

- Shallow emergent marsh

- Pits, quarries
- Successional open field
- Successional northern hardwoods
- Unpaved road/path

3.3 Hydrology

3.3.1 Hydrologic Mapping

The USGS has divided the country into hydrological units and sub-units based primarily on drainage basins and watershed boundaries. The main hydrologic unit levels are regions, sub-regions, basins, sub-basins, watersheds, and sub-watersheds. The hydrologic units are nested within each other, from the largest geographic area (regions) to the smallest geographic area (sub-watersheds). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits based on the six levels of classification in the hydrologic unit system. In addition to the hydrologic unit codes, each hydrologic unit is assigned a name corresponding to the unit's principal hydrologic feature, or to a cultural or political feature within the unit.

The region hydrologic unit level contains either the drainage area of a major river or the combined drainage areas of a series of rivers. Regions receive a two-digit code. The sub-jacent hydrologic unit levels are designated by the addition of another two digits with each level. Each sub-region includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin or basins, or a group of streams forming a coastal drainage area.

The Project Area is located within the USGS defined Lower Hudson River (HUC8- 02030101) sub-basin, Hudson-Peekskill Hollow Creek (HUC10- 0203010101) watershed, and the Furnace Brook-Hudson River (HUC12- 020301010105) sub-watershed.

The Lower Hudson River sub-basin extends from the southern end of Manhattan to the junction in Cohoes, NY, where it meets the Mohawk River. The sub-basin drains an area of 479,464 acres (749 square miles). Elevation in the sub-basin ranges from -7 to 1,374 feet above mean sea level (AMSL), with the highest elevations being in the northern portion. Average annual precipitation ranges from 41 to 48 inches and average temperature ranges from 44 to 54 degrees Fahrenheit.

3.3.2 Hydrologic Character

The predominant surface waterbodies include a perennial tributary to the Hudson River located in the northwestern portion of the Project Area. Most aquatic features within the Project Area act

primarily as drainages to surface runoff and groundwater discharge. The wetland features onsite act primarily as groundwater recharge/discharge and flood flow alteration features.

The Project Area receives, on average, 50.98 inches of rainfall annually based on information for the Town of Suffern, New York, located 15 miles from Stony Point and 13 miles from Clarkstown (U.S. Climate Data, 2019). In addition to precipitation, on-site hydrology originates from surface runoff from the surrounding uplands and groundwater.

3.3.3 FEMA Flood Zone Mapping

FEMA maintains materials developed to support flood hazard mapping for the National Flood Insurance Program (NFIP). According to FIRM panel 36087C0101G, effective 3/3/2014, the southwestern portion of the Project Area is within a 100-year, floodplain flood zone AE, which is a high-risk floodplain. The remaining portion of the Project Area is area of minimal flood zone hazard, flood zone X (see **Figure 2, Appendix A**).

3.4 Federal and State Mapped Wetlands and Streams

The US Fish and Wildlife Service (USFWS) is the principal US federal agency tasked with providing information to the public on the status and trends of wetlands on a national scale. The USFWS National Wetland Inventory (NWI) is a publicly available resource that provides detailed information on the abundance, characteristics, and distribution of nationwide wetlands (where mapped). Unlike the NYSDEC wetland maps which denote state jurisdictional wetlands, NWI wetland maps do not denote federal jurisdiction with their mapped boundaries. NWI wetlands are used as a reference guide by TRC field biologists to conduct a more informed site survey in the demarcation or delineation of wetlands and streams, which could be subject to federal jurisdiction under the CWA within the target Project Area.

Review of the NWI mapping during the preliminary desktop analysis indicated one federally mapped feature within the Project Area (see **Figure 2, Appendix A**). NWI mapping data indicates that one palustrine emergent, persistent, seasonally flooded wetland (PEM1R) feature intersects the Project Area in the southwest. This feature comprises a total of 8.36 acres with approximately 0.06 acres within the Project Area. The field-delineated aquatic features within the Project Area are greater than those represented by the NWI mapping.

Review of the NYSDEC ERM indicated one NYSDEC freshwater wetland and its 100-foot adjacent area mapped within the Project Area, which are regulated under Article 24 of the ECL (see **Figure 2, Appendix A**). Table 1 provides a summary of the NYSDEC-regulated wetland mapped within the Project Area.

Table 1. NYSDEC-Mapped Freshwater Wetlands

NYSDEC Wetland ID	Wetland Class (I, II, III, or IV) ¹	Total Wetland Area (Acres)	Wetland Area within the Project Area (Acres)
HS-2	I	19.8	0.188
¹ The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest quality.			

Based on NYSDEC stream classification mapping, one mapped stream is within the Project Area. State-protected streams are protected per Article 15 of the ECL (see Section 2.2). Table 2 below provides a detailed summary of the NYSDEC-classified priority (protected and unprotected) streams within the Project Area.

Table 2. NYSDEC-Mapped Streams within the Project Area

NYSDEC Stream Name and Regulatory ID Number	NYS Major Drainage Basin	USGS Sub-basin HUC 8 and Name	NYSDEC Classification ¹ and Standard ²	Cumulative Linear Feet within the Project Area
864-546	Lower Hudson	2030101	SC / C / SC / C	317
¹ A classification of C indicates that the best use of the stream is fishing.				
² These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.				

3.5 Physiography and Soil Characteristics

3.5.1 Physiography and Topography

The Project Area is within the Hudson Mohawk Lowlands Physiographic Province of New York State (New York State Department of Transportation, 2013). This Physiographic Province is a lowland area primarily bounded by uplands, extending almost the entire length north-south of eastern New York. Generally, the low relief is caused by glacial deposits, except for three ridges in the south of this Province. The landforms of the Project Area are cool wet hills and cool wet mountains on mixed sedimentary rock with grassland, forest, scrub, and shrub.

3.5.2 Site Soils

The USDA NRCS Web Soil Survey is an online resource mapping tool that provides soil data and information for the vast majority of the nation. This information is produced by the National Cooperative Soil Survey (NCSS), in partnership with federal, regional, state, and local agencies and private entities and institutions.

A total of five soil map units were identified within the Project Area. Soil map units represent a type of soil, a combination of soils, or miscellaneous land types. Soil map units are usually named for the predominant soil series or land types within the map unit. Due to limitations imposed by the small scale of the soil survey mapping, it is not uncommon to identify wetlands within areas not mapped as hydric soil, while areas mapped as hydric often do not support wetlands. This concept is emphasized by the NRCS:

“Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.”

Soil drainage in the Project Area is mostly well drained, with approximately 92.9 percent of the mapped soils classified as well drained. The remaining 7.1 percent consists of the Pits, quarries soil unit and do not contain a drainage classification.

The five soil map units identified within the Project Area by the NRCS are outlined in Table 3. Refer to **Figure 3 (Appendix A)** for graphically depicted soil map units of the Project Area.

Hydric Soil

The Web Soil Survey of the Project Area was consulted prior to conducting the delineation to determine the extent of soils meeting hydric criteria as defined by the NRCS. The *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratories, 1987) (1987 Manual) defines a hydric soil as “a soil that in its undrained condition, is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.”

Of the Project soils, none of the soils mapped within the Project Area contain higher percentages (33 percent or more) of mapping units with hydric soil inclusions. These higher rating percentages indicate the potential presence of a wetland feature on site. Hydric Soil Rating indicates the percentage of map units that meet the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor non-hydric components in the higher positions on the landform, and map units that are made up dominantly of non-hydric soils may have small areas of minor hydric components in the lower positions on the landform. As such, each map unit is rated based on its respective components and the percentage of each component within the map unit. Although a soil series will be given a general hydric soil rating on the Web Soil Survey, this rating is for reference only and does not supersede site-specific conditions documented in the field that constitute hydric soil presence in located wetlands.

