Appendix K: Wetland & Waterbodies Delineation Report

Champlain Hudson Power Express

Revised Wetland & Waterbodies Delineation Report – Phase 1

Case 10-T-0139
Putnam - Whitehall, New York

CHA Project Number: 066076

Prepared for:
Transmission Developers Inc.
600 Broadway Street
Albany, NY 12207

Prepared by:

III Winners Circle
Albany, NY 12205
Phone: (518) 453-4500

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SIGNATURE PAGE

This report has been prepared and reviewed by the following qualified personnel employed by CHA.

Original Report Prepared By:

Cole A. Scrivner
Scientist II

July 2022 Report Addendum Prepared By:

John W. Greaves
Senior Scientist V

Report Reviewed By:

Christopher R. Einstein, PWS
Principal Scientist

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1.0 INTRODUCTION

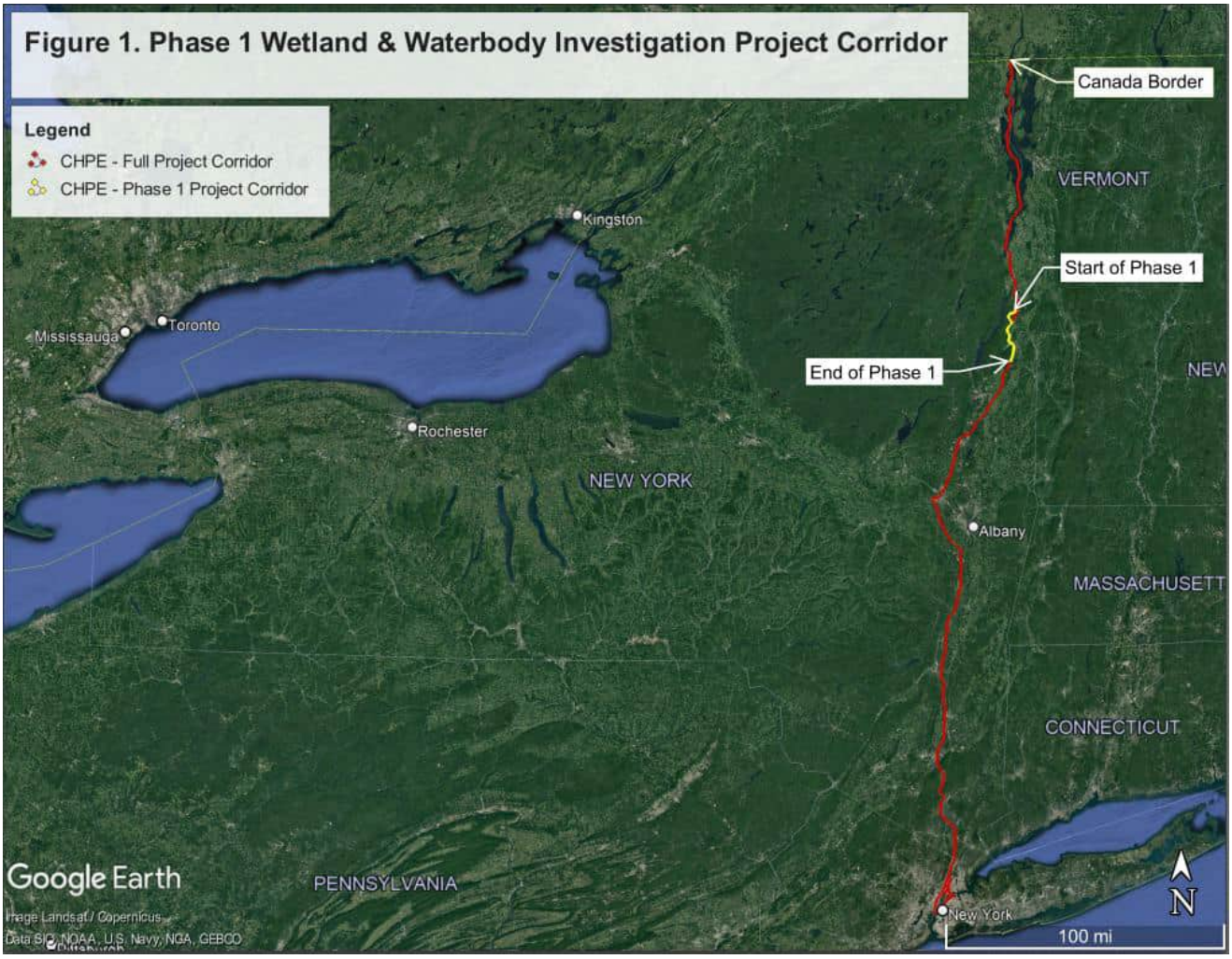
CHA Consulting, Inc. ("CHA") has prepared this wetland and waterbodies delineation report on behalf of Champlain Hudson Power Express, Inc. ("CHPE") and Kiewit Construction (Kiewit) for the Champlain Hudson Power Express Project (Project). CHA was retained by Kiewit to identify and delineate jurisdictional wetlands and waterbodies regulated under Section 404 of the Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act of 1899, and Article 24 Freshwater Wetlands Act (FWW) and Article 15 (Protection of Waters) of the Environmental Conservation Law along the overland transmission cable route that follows State, county and local roadways and the Canadian-Pacific ("CP") railroad rights-of-way ("ROW"). Delineations were conducted with the objective of verifying and updating previous wetland delineations performed for the Project Corridor as part of the Article VII and Section 10/404 permitting processes. This report is an addendum to the February 2022 delineation report. It describes the wetland delineation methodology and the existing wetland and waterbody resources that were identified in the Project Corridor (also defined as the Jurisdictional Determination limits) during field surveys for the overland portions of the Project.

This revision includes the laydown and staging area located on Ryder Road (new wetlands SA1, SA2, SA3 & SA4), additional delineation along Lake Road (expanded delineations of Wetlands CO and CP, Stream CS13, and delineation of a wetland (Wetland CPA) abutting Stream CS13 on the south side of Lake Road), and additional delineation along Route 22 (Wetlands 1A-A, A1-B, A1-C, 1A-D, 1B-A, and Stream 1B-S1) to reflect alignment changes resulting from discussion with the NYS Department of Transportation.

2.0 PHASE I CORRIDOR OVERVIEW

From the Canada border, the proposed transmission cable route enters Lake Champlain and travels south to the Town of Putnam, New York. In the Town of Putnam, the transmission cables will transition from the waters of Lake Champlain to the land on the western shore via a horizontal directional drill ("HDD") and subsequently enters County Route 3 and Lake Road for approximately 3.2 miles (approximate Sta. 10000 +00 to Sta.10161+00) to intersect with the New York State Route 22 ROW. The cables continue within the Route 22 ROW approximately 16.5 miles (approximate Sta.12500+00 to Sta 13038+71) until the CP Railroad ROW. The cable route enters the CP ROW and remains primarily within the ROW for approximately 5.9 miles (Sta. 15000+10 to Sta. 15306+44) to the end of Phase I. The entire project corridor is approximately 339 miles from Montreal, Quebec, Canada to New York City, New York, USA. Figure 1 below shows the route from the Canadian border to New York City and highlights the approximately 27 miles of the Phase 1 Project Corridor that was investigated for wetlands and waterbodies.

Figure 1: Package 1 Wetland & Waterbody Investigation Project Corridor



3.0 WETLAND DELINEATION METHODOLOGY

To determine the potential for wetland impacts from construction of the Project, CHA assessed the Project survey area in the field for the presence of federal (Section 404 CWA & Section 10 of the Rivers and Harbors Act of 1899) and state (Article 24 FWW) jurisdictional wetlands. Greenman Pedersen, Inc. (GPI) assisted with the field work. Wetland scientists from CHA conducted wetland delineations from October to January 2022, and as part of this addendum, again in April and August 2022. The delineation criteria and methodology were performed in accordance with the United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual, the *Regional Supplement to the Corps of Engineers Wetland Manual: Northcentral and Northeast Region* (January 2012) wetland as well as the New York State Freshwater Wetlands Delineation Manual (Browne et. al., 1995).