Table 3. Mapped Soils within the Project Area

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Area	Percent of Project Area (%)
CkD	Charlton-Rock outcrop complex, hilly	20	Well drained	0	7.6	27.7
CoD	Chatfield-Rock outcrop complex, hilly	20	Well drained	0	7.2	26.1
Pv	Pits, quarry	3	N/A	4	7.1	25.9
Ur	Udorthents, refuse substratum	4	Well drained	0	4.4	16.0
YaD	Yalesville sandy loam, 15 to 25 percent slopes	20	Well drained	0	1.2	4.2

4.0 DELINEATION METHODOLOGY

Prior to initiating field investigations, TRC conducted a desktop review of publicly available data to determine the potential presence of federal and state mapped wetlands and streams within the Project Area alongside other potential environmental constraints, which could impact the Project. TRC field biologists subsequently performed field investigations to identify aquatic features within the Project Area. Delineations for wetlands and streams were performed in accordance with criteria set forth in the 1987 Manual (Environmental Laboratory, 1987) and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (USACE, 2012) (Supplement). Data was collected from a sample plot in each delineated wetland. Depending on the size of the delineated area and any change in cover type, multiple sample plots of the delineated wetland may have been taken. Delineation data was recorded on USACE Routine Wetland Determination Forms (**Appendix B**). The boundaries of wetlands were demarcated with pink survey ribbon labeled “wetland delineation” and located with a GPS unit with reported sub-meter accuracy.

4.1 Hydrology

The presence of wetland hydrology is determined based on primary and secondary indicators established by the USACE. The 1987 Manual defines the presence of wetland hydrology when at least one primary indicator or two secondary indicators are identified. One primary indicator is sufficient to determine if hydrology is present; however, if primary indicators are absent, two or more secondary indicators are required to determine the presence of wetland hydrology. If other

probable wetland hydrology evidence was found on-site, then such characteristics were subsequently documented on the USACE Routine Wetland Determination Form. Wetland hydrology indicators are grouped into 18 primary and 11 secondary indicators as presented in the Supplement.

Wetland hydrology may influence the characteristics of vegetation and soils due to anaerobic and reducing conditions (Environmental Laboratory, 1987). This influence is dependent on the frequency and duration of soil inundation or saturation which, in turn, is dependent on a variety of factors including topography, soil stratigraphy, and soil permeability, in conjunction with precipitation, runoff, and stormwater and groundwater influence.

4.2 Vegetation

Hydrophytic vegetation is defined in the 1987 Manual as:

“...the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.”

Plants are categorized according to their occurrence in wetlands. Scientific names and wetland indicator statuses for vegetation are those listed in *The National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al., 2020) (NWPL). Due to regional differences in wetland vegetation, among other characteristics, the USACE divided the United States into regions to improve the accuracy and efficiency of wetland delineations. The indicator statuses specific to the “Northcentral and Northeast Region,” as defined by the USACE, apply to the Project Area. The official short definitions for wetland indicator statuses are as follows:

- Obligate Wetland (OBL): Almost always occur in wetlands.
- Facultative Wetland (FACW): Usually occur in wetlands but may occur in non-wetlands.
- Facultative (FAC): Occur in wetlands and non-wetlands.
- Facultative Upland (FACU): Usually occur in non-wetlands but may occur in wetlands.
- Upland (UPL): Almost never occur in wetlands.

For species with no indicator status in the Project Area’s region, the indicator status assigned to the species in the nearest adjacent region is applied. Plants that are not included on the NWPL within the Project Area’s region, nor an adjacent region, are given no indicator status, and are not included in dominance calculations. Plants that are not listed in any region on the NWPL are considered as UPL on USACE Routine Wetland Determination Forms.

Vegetation in both upland and wetland communities was characterized using areal methods for instituting plot measurement. In accordance with USACE methodology, a plot radius of 30 feet around the soil sample location was applied to tree species and vines, a 15-foot radius for saplings/shrubs, and a 5-foot radius was utilized for herbaceous plants. After the measurement of percent coverage was determined for each species, an application of the 50/20 rule of dominance determination was utilized to determine hydrophytic dominance at sample plots. In using the 50/20 rule, the plants that comprise each stratum are ranked from highest to lowest in percent cover. The species that cumulatively equal or exceed 50 percent of the total percent cover for each stratum are dominant species, and any additional species that individually provides 20 percent or more percent cover are also considered dominant species of its respective strata. The total cover for each stratum, and subsequently the plot as a whole, could exceed 100 percent due to vegetation overlap.

Cover types are also assigned to each wetland. The delineated resources were classified in accordance with the system presented in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (Federal Geographic Data Committee [FGDC], 2013). Field biologists assign cover types to wetlands based on this classification standard and utilize this document. TRC biologists used the definitions for perennial and intermittent streams found in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (FGDC, 2013) when classifying delineated streams. Ephemeral streams have flowing water primarily from rainfall runoff and are above the water table.

4.3 Soils

Hydric soil indicators were determined utilizing the Supplement with added provision from the *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils*, Version 8.2 (USDA NRCS, 2018). Soil characteristics were documented, such as color, texture, layer depth, presence of organic-layers, and evidence of redoximorphic features, which may include indicators such as reduction, oxidation, gleyed matrices, manganese features. Soil test pits were dug using a spade shovel to a depth of approximately 20 inches. If refusal of a soil sample to 20 inches occurred due to the presence of hardpan layer, rock, or hard fill materials, this occurrence was documented. Soil color was described using the *Munsell Soil Color Book* (Munsell Color, 2015). Texture was determined using the USDA feel method (Thien, 1979).

Hydric soil indicators applicable to the Project Area were determined using the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (NRCS, 2006) (MLRA Handbook). Per the MLRA Handbook, the Project Area is within Major Land Resource Area 144A (New England and Eastern New York Upland, Southern Part) and 143 (Northeastern Mountains) of Land Resource Region (LRR) R (Northeastern Forage and Forest Region). Hydric soil indicators that do not apply to this MLRA were not considered.

4.4 Streams

Streams and other non-wetland aquatic features (e.g., lakes and ponds) within the Project Area were identified by the presence of an OHWM, which is the line established by the fluctuations of water (33 CFR 328.3). The OHWM, where not established and available by public record, is indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other characteristics of the surrounding areas.

The streams were delineated from bank to bank with blue flagging and points of the delineated boundaries were located with a handheld GPS unit set for sub-meter accuracy. In streams less than 6 feet wide, sub-meter GPS point capture and post-processing (differential correction) may yield imprecise stream bank measurements due to the narrow nature of the stream. In these circumstances, centerline delineations are applied to maintain accurate representation of stream sinuosity for planning and impact calculation purposes. Stream attributes including width, bank height, and water depth are measured and documented on TRC Stream Inventory Data Forms (**Appendix B**).

5.0 RESULTS

5.1 General Overview

The Project Area contains primarily forested land with reclaimed open field habitat from its historical use as a quarry pit. The estimated average diameter at breast height (DBH) of the trees ranged from 3 to 16 inches, with a few trees attaining DBH measurements of over 24 inches. Dominant vegetation at the Project Area included American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), northern red oak (*Quercus rubra*), black locust (*Robinia pseudoacacia*), and American elm (*Ulmus americana*) in the tree strata; Morrow's honeysuckle (*Lonicera morrowii*), Japanese barberry (*Berberis thunbergii*), European buckthorn (*Rhamnus cathartica*), multiflora rose (*Rosa multiflora*), and privet (*Ligustrum vulgare*) in the shrub strata; common reed (*Phragmites australis*), sensitive fern (*Onoclea sensibilis*), Morrow's honeysuckle, common mugwort (*Artemisia vulgaris*), Japanese honeysuckle (*Lonicera japonica*), garlic mustard (*Alliaria petiolata*), common dandelion (*Taraxacum officinale*), and creeping-jenny (*Lysimachia nummularia*) in the herb strata.