The Project Corridor for the surveyed portions of the project included the land within the existing NYS Route 22 ROW, County Route 3, local roads, and the CP railroad ROW. The wetland delineation limits were approximately 50 feet from the edge of pavement and approximately 100 feet from the outside edge of rail, limited to the side of the road or railroad corridor on which the alignment follows and within the ROW of the aforementioned roads and railroad.

In accordance with the procedures provided in the USACE Wetland Delineation Manual (1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012), the "Routine Wetland Determination" method was used to delineate wetland boundaries.

The wetland boundaries were determined in the field based on the three-parameter approach, whereby an area is a wetland if it exhibits vegetation adapted to wet conditions (hydrophytes), hydric soils, and the presence or evidence of water at or near the soil surface during the growing season (hydrology).

Coded surveyor's ribbons (e.g. flag code A-1, A-2, etc.) were placed along the wetland boundaries based on observations of vegetation, soils and hydrologic conditions. Data points were recorded along the wetland boundaries at various locations across different vegetative community types correlating to each wetland. At each location a wetland data point and an upland data point were recorded to show the difference between the wetland and upland habitats. At a minimum, one data

point set (wetland and upland) was collected for each wetland. Additional data points were collected for large wetlands and for changes in vegetative communities. Wetland Determination Data Sheets corresponding to each point can be found in Attachment 1.

Wetlands within the Phase 1 Project Corridor falls under the jurisdiction of the USACE, Adirondack Park Agency (APA) and the New York State Department of Environmental Conservation (NYSDEC). The New York State methodology similarly recognizes the three parameters of vegetation, soils, and hydrology; however, under the New York State method the hydric vegetation criterion is mandatory, while the other two parameters are not (Browne et. al. 1995). Wetlands regulated by the APA are typically one acre or more in size. Those wetlands regulated by NYSDEC (outside the Adirondack Park) must be at least 12.4 acres (5 hectares) in size, unless they are deemed to have unusual local importance (Article 24 FWW). The NYSDEC and APA publish maps of wetland areas under state jurisdiction; however, both agencies use field delineation to determine the precise boundaries of these wetland areas.

Prior to actual field delineations for wetland resources, CHA reviewed USGS 7.5-minute topographic maps, aerial photographs, National Wetland Inventory (NWI) mapping, United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil mapping, NYSDEC freshwater wetlands mapping and APA wetland mapping to identify potential wetland features present within the Project Corridor. More importantly, CHA used the previous wetland delineation prepared for this Project Corridor and alternatives for the purposes of verifying and modifying the previous delineation. Refer to Attachment 2 for NWI and NYSDEC Freshwater Wetland & Stream Mapping and Attachment 3 for NRCS Soil Mapping.

Waterbodies within the Project Corridor, including streams under NYSDEC Article 15 jurisdiction, were identified by the presence of an ordinary high-water mark (OHWM) or stream channel. Delineation and flagging were completed to identify the ordinary high-water mark (OHWM) for most perennial and intermittent streams.

This report documents the wetlands and waterbodies potentially under federal and State jurisdiction that were identified in the survey area along the current proposed underground transmission cable route. Summaries of wetlands that were identified are provided in Table 4-1 in Attachment 4. Wetlands and Waterbodies Delineation Mapping is included in Attachment 5.

Wetland determination data forms and photographic documentation of the wetlands are included in Attachment 1.

4.0 WETLAND & WATERBODIES DELINEATION RESULTS

A total of 112 wetland areas were identified in the survey area along the Phase I Project Corridor totaling approximately 34.5 acres within the Project Corridor (also defined as the Jurisdictional Determination limits). Table 4-1 in Attachment 4 provides a summary of the wetlands identified along the Phase I Project Corridor, including their classification in accordance with Cowardin et al. (1979) and their state or federal jurisdiction. Of these, seven (7) wetlands delineated along the Project Corridor correspond with wetlands mapped by the NYSDEC.

Narrative descriptions of wetland vegetation, hydrology, and soils observed within the Project survey area are presented in the following sections. The wetlands delineated within the surveyed areas are summarized in Table 4-1. Table 4-2 summarizes the waterbodies identified within the surveyed areas. Table 4-3 provides the soil series information assembled for the Project Corridor. Refer to Attachment 4 for each of these tables. The Wetlands and Waterbodies Delineation Mapping shows the locations of delineated wetlands and waterways are provided in Attachment 5. Photographs of the waterbodies can be found in Attachment 6.