TRC identified and delineated five wetlands and one stream within the Project Area (see **Figure 4, Appendix A**). Approximately 1.5% (0.504 acres) of the approximately 27.5-acre Project Area is classified as wetland. Representative photographs taken of each delineated wetland community and stream within the Project Area are provided in **Appendix C**. Completed USACE Routine Wetland Determination Forms and TRC Stream Inventory Data Forms are provided in **Appendix B**. Tables 4 and 5 below detail the wetlands and streams delineated at the Project Area.

Table 4. Delineated Wetlands within the Project Area

Wetland Field Designation	Cover Type Classification ¹ and Acreage				Total Wetland Acreage within Project Area	NWI Cover Type ²	NYSDEC Wetland ID	NYSDEC Wetland Class ³	Potential Jurisdiction Under Rapanos	Associated Buffer for NYSDEC Wetlands	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PUB								
W-DJB-01	0.025	-	-	-	0.025	None	NA	NA	NA	-	41.2459	-73.9772
W-DJB-02	0.043	-	-	-	0.043	None	NA	NA	NA	-	41.2432	-73.9802
W-DJB-03	0.238	-	-	-	0.238	None	NA	NA	NA	-	41.2424	-73.9813
W-DJB-04	-	-	0.188	-	0.188	PEM1R	NA	NA	USACE	100	41.2418	-73.9815
W-DJB-05	0.010	-	-	-	0.010	None	NA	NA	NA	-	41.2422	-73.9816
Total Wetland Acreage Delineated:					0.504							
¹ PEM – palustrine emergent; PSS – palustrine scrub-shrub; PFO – palustrine forested; PUB – palustrine unconsolidated bottom ² (PEM1R-palustrine, emergent, persistent, seasonally flooded wetland) ³ The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings (I–IV), with Class I being the highest or best quality wetland and Class IV being the lowest quality.												

Table 5. Delineated Streams within the Project Area

Stream Field Designation	Flow Regime Classification	Linear Feet within Project Area	NYSDEC Stream Name and Regulatory ID Number	NYSDEC Classification ¹ and Standard ²	Potential Jurisdiction Under Rapanos	Associated Buffer	Latitude of Centroid	Longitude of Centroid
S-DJB-01	Perennial	317	Unnamed Trib to Hudson River	SC / C	USACE*	N/A	41.240	-73.982
Total Stream Length Delineated:		317						
¹ A classification of C indicates that the best use of the stream is fishing. ² These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes. *Under the Rapanos Approach, the USACE will decide jurisdiction of these streams through a significant nexus determination.								

5.2 Delineated Wetlands

Palustrine Forested wetlands (PFO) – A total of one wetland delineated within the Project Area contained characteristics representative of a forested wetland. Forested wetlands are dominated by woody vegetation that is at least 3 inches DBH, regardless of height, with an understory of shrub and herbaceous species. Understory vegetation presence readily varies, as the upper canopy of tree species may block sufficient light for extensive vegetative growth in the understory. Coniferous swamps, lowland hardwood swamps, and floodplain forests are common types of forested wetlands. Soils in forested wetlands are typically inundated or saturated early spring into summer. Some forested wetlands may dry up entirely, which reveal water stain marks along the trunks of exposed tree species and also shallow, buttressed root systems indicative of periods of heavy inundation events.

The forested wetland on the Project Area was dominated by red maple, black willow (*Salix nigra*), boxelder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*) in the tree strata. The shrub strata was dominated by black willow and multiflora rose. The herbaceous strata was dominated by common reed, creeping-jenny, and field horsetail (*Equisetum arvense*). Evidence of wetland hydrology includes surface water, high water table, saturation, geomorphic position, and the FAC-neutral test. The soils demonstrated a Depleted Matrix (F3) hydric soil indicator.

Palustrine Emergent wetlands (PEM) – A total of four wetlands delineated within the Project Area contained characteristics representative of an emergent wetland community. Emergent wetlands are dominated by herbaceous vegetation that comprises woody and non-woody plants that are less than 3.28 feet tall. Emergent wetlands typically contain deep, nutrient rich soils that remain heavily saturated or even inundated throughout the year.

Emergent wetlands on the Project Area were typically dominated by common reed, sensitive fern, and creeping-jenny. Evidence of wetland hydrology for these wetlands includes saturation, high water table, surface water, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. Emergent wetlands within the Project Area generally demonstrate silt loam to clay loam soils. Variations in the soil matrices generally demonstrated Redox Dark Surface (F6) and Depleted Matrix (F3) hydric soil indicators.

5.3 Delineated Streams

A total of one stream was delineated within the Project Area (see Table 5). Classification of streams were dependent on a temporal description of their usual level of flow regimes. Perennial streams tend to flow all year, except during severe drought conditions. Perennial streams can flow below the water table and receive groundwater flow sources from springs or groundwater seepages on slopes. Intermittent streams flow only during certain times of the year from alternating springs, snow melts, or from runoff from seasonal precipitation events. Intermittent streams can flow above or below the water table. Ephemeral streams flow sporadically and are entirely dependent on transient precipitation from storm events or from periodic snow melts. These streams tend to flow above the water table and are often found as drainage features adjacent to, or within, the headwaters of a more major stream system.

The stream identified in the Project Area was perennial in nature, flowing along a shallow gradient approximately one to five percent. Stream substrates observed were boulders, gravel, cobble, silt and clay. The lower downstream reach of the streambed was a concrete base with a constructed wall along the right bank. The stream enters a concrete box culvert, flows under Park Road, and exits the Project Area. Stream depths ranged from zero to six inches deep. The stream contains aquatic habitat, such as overhanging vegetation and riffle-pool sequences, and sufficient flow to establish and support fish populations.

6.0 CONCLUSIONS

TRC identified and delineated a total of five wetlands (0.504 acres) in the Project Area. Of these wetlands, there was one (W-DJB-04) with PFO characteristics (0.188 acres), and four with PEM characteristics (0.316 acres). TRC assumes that one of the wetlands is likely to be USACE jurisdictional under the Rapanos Approach, as this wetland appears to have a surface water connection to WOTUS. There are no federally protected buffers or setbacks associated with USACE-regulated wetlands. TRC also assumes that four wetlands are isolated with no hydrological connection to WOTUS and would therefore be considered non-jurisdictional by the USACE. One wetland (W-DJB-04) is part of a portion of a NYSDEC mapped wetland (12.4 acres or larger) and would fall under NYSDEC jurisdiction and would therefore require a 100-foot buffer.

TRC identified one perennial stream (317 linear feet) in the Project Area. TRC assumes that the delineated stream will likely be USACE jurisdictional under Rapanos Approach as they are physically connected by surface flow to WOTUS or flow offsite and appear to connect to WOTUS. This stream would also be considered jurisdictional by the NYSDEC as these streams correspond with a NYSDEC mapped Class C stream and would therefore not require a buffer.

Final determination of the jurisdictional status of the wetlands and streams identified on the Project Area must be made by both the USACE and the NYSDEC upon completion of detailed reviews by each respective agency.