4.1 VEGETATION

Vegetative communities within wetlands are described according to *Ecological Communities of New York State, Second Edition* (Edinger 2014)[1] and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979)[2]. Using this hierarchical wetland classification system three primary cover types were identified for vegetated wetlands in the survey area: palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) wetlands.

[1] Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. *Ecological* Communities *of New York State.* Second Edition. A revised and expanded edition of Carol Reshke's *Ecological Communities of New York State*. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

[2] Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe, 1979. *Classification of wetlands and deepwater habitats of the United States*. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

Some wetlands contained co-dominant emergent, scrub-shrub, or forested vegetation. Open water areas were identified as palustrine unconsolidated bottom (PUB), lacustrine limnetic unconsolidated bottom (L1UB), and lacustrine littoral aquatic bed (L2AB).

4.1.1 Palustrine Emergent Wetland

The palustrine emergent wetland cover type is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et. al., 1979). The freshwater emergent wetlands along the Project survey area primarily include shallow emergent marshes, deep emergent marshes, common reed/purple loosestrife marshes, and ditch/artificial intermittent stream channels (Edinger et. al., 2014). PEM wetlands occur as a single dominant wetland cover type, and as a co-dominant wetland type when other plant community types exist within the wetland.

Shallow emergent marshes occur on mineral soils or deep muck soils that are permanently saturated and seasonally flooded. Water depths range from 6 inches to 3.3 feet during flood stages (Edinger et. al., 2014). Characteristic vegetation of shallow emergent marshes within the Project survey area includes cattails (*Typha* spp.), sedges (*Carex spp*.), goldenrods (*Solidago* spp.), spotted joe-pye-weed (*Eupatorium maculatum*), reed canary grass (*Phalaris arundinacea*), scouring rush (*Equisetum hyemale*), sensitive fern (*Onoclea sensibilis*), and soft rush (*Juncus effusus*). Invasive species observed within the shallow emergent marshes include common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*).

Deep emergent marshes occur on mineral soils or fine-grained organic soils with water depths ranging from 6 inches to 6.6 feet (Edinger et. al., 2002). Emergent vegetation observed within deep emergent marshes in the Project survey area includes cattails and bulrushes (*Scirpus spp*.). Common reed and purple loosestrife were observed within some of the deep emergent marshes within the Project Corridor.

Common reed/purple loosestrife marshes consist of disturbed marshes where common reed or purple loosestrife has become dominant (Edinger et. al., 2014). This community was commonly found within disturbed areas adjacent to the CP rail bed.

The ditch/artificial intermittent stream community consists of artificial waterways constructed for drainage or irrigation (Edinger et. al., 2014). Vegetation within the ditches is typically dominated by grasses and sedges. Invasive species such as common reed, purple loosestrife, and reed canary grass are commonly found within the ditches along the railroad and highway ROWs.

4.1.2 Palustrine Scrub-Shrub Wetland

The scrub-shrub wetland cover type includes areas that are dominated by saplings and shrubs that are less than 20 feet tall (Cowardin et. al., 1979). Scrub-shrub wetlands along the Project survey area were dominated by silky dogwood (*Cornus amomum*), gray dogwood (*Cornus racemosa*), and honeysuckle (*Lonicera spp*.). Other vegetation observed includes black willow (*Salix nigra*), gray birch (*Betula populifolia*), weeping crack willow (Salix *babylonica*), and nannyberry (*Viburnum lentago*). Invasive species observed within scrub-shrub wetlands includes honeysuckle and common buckthorn (*Rhamnus cathartica*). PSS wetlands occur as a single dominant wetland cover type, and as a co-dominant wetland type when other plant community types exist within the wetland.