7.0 REFERENCES

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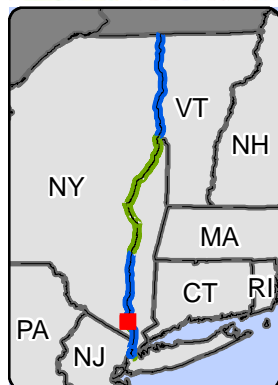
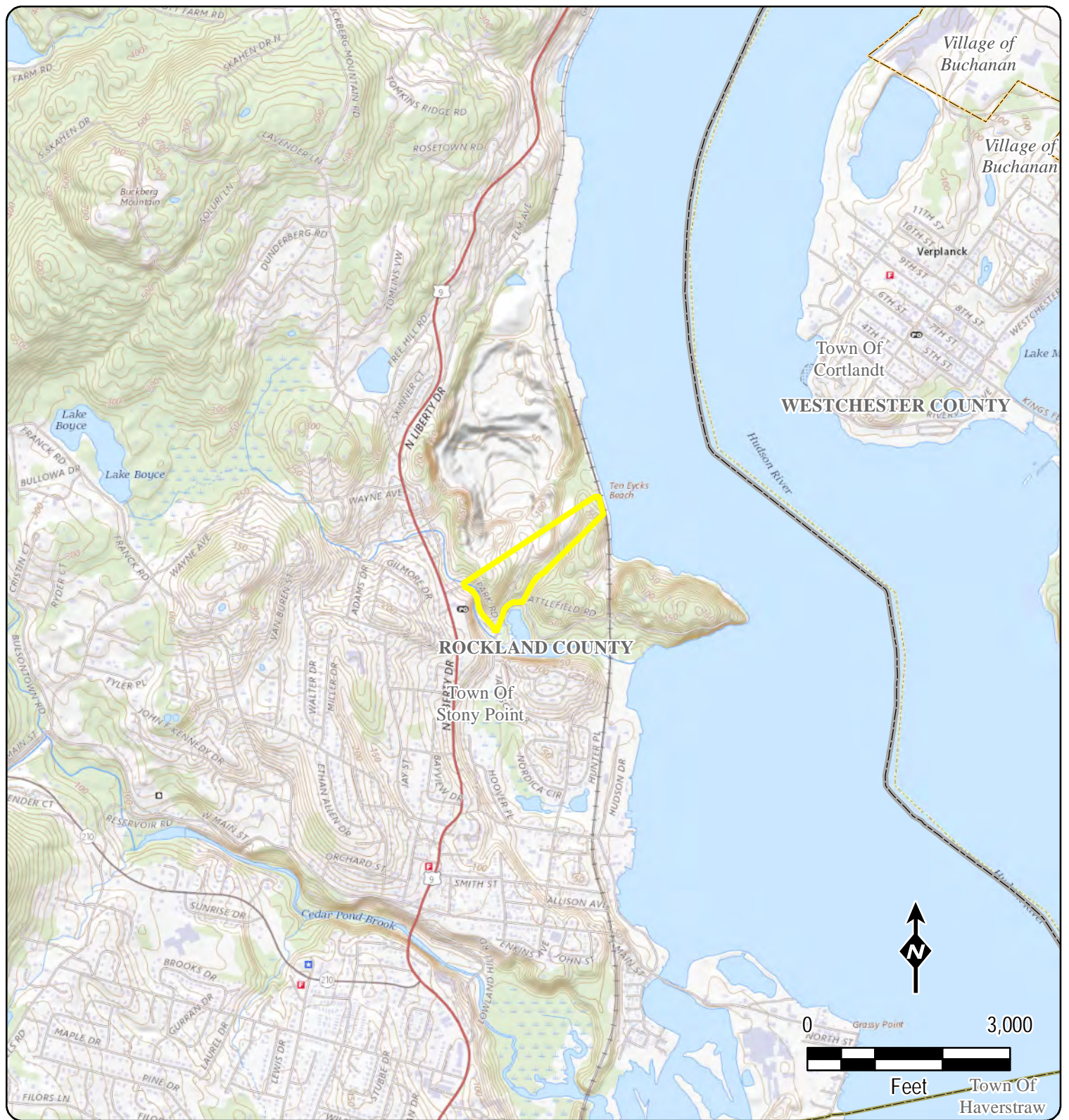
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APPENDIX A

Figures



Legend

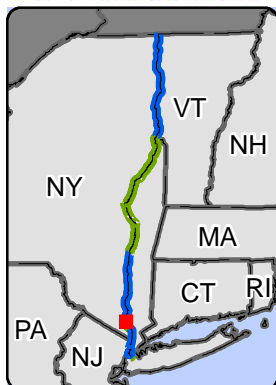
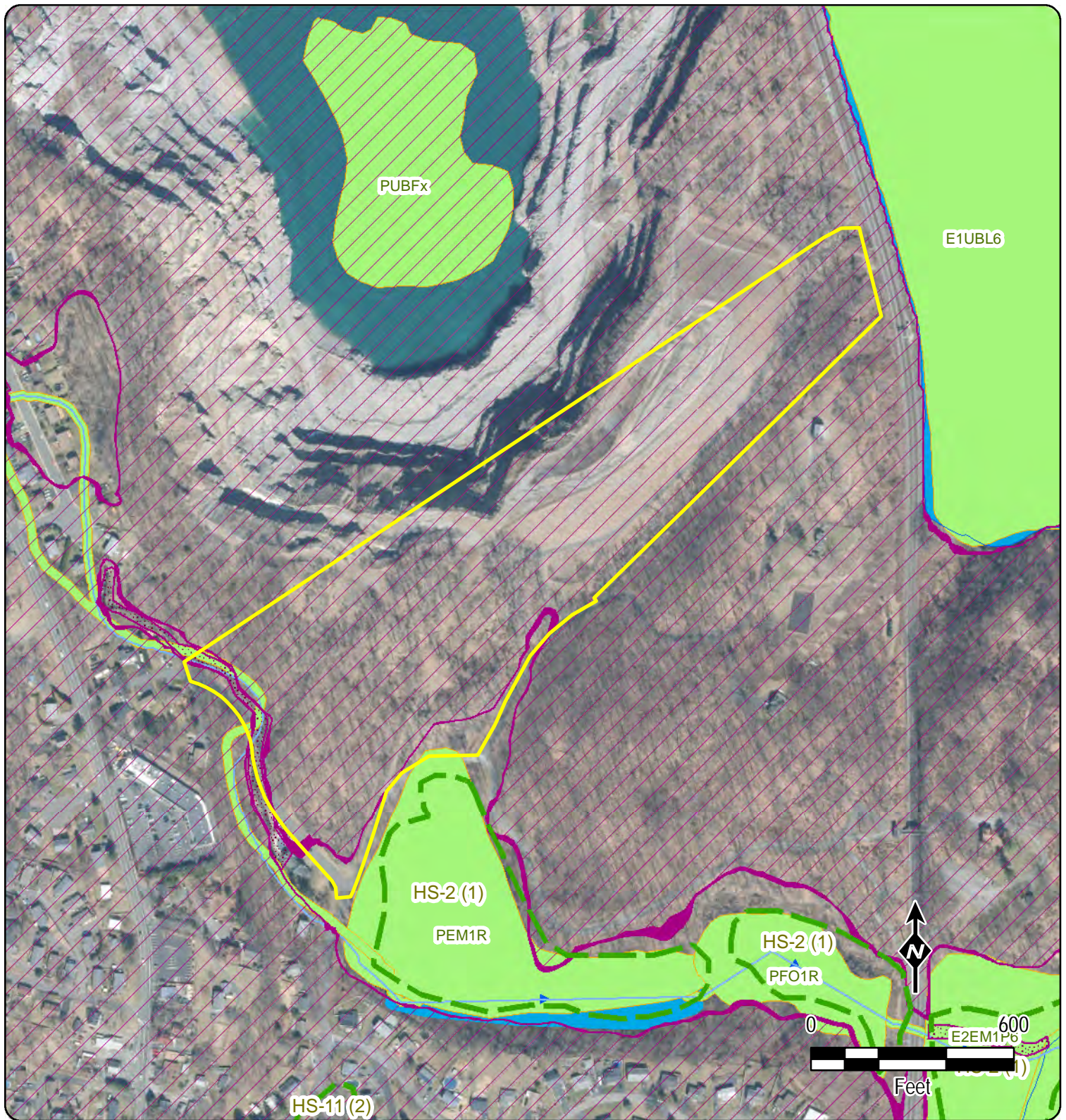
- Survey Area
- County
- City / Town
- Village

TRC

CHAMPLAIN HUDSON POWER EXPRESS
Stony Point HDD

Figure 1
Site Location

Created: 6/3/2022



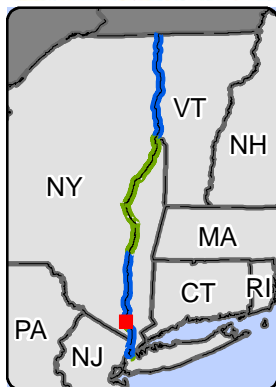
- Survey Area
- NYSDEC Wetland
- Floodway
- Area of Minimal Flood Hazard
- 0.2% Annual Chance Flood Hazard
- NYSDEC Water Quality Line
- NWI
- NHD Flowline
- NHD Waterbody



CHAMPLAIN HUDSON POWER EXPRESS
Stony Point HDD

Figure 2
Federal and State
Resource and Floodplain Mapping

Created: 6/3/2022



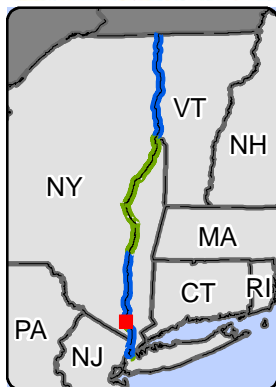
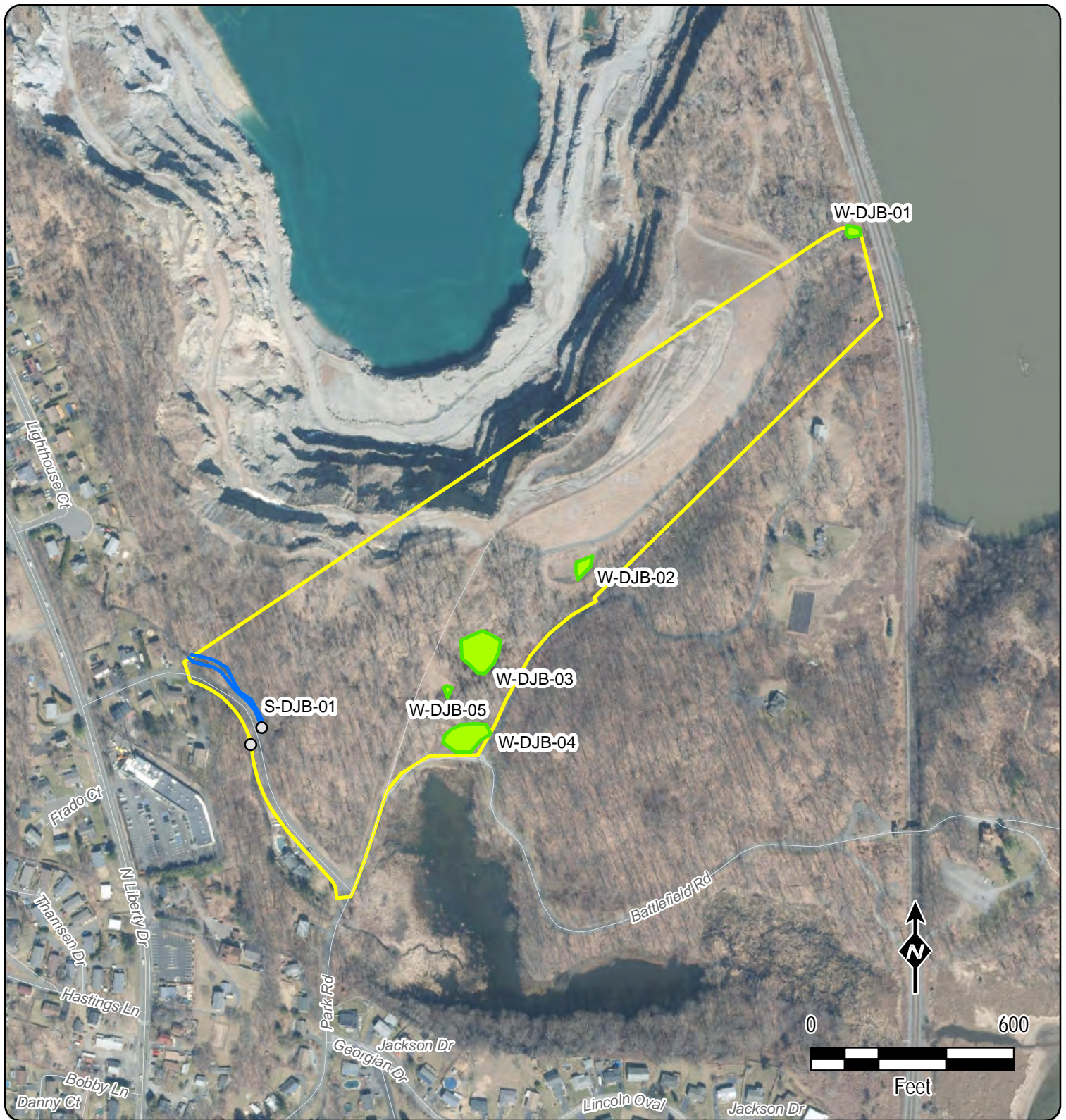
- Survey Area
- Soils (SSURGO)



CHAMPLAIN HUDSON POWER EXPRESS
Stony Point HDD

Figure 3 Project Soils Map

Created: 6/3/2022



- Survey Area
- Culvert
- Delineated Stream TOB
- Delineated Wetland
- Road



CHAMPLAIN HUDSON POWER EXPRESS
Stony Point HDD

Figure 4
Delineated Wetlands
and Other Waters

Created: 6/3/2022

APPENDIX B
USACE Routine Wetland Determination Forms
&
TRC's Stream Inventory Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-01_PEM-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Toe slope Local relief (concave, convex, none): Convex Slope (%): 1 to 10
 Subregion (LRR or MLRA): LRR R Lat: 41.2459706667 Long: -73.9772833333 Datum: WGS84
 Soil Map Unit Name: Chatfield Rock outcrop complex NWI classification: None
 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 ☒ 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 <input checked="" type="checkbox"/> No ____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No ____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No ____	Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No ____
		If yes, optional Wetland Site ID:	W-DJB-01
Remarks: (Explain alternative procedures here or in a separate report) Coverture is PEM. Area is wetland, all three wetland parameters are present.			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>2</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No ____	
Water Table Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>0</u>		
Saturation Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>0</u>		
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: The criterion for wetland hydrology is met. A positive indication of wetland hydrology was observed (primary and secondary indicators were present).					

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-01_PEM-1

Tree Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer negundo</i>	20	Yes	FAC
2.				
3.				
4.				
5.				
6.				
7.				
		20	= Total Cover	
Herb Stratum (Plot size: 5 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Phragmites australis</i>	80	Yes	FACW
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply By:
OBL species	0 x 1 = 0
FACW species	80 x 2 = 160
FAC species	20 x 3 = 60
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column Totals	100 (A) 220 (B)
Prevalence Index = B/A = <u>2.2</u>	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤ 3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ☐

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: W-DIB-01 PEM-1

[illegible]