4.1.3 Palustrine Forested Wetland

Forested wetland cover types are dominated by trees and shrubs that have a tolerance to a seasonal high-water table. For a community to be characterized as forested, a wetland must be dominated by trees and shrubs that are at least six meters tall (Cowardin et. al., 1979). Forested wetlands typically have a mature tree canopy, and depending upon the species and density, can have a broad range of understory and groundcover community components. Forested wetland communities along the Project survey area include red maple hardwood swamps, floodplain forest, and silver maple-ash swamps (Edinger et al., 2014). PFO wetlands occur as a single dominant wetland cover type, and as a co-dominant wetland type when other plant community types exist within the wetland.

Red maple-hardwood swamps occur in poorly drained depressions, usually on inorganic soils. Red maple is either the only dominant tree species or is codominant with one or more hardwoods (Edinger et. al, 2014). Hardwood species observed within this community type within the Project survey area include green and white ash (*Fraxinus pennsylvanica and F. americana*), American elm (*Ulmus americana*), northern red oak (*Quercus rubra*), swamp white oak (*Quercus bicolor*), red maple (*Acer rubrum*), and white pine (*Pinus strobus*). Shrub species commonly observed

within red maple-hardwood swamps in the Project survey area include dogwoods, gray birch and honeysuckle, The herbaceous layer typically includes sensitive fern, cinnamon fern (*Osmundastrum cinnamomeum)* tussock sedge (*Carex stricta*), goldenrods, and reed canary grass. Invasive species observed within red maple-hardwood forests included honeysuckle, buckthorn, and reed canary grass.

Floodplain forests typically occur on mineral soils on low terraces of river floodplains and river deltas (Edinger et al., 2014). Tree species observed within this community type in the Project survey area include green ash, cottonwood (*Populus deltoides*), red maple, American elm, and swamp white oak (*Quercus bicolor*). Shrubs included dogwoods, honeysuckle, and gray birch. Sensitive fern, cinnamon fern, goldenrods, horsetail, and sedges were commonly found in the herbaceous layer. Invasive honeysuckles and buckthorns were also observed in floodplain forests within the Project survey area.

Silver maple-ash swamps occur in poorly drained depressions or along the borders of large lakes and, less frequently, in poorly drained soils along rivers. Ash-elm dominated swamps with little or no silver maple (red maple may be present) are currently included as part of this community type (Edinger et. al., 2002). Tree species observed within this community within the Project survey area include green ash, elms, swamp white oak and cottonwood. Shrub species observed included silky and gray dogwood, as well as willows (*Salix spp.)*. The herbaceous layer typically included tussock sedge, jewelweed (*Impatiens capensis*), cattails, goldenrods, sensitive fern, and rough and field horsetail (*Equisetum hyemale* and *E. arvense*). Invasive species observed within silver maple-ash swamps included honeysuckles and buckthorns.

4.1.4 Open Water

Besides vegetated wetlands, a few scattered small ponds are located along the transmission cable corridor, adjacent to the railroad and highway ROWs as are streams and Lake Champlain. As previously noted, open water communities are identified as palustrine unconsolidated bottom (PUB), lacustrine limnetic unconsolidated bottom (L1UB), and lacustrine littoral aquatic bed (L2AB). These communities are characterized by a vegetation cover of less than 30 percent, although there may often be emergent or shrubby vegetation bordering the open water areas. Characteristic species observed along the edges of these communities were narrow leaf cattail

(*Typha angustifolia*), common duckweed (*Lemna minor*) and a variety of sedge species (*Carex spp.*) Pond substrates may be silt, mud, cobble or sand.

4.2 HYDROLOGY

4.2.1 Streams

Table 4-2 lists the 53 streams (perennial (27), intermittent (26)) identified within the Project Corridor. The overland transmission cable route is located within the Lake Champlain Basin. The Lake Champlain Basin drains the area between the Adirondacks and the Green Mountains in Vermont. Perennial waterbodies within the Project Corridor in this watershed include Pine Lake Brook, South Bay of Lake Champlain, Halfway Creek, abandoned sections of the Champlain Canal, as well as unnamed tributaries connected to these watersheds identified on USGS Topographic Maps and/or identified during the field delineation.