Hydrology Photos



Soil Photos



Photo of Sample Plot
North

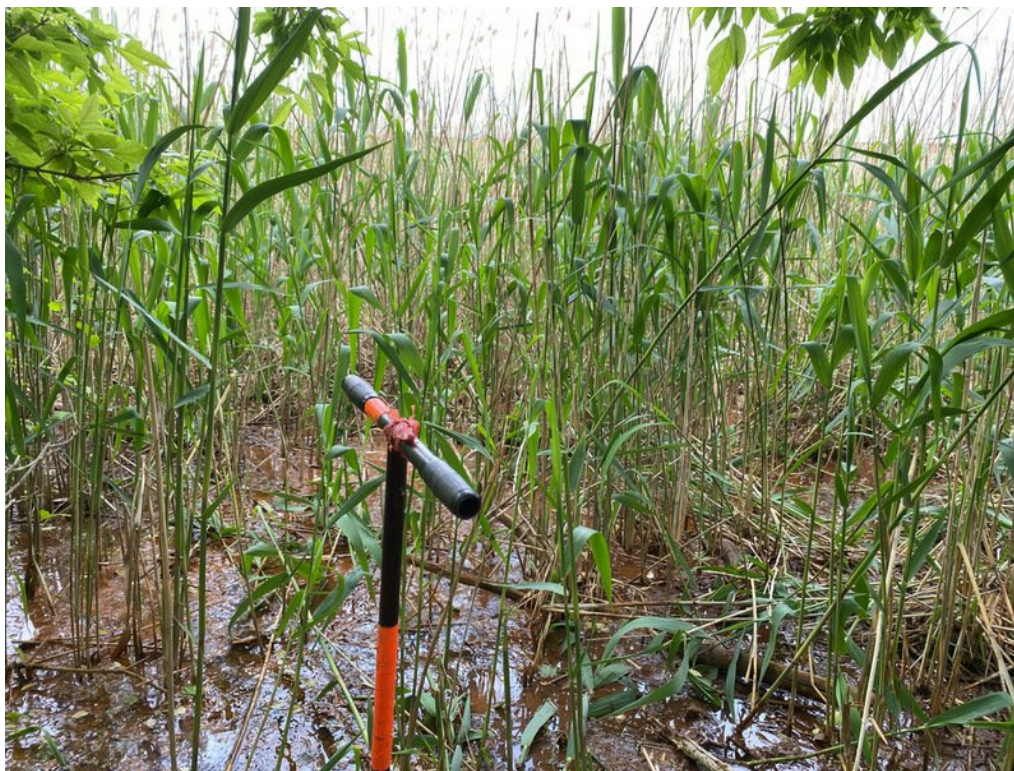


Photo of Sample Plot
East



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-01_UPL-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Foot slope Local relief (concave, convex, none): Convex Slope (%): 5 to 10
 Subregion (LRR or MLRA): LRR R Lat: 41.2457546667 Long: -73.977183 Datum: WGS84
 Soil Map Unit Name: Chatfield rock outcrop complex NWI classification: None
 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 ☒ 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report) Covertypes is UPL. Area is upland, not all three wetland parameters are present.		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____			
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 					
Remarks: The criterion for wetland hydrology is not met. No positive indication of wetland hydrology was observed.					

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-01_UPL-1

Tree Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Herb Stratum (Plot size: <u>5 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Artemisia vulgaris</i>	70	Yes	UPL
2.	<i>Andropogon gerardii</i>	10	No	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		80	= Total Cover	

Woody Vine Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Lonicera japonica</i>	10	Yes	FACU
2.				
3.				
4.				
		10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 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	0 x 3 = 0
FACU species	20 x 4 = 80
UPL species	70 x 5 = 350
Column Totals	90 (A) 430 (B)
Prevalence Index = B/A = <u>4.8</u>	

Hydrophytic Vegetation Indicators:

 1- Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is > 50%

 3 - Prevalence Index is ≤ 3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ✓

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC– or drier).

SOIL

Sampling Point: W-DJB-01_UPL-1

[illegible]

Photo of Sample Plot
North



Photo of Sample Plot
East



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-02_PEM-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 10 to 20
 Subregion (LRR or MLRA): LRR R Lat: 41.2432063333 Long: -73.9802491667 Datum: WGS84
 Soil Map Unit Name: Clearfield Rock outcrop complex NWI classification: None
 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 ☒ 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 <input checked="" type="checkbox"/> No ____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No ____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No ____	If yes, optional Wetland Site ID:	W-DJB-02
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No ____		
Remarks: (Explain alternative procedures here or in a separate report) Covertypes is PEM. Area is wetland, all three wetland parameters are present. Area formerly used as a stormwater basin..			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ____ Surface Water (A1) ____ Water-Stained Leaves (B9) ____ High Water Table (A2) ____ Aquatic Fauna (B13) ____ Saturation (A3) ____ Marl Deposits (B15) ____ Water Marks (B1) ____ Hydrogen Sulfide Odor (C1) ____ Sediment Deposits (B2) ____ Oxidized Rhizospheres on Living Roots (C3) ____ Drift Deposits (B3) ____ Presence of Reduced Iron (C4) ____ Algal Mat or Crust (B4) ____ Recent Iron Reduction in Tilled Soils (C6) ____ Iron Deposits (B5) ____ Thin Muck Surface (C7) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) ____ Other (Explain in Remarks) ____ Sparsely Vegetated Concave Surface (B8)		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) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) ____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ____ Shallow Aquitard (D3) ____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No ____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Formerly used as a storm water basin.		
Remarks: The criterion for wetland hydrology is met. A positive indication of wetland hydrology was observed (primary and secondary indicators were present).		

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-02_PEM-1

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																									
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																								
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
	0	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%; text-align: left;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%; text-align: left;">Multiply By:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align: center;">10</td> <td>x 1 =</td> <td style="text-align: center;">10</td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">90</td> <td>x 2 =</td> <td style="text-align: center;">180</td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">0</td> <td>x 3 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td>x 4 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>Column Totals</td> <td style="text-align: center;">100</td> <td>(A)</td> <td style="text-align: center;">190</td> <td>(B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A =</td> <td style="text-align: center;">1.9</td> <td></td> </tr> </tbody> </table>	Total % Cover of:		Multiply By:			OBL species	10	x 1 =	10		FACW species	90	x 2 =	180		FAC species	0	x 3 =	0		FACU species	0	x 4 =	0		UPL species	0	x 5 =	0		Column Totals	100	(A)	190	(B)	Prevalence Index = B/A =			1.9	
Total % Cover of:		Multiply By:																																										
OBL species	10	x 1 =	10																																									
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Column Totals	100	(A)	190	(B)																																								
Prevalence Index = B/A =			1.9																																									
				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> No ___																																								
				Remarks: (Include photo numbers here or on a separate sheet.) A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00). A positive indication of hydrophytic vegetation was observed (Rapid Test for Hydrophytic Vegetation).																																								

SOIL

Sampling Point: W-DJB-02_PEM-1

[illegible]

Soil Photos



Photo of Sample Plot
North



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-02_UPL-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2 to 5
 Subregion (LRR or MLRA): LRR R Lat: 41.2431061667 Long: -73.9801906667 Datum: WGS84
 Soil Map Unit Name: Clearfield rock outcrop complex NWI classification: None
 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 ☒ 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 <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes ____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes ____ No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes ____ No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report) Covertypes is UPL. Area is upland, not all three wetland parameters are present.		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes ____ No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 					
Remarks: The criterion for wetland hydrology is not met. No positive indication of wetland hydrology was observed.					

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-02_UPL-1

Tree Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Herb Stratum (Plot size: <u>5 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Artemisia vulgaris</i>	40	Yes	UPL
2.	<i>Andropogon gerardii</i>	28	Yes	FACU
3.	<i>Trifolium repens</i>	5	No	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		73	= Total Cover	

Woody Vine Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Lonicera japonica</i>	10	Yes	FACU
2.				
3.				
4.				
		10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 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	0 x 3 = 0
FACU species	43 x 4 = 172
UPL species	40 x 5 = 200
Column Totals	83 (A) 372 (B)
Prevalence Index = B/A = <u>4.5</u>	

Hydrophytic Vegetation Indicators:

 1- Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is > 50%

 3 - Prevalence Index is ≤ 3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ✓

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC– or drier).

SOIL

Sampling Point: W-DJB-02_UPL-1

[illegible]

Photo of Sample Plot
North



Photo of Sample Plot
East



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-03_PEM-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1 to 10
 Subregion (LRR or MLRA): LRR R Lat: 41.2424481667 Long: -73.9813625 Datum: WGS84
 Soil Map Unit Name: Pits, quarry NWI classification: None

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 ☒ 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, optional Wetland Site ID:	W-DJB-03
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: (Explain alternative procedures here or in a separate report) Coverture is PEM. Area is wetland, all three wetland parameters are present.			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 			
Remarks: A positive indication of wetland hydrology was observed (at least two secondary indicators). The criterion for wetland hydrology is met.			