4.2.2 Wetlands

Site hydrology was examined within each wetland and adjacent upland areas. Indicators of wetland hydrology included inundation (A1) or evidence of inundation (A2 & A3) (such as water-stained leaves (B9) or buttressed tree trunks), trees with shallow roots, saturation within the upper portion of the soil (A3) during the growing season, drainage patterns (B10) and drift lines within wetlands, sediment deposition (B2), and oxidized root channels (C3) in the upper 12 inches of soil (Attachment 1). Hydrologic factors contributing to the presence of wetland hydrology within wetlands in the Project Corridor included inundation with river, pond, or stream water, temporarily ponded runoff, and seasonally to permanently shallow groundwater tables.

Hydrology along the Project Corridor has been historically altered by road and railroad drainage ditches. CHA inspected these ditches for the presence or absence of wetland indicators and hydrologic connectivity to wetlands or streams. Ditches that met the three parameters for wetland delineation (i.e., presence of hydrology, hydric soils, and hydrophytic vegetation) were identified as a wetland community.

4.3 SOILS

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil map units for the Project Corriodor provided in Attachment 3. Indicators of hydric soils included muck or evidence of gleied colors such as histic epipedon (A2), black histic (A3), depleted below dark surface (A11), thick dark surface (A12), sandy redox (S5), dark surface (S7), thin dark surface (S9), loamy gleied matrix (F2), depleted matrix (F3) and redox dark surface (F6) (Attachment 1). Within the Project Corridor, a total of 21 different soil types have been mapped by the NRCS. The mapped soil types range from excessively drained to very poorly drained soils. According to the National List of Hydric Soils prepared by the NRCS (2009) (Section 4.4 and Attachment 4, Table 4-3), six (6) of the soils mapped within the Project Corridor are classified as hydric soils (Carlisle muck, Catden muck, Covington silty clay loam, Limerick silt loam, Saco silt loam and Saprists, Aquepts, and Aquents). Hydric soils are defined as soils "that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil" (Federal Register, 1994). Table 4-3 summarizes the soil series in the Project survey area and lists the soils that are classified as hydric (or associated with wetland hydrology) in the Project Corridor.

Many soils within the Project Corridor are formed from glacial parent materials including outwash, dense till, loose till, and glaciomarine deposits. In active floodplains, soils are formed in recent alluvium. Anthropogenically disturbed soils, associated with road and railroad construction and operation, are common within the Project Corridor. The disturbed soils consist of disturbed natural deposits or human transported materials.

4.4 NATURAL RESOURCE CONSERVATION SERVICE SOIL SERIES DESCRIPTIONS

The following are the abbreviated descriptions of each of the relevant soil types taken from the USDA Web Soil Survey (NRCS, USDA 2021). Soils survey mapping and additional information regarding relevant soil characteristics are provided in Attachment 3.

Carlisle Series (Ca)

These deep and very poorly drained organic soils formed in woody fibrous material that accumulated in waterlogged bogs. They are nearly level and are found in depressions within

glaciated uplands, lake plains, and outwash plains. The surface layer is black organic material 10 inches thick. Below this layer is a 15-inch layer of black, massive, well decomposed organic material. The following 49 inches is composed of dark reddish-brown, massive, well-decomposed organic material. From a depth of 74 to 80 inches is very dusky red, massive, neutral, fibrous organic material. Below 80 inches is a 6-inch layer of light-gray, slightly sticky and slightly plastic, calcareous marl and 24 inches of dark-dray, massive, slightly sticky and slightly plastic, calcareous silt.

Catden Series (Ca)

These organic/muck soils are characterized as very deep and very poorly drained. They are formed in highly decomposed woody and herbaceous organic materials in depressions on till plains, lake plains, outwash plains, and flood plains. Saturated hydraulic conductivity is moderately high or high with slopes ranging from 0 to 2 percent. The organic material may extend to a depth of 51 inches or more, and surface tiers are characterized with hues of 5YR to 2.5Y, or neutral, values of 1 to 4 and chromas of 0 to 6. It is dominantly muck (sapric material); however, some pedons have surface layers of peat (fibric material) or mucky peat (hemic material). The structure of the surface tier is weak or medium, coarse to fine granular, platy, subangular blocky, or is massive. Subsurface and bottom tiers have hues, values and chromas are similar to the surface layers.