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-03_PEM-1

Tree Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Salix nigra</i>	20	Yes	OBL
2.				
3.				
4.				
5.				
6.				
7.				
		20	= Total Cover	
Herb Stratum (Plot size: <u>5 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Phragmites australis</i>	60	Yes	FACW
2.	<i>Lysimachia nummularia</i>	60	Yes	FACW
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		120	= Total Cover	
Woody Vine Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	<u>20</u>	x 1 =	<u>20</u>
FACW species	<u>120</u>	x 2 =	<u>240</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals	<u>140</u>	(A)	<u>260</u> (B)
Prevalence Index = B/A =		<u>1.9</u>	

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤ 3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ☐

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00). A positive indication of hydrophytic vegetation was observed (Rapid Test for Hydrophytic Vegetation).

SOIL

Sampling Point: W-DIB-03 PEM-1

[illegible]

Soil Photos



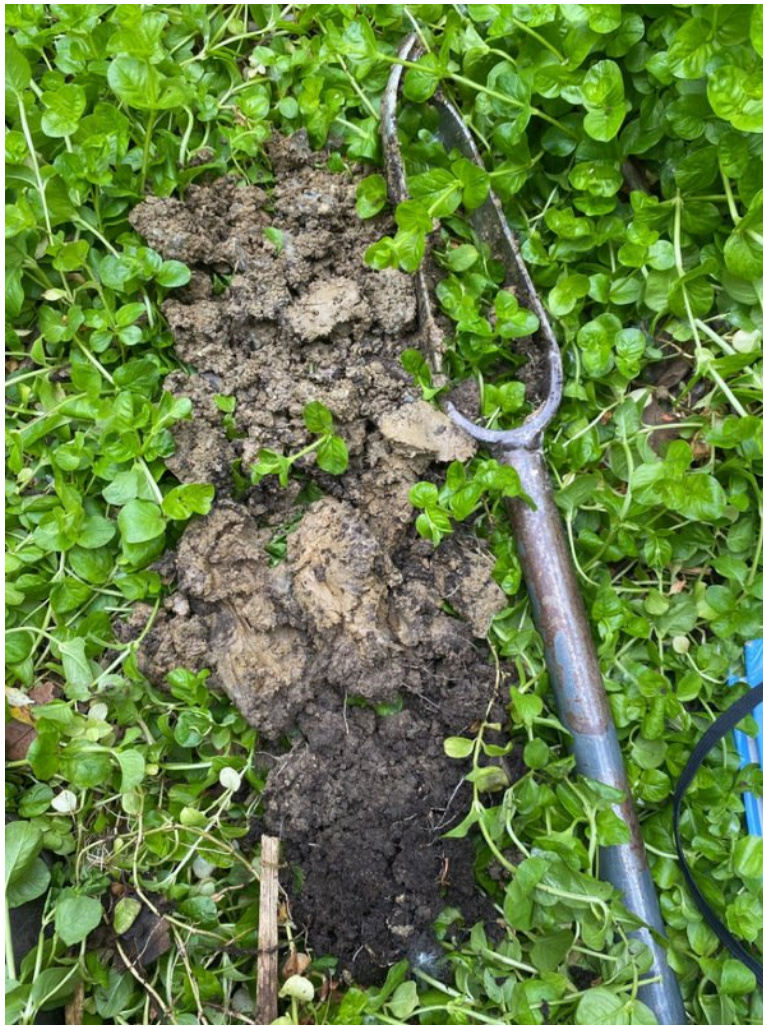


Photo of Sample Plot
North



Photo of Sample Plot
East



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-04_PFO-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Foot slope Local relief (concave, convex, none): Concave Slope (%): 1 to 10
 Subregion (LRR or MLRA): LRR R Lat: 41.2418928333 Long: -73.9815215 Datum: WGS84
 Soil Map Unit Name: Charlton rock outcrop complex NWI classification: _____
 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 ☒ 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 <input checked="" type="checkbox"/> No ____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No ____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No ____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No ____	If yes, optional Wetland Site ID:	W-DJB-04
Remarks: (Explain alternative procedures here or in a separate report) Covertypes is PFO. Area is wetland, all three wetland parameters are present.			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input checked="" type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)			
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>1</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No ____	
Water Table Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>2</u>		
Saturation Present?	Yes <input checked="" type="checkbox"/> No ____	Depth (inches):	<u>0</u>		
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 					
Remarks: The criterion for wetland hydrology is met. A positive indication of wetland hydrology was observed (primary and secondary indicators were present).					

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-04_PFO-1

Tree Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Salix nigra</i>	40	Yes	OBL
2.	<i>Fraxinus pennsylvanica</i>	20	Yes	FACW
3.	<i>Acer negundo</i>	10	No	FAC
4.				
5.				
6.				
7.				
		70	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Salix nigra</i>	20	Yes	OBL
2.	<i>Rosa multiflora</i>	10	Yes	FACU
3.				
4.				
5.				
6.				
7.				
		30	= Total Cover	
Herb Stratum (Plot size: <u>5 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Phragmites australis</i>	60	Yes	FACW
2.	<i>Lysimachia nummularia</i>	60	Yes	FACW
3.	<i>Equisetum arvense</i>	20	No	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		140	= Total Cover	
Woody Vine Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= 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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply By:
OBL species <u>60</u>	x 1 = <u>60</u>
FACW species <u>140</u>	x 2 = <u>280</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals <u>240</u>	(A) <u>470</u> (B)
Prevalence Index = B/A = <u>2</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤ 3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: W-DJB-04 PFO-1

[illegible]

Soil Photos



Photo of Sample Plot
East



Photo of Sample Plot
West



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-05_PEM-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1 to 10
 Subregion (LRR or MLRA): LRR R Lat: 41.2422581667 Long: -73.9816686667 Datum: WGS84
 Soil Map Unit Name: Pits quarry NWI classification: _____
 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 ☒ 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 <input checked="" type="checkbox"/> No ____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No ____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No ____	If yes, optional Wetland Site ID:	W-DJB-05
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No ____		
Remarks: (Explain alternative procedures here or in a separate report) Coverture is PEM. Area is wetland, all three wetland parameters are present.			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Moss Trim Lines (B16)		<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Crayfish Burrows (C8)		<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Stunted or Stressed Plants (D1)		<input checked="" type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Shallow Aquitard (D3)		<input type="checkbox"/> Microtopographic Relief (D4)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)					
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)						
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)						
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)						
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)							
Field Observations: Surface Water Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes ____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No ____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 							
Remarks: A positive indication of wetland hydrology was observed (at least two secondary indicators). The criterion for wetland hydrology is met.							

Sampling Point: W-DIB-05 PEM-1

Tree Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Salix nigra</i>	20	Yes	OBL
2.				
3.				
4.				
5.				
6.				
7.				
		20	= Total Cover	
Herb Stratum (Plot size: 5 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Phragmites australis</i>	60	Yes	FACW
2.	<i>Lysimachia nummularia</i>	60	Yes	FACW
3.	<i>Onoclea sensibilis</i>	5	No	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		125	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply By:
OBL species	20 x 1 = 20
FACW species	125 x 2 = 250
FAC species	0 x 3 = 0
FACU species	0 x 4 = 0
UPL species	0 x 5 = 0
Column Totals	145 (A) 270 (B)
Prevalence Index = B/A = 1.9	

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤ 3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ☐

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00). A positive indication of hydrophytic vegetation was observed (Rapid Test for Hydrophytic Vegetation).

SOIL

Sampling Point: W-DJB-05_PEM-1

[illegible]

Photo of Sample Plot
North



Photo of Sample Plot
West



WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Point HDD City/County: Stony Point, Rockland County Sampling Date: 2022-May-24
 Applicant/Owner: Champlain Hudson Power Express (CHPE) State: NY Sampling Point: W-DJB-03/04/05_UPL-1
 Investigator(s): David Bonomo Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Undulating Slope (%): 10 to 20
 Subregion (LRR or MLRA): LRR R Lat: 41.2421337695 Long: -73.9816977902 Datum: WGS84
 Soil Map Unit Name: Charlton-Rock outcrop complex NWI classification: None
 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 ☒ 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report) Covertypes is UPL. Area is upland, not all three wetland parameters are present.		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 					
Remarks: The criterion for wetland hydrology is not met. No positive indication of wetland hydrology was observed.					