Charlton Series (CHC & CHE)

These deep, well drained soils formed in glacial till from syenite and granite gneiss. Slopes range from 0 to 50 percent. The A horizon is very dark grayish-brown sandy loam 2 inches thick. It has a weak granular structure. The upper 5 inches of the B horizon is dark-brown sandy loam, and the lower 21 inches is yellowish-brown sandy loam. The B horizon has weak subangular blocky structure. The C horizon is light olive brown sandy loam with pockets of loamy sand. The horizon is massive.

Claverack Series (CIA & CIB)

These very deep, moderately well drained soils formed in sandy deposits that overlie clayey lacustrine sediments. They are nearly level to sloping soils in shallow deltas on lake plains. The sand, which overlies finer textured sediments, is dominated by quartz and has been derived primarily from non-calcareous sandstone or granite. Slope ranges from 0 to 15 percent. Typically,

the A horizon consists of a fine sand and is usually a dark grayish brown color. The B horizon consists of structureless sand. In some places, the lower part of the B horizon has gray or grayish brown redoximorphic features below a depth of 18 inches. The C horizon is a silty clay loam or clay with some sub-horizons of silt or loam, up to 5 inches thick.

Covington Series (Cv)

These very deep and poorly drained soils formed in calcareous clayey glacio-lacustrine or glacio-estuarine deposits on glacial lake plains. These soils are found on broad plains, depressions, and drainageways. Slopes range from 0 to 8 percent. The A horizon consists of very dark brown silty clay or silty clay loam with granular or blocky structure, to a depth of 8 inches. The B horizon is dark gray firm to very firm, sticky or plastic clay with thin sub-horizons of silty clay, extending to a depth of 33 inches. High chroma redoximorphic features are typical of this horizon. The C horizon is typically dark gray firm to very firm, sticky or plastic clay or silty clay, although silt and silt loam varves alternate with clay varves in some pedons. The C horizon may extend to a depth of 65 inches and has redoximorphic features similar to that of the B horizon.

Farmington Series (FCC)

These shallow, well drained and somewhat excessively drained soils formed in till. Slopes range from 0 to 70 percent. The A horizon is dark grayish brown silt loam with granular structure. The B horizon is composed of a yellowish-brown silt loam 6-inches thick, followed by 4-inches of brown loam with redoximorphic features. The texture is very fine sandy loam to silt loam, and the structure is granular to subangular blocky. The R horizon is limestone, dolomite, or dolomitic limestone bedrock.

Hartland Series (HcB &HcC)

These deep, well-drained medium textures soils formed in water-sorted silt and very fine sand, and occur typically in cultivated areas. Slopes range from 0 to 20 percent. The A horizon is up to 10 inches deep and consists of a dark brown very fine sandy loam with a very weak, fine granular structure. The B horizon is up to 5 inches deep with a yellowish-brown color with a weak, medium, subangular, blocky structure. Depth to bedrock is more than 6 feet.

Hollis Series (HLE & HNC)

These shallow, somewhat excessively drained soils formed in glacial till. Slopes range from 0 to 60 percent. The A horizon is dark brown loam 4 inches thick with weak granular structure. The upper 4 inches of the B horizon is strong-brown sandy loam and the lower 11 inches is yellowish-brown fine sandy loam. The B horizon has weak granular or weak blocky structure. Bedrock is at a depth of 19 inches.

Hoosic Series (HSDK)

These very deep, somewhat excessively drained soils formed in glacial outwash plains, valley trains, and related terraces, kames, eskers, and water sorted parts of moraines. Slopes range from 0 to 60 percent. The A horizon is dark grayish brown gravelly sandy loam with granular to subangular blocky structure. The B horizon is yellowish brown gravelly sandy loam. The structure is granular or subangular blocky, and some sub horizons have single grain and loose structure. The BC horizon is yellowish brown very gravelly loamy sand with granular structure. The C horizon is light olive brown and dark grayish brown. The texture is loamy sand to coarse sand, and the horizon has a single grain and loose structure.