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DJB-03/04/05 UPL-1

Tree Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Robinia pseudoacacia</i>	60	Yes	FACU
2.	<i>Platanus occidentalis</i>	25	Yes	FACW
3.				
4.				
5.				
6.				
7.				
		85	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Berberis thunbergii</i>	50	Yes	FACU
2.	<i>Rosa multiflora</i>	15	Yes	FACU
3.	<i>Ligustrum vulgare</i>	10	No	FACU
4.				
5.				
6.				
7.				
		75	= Total Cover	
Herb Stratum (Plot size: <u>5 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Artemisia vulgaris</i>	40	Yes	UPL
2.	<i>Alliaria petiolata</i>	25	Yes	FACU
3.	<i>Trifolium repens</i>	5	No	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		70	= Total Cover	
Woody Vine Stratum (Plot size: <u>30 ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Lonicera japonica</i>	10	Yes	FACU
2.				
3.				
4.				
		10	= 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply By:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>175</u>	x 4 = <u>700</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column Totals <u>240</u>	(A) <u>950</u> (B)
Prevalence Index = B/A = <u>4</u>	

Hydrophytic Vegetation Indicators:

 1- Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is > 50%

 3 - Prevalence Index is ≤ 3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 ✓

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC– or drier).

SOIL

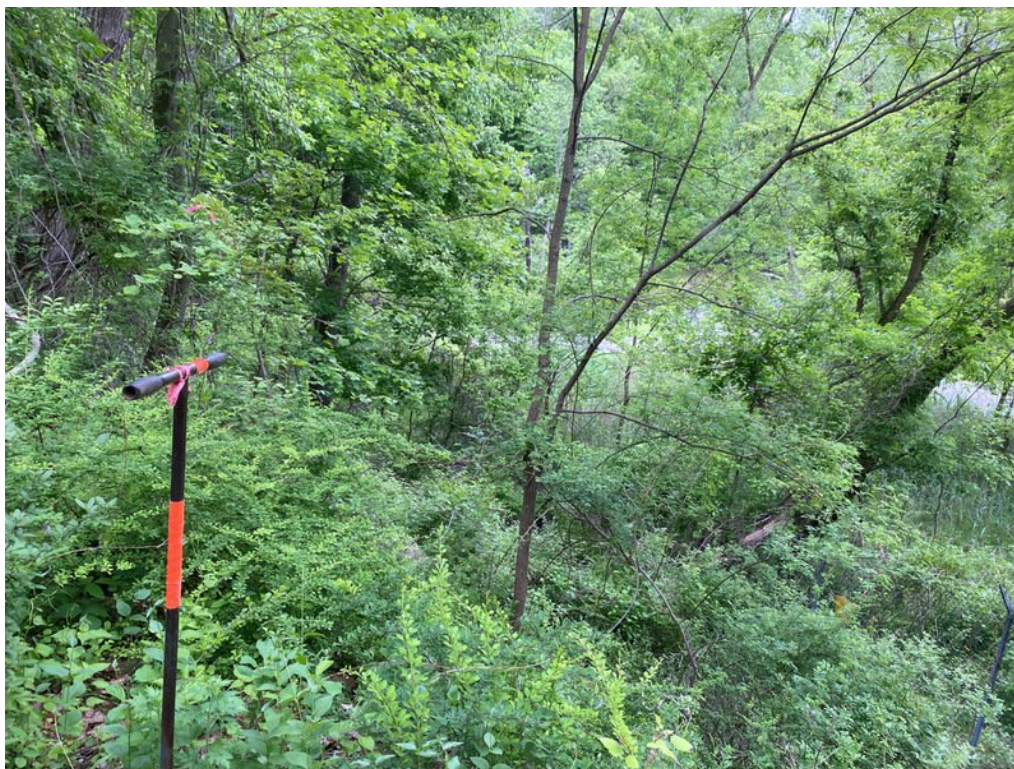
Sampling Point: W-DJB-03/04/05_UPL-1

[illegible]

Photo of Sample Plot
North



Photo of Sample Plot
East





STREAM AND WATERBODY INVENTORY

CLIENT: CHPE PROJECT: STONY POINT HDD

S-DJB-01, Perennial

PLOT OVERVIEW

ID	S-DJB-01	Classification	Perennial
Waterbody Name		Date	2022-05-24 13:11:40
Evaluators	David Bonomo		
Address (Approx.)	68 Park Rd Stony Point Rockland County NY 10980 US		
Location Description			
Lat. / Long. (WGS84)	41.24256515, -73.98493194		

STREAM / WATERBODY CHARACTERISTICS

Flow Stage	Moderate	Flow Direction	S
Average Depth (in.)	4	Probed Stream Depth	0 to 6 inches
Perceptible Flow	Yes	Obstruction	NA
Channel Substrate	Boulders,Cobble/Gravel,Silt/Clay	Channel Gradient	2 to 4% (1 to 2 deg) Moderate
Is floodplain present?	no	Bankfull Width (ft)	NA
Existing Water Width (ft)	8	Top of Bank (ft)	15
Water Quality	Clear	Presumed Regulatory Authority	
Ordinary High Water Mark (ft)	10	Canopy Closure (Est.)	40 to 50%
OHWM Indicators	Bed and Banks,Deposition,Scour		
Water Quality Comments			
Bank Substrate	Cobble/Gravel		
Aquatic Habitat	Overhanging Vegetation,Riffle - Pool		
Observed Use	Drainage		
Observed Fauna			
RTE Species & Evidence			
Notes			

	BANK HEIGHT (ft)	BANK SLOPE	BANK EROSION POTENTIAL
Left Bank	10	> 35% (> 20 deg) Very Steep	Low
Right Bank	3	25 to 35% (14 to 20 deg) Steep	Moderate

PHOTOS

Upstream Photo:



Downstream Photo:



Across Stream/Waterbody Photo:



APPENDIX C

Photograph Log



Photograph 1. View of PEM Wetland W-DJB-01 located along the eastern portion of the Project Area boundary. Wetland hydrology is evident in the foreground with common reed as the dominant vegetation. Photo taken on 5/27/2022.



Photograph 2. View of PEM Wetland W-DJB-02 located near the center of the Project Area. Common reed was the dominant vegetation within this depressional feature formerly utilized as a stormwater basin. Photo taken on 5/27/2022.



Photograph 3. View of PEM Wetland W-DJB-03 located in the southwestern portion Project Area. Common reed was the dominant vegetation as seen in the background. Photo taken on 5/27/2022.



Photograph 4. View of PFO Wetland W-DJB-04 located along the southwestern portion Project Area. Common reed was the dominant emergent vegetation seen in the foreground with a forested canopy. Photo taken on 5/27/2022.



Photograph 5. View of PEM Wetland W-DJB-05 located in the southwestern portion Project Area. Common reed as the dominant vegetation seen in the background. Photo taken on 5/27/2022.



Photograph 6. View of perennial Stream S-DJB-01 located in the northwestern portion Project Area. Photo taken on 5/27/2022.



Photograph 7. Upstream view of perennial Stream S-DJB-01. Photo taken on 5/27/2022.



Photograph 8. Typical view of the upland habitat at USACE data point W-DJB-01_UPL-1 in the eastern portion of the Project Site. Photo taken on 5/27/2022.



Photograph 9. View of upland habitat in the eastern portion of the Project Site. Photo taken on 5/27/2022.



Photograph 10. View of upland habitat overlooking Wetland W-DJB-02. Photo taken on 5/27/2022.



Photograph 11. View of quarry pits located along the northern Project Site boundary. Photo taken on 5/27/2022.



Photograph 12. View of quarry pits located along the northern Project Site boundary. Photo taken on 5/27/2022.