Hudson Series (HWE)

These very deep, moderately well drained soils formed in clayey and silty lacustrine sediments. These soils are in convex lake plains, lacustrine capped uplands, and on lower valley side-slopes. Slopes can range from 0 to 60 percent. The A horizon is typically brown silt loam and silty clay loam, with granular structure, extending 5 to 12 inches deep. The E horizon, when present, consists of faintly mottled brown, very fine sandy loam or silt loam with blocky or platy structure. The B horizon generally is firm yellowish brown to brown silty clay with moderate or strong blocky structure and may have medium to very coarse prisms. Low- and high-chroma redoximorphic features are present, but may be faint or absent in the shallower portions. The C horizon is mixed grayish brown and light olive brown silty clay, with massive structure, or plate-like divisions.

Kingsbury Series (KbA & KbB)

These very deep, somewhat poorly drained soils formed in clayey glacio-marine or glacio-lacustrine sediments. They are nearly level or gently sloping, ranging from 0 to 8 percent slope.

The A horizon is typically very dark grayish brown silt loam, and texture can range from very fine sandy loam to clay. This horizon has granular or blocky structure. The E horizon generally is mixed brown and yellowish brown silty clay, but can be silt loam or very fine sandy loam, with blocky to platy structure. Redoximorphic features occur throughout. The B horizon typically consists of dark grayish brown clay, mixed with yellowish brown clay in the shallower portions. Typically, it has greater than 50 percent redoximorphic depletions on ped faces with concentrations in ped interiors. This horizon generally has blocky structure, within coarse or very coarse prisms. The C horizon generally has similar color to the deeper portions of the B horizon, although redoximorphic features generally have lower contrast. This horizon ranges from silty clay loam to clay in texture, and has massive structure, which, when disturbed, can part into aggregates resembling very fine blocky structure.

Limerick Series (Lm)

These deep, poorly drained soils formed in alluvial deposits of silt and very fine sand. They are nearly level and are found in low areas on flood plains. The A horizon is very dark grayish brown about 3 inches thick. The structure of the A horizon is granular. The C horizon is typically a silt loam or very fine sandy loam that extends to a depth of 50 inches or more. The C horizon has grayish brown redoximorphic features to a depth of 14 inches, olive gray redoximorphic features between depths of 14 and 26 inches, and gray redoximorphic features below 26 inches. The C horizon is massive or has a subangular blocky or granular structure.

Oakville Series (OaB)

These very deep and well drained or moderately well drained soils were formed in water-sorted sand on glacial outwash plains, lake plains, and beach ridges. Slopes range from 0 to 35 percent. The A horizon is dark yellowish brown with a loamy fine sand texture and granular structure. The B horizon is yellowish brown loamy fine sand with subangular blocky structure. The C horizon is typically yellowish brown with a sand or loamy fine sand texture.

Orthents and Psamments (OP)

This map unit consists of material dredge and pumped from the Hudson River and Champlain Barge Canal. The material is composed of a variable mixture of dominantly fine gravel and sand and some silt and clay.

Pits, gravel and Sand (Pr)

This soil consists of areas that have been excavated for sand or gravel. The areas are mostly on broad outwash plains and terraces of stream valleys. These soils are somewhat excessively drained. These areas have sparse vegetation consisting of Xerophytic plants. Slopes range mostly from 0 to 25 percent and steep escarpments are along the edges of the pits. A few areas have bedrock outcrops and small bodies of water, and a few are used for parking lots and buildings. This unit consists mostly of sand or sand and gravel. In places, the water table is at or near the surface most of the year. A few areas are adjacent to streams and are subject to flooding. Areas of this unit require onsite investigation and evaluation for most uses.

Rock outcrop (ROF & RPC)

Areas mapped as rock outcrop consist of bare bedrock covering 90 percent of the surface. Where mapped with Hollis soils, it typically consists of exposures of syenite or granite gneiss, and in places, quartzite.

Saco Series (Sa)

These very deep, very poorly drained soils formed in recent alluvium on floodplains. Slopes range from 0 to 2 percent. The A horizon is very dark grayish brown silt loam or very fine sandy loam, or their mucky analogs. It is massive or has weak granular structure. Strong brown and grayish brown redoximorphic features are present beginning at a depth of 10 inches. The C horizon is grayish brown or olive gray with a silt loam or very fine sandy loam texture above a depth of 40 inches and loamy fine sand to very gravelly coarse sand texture below 40 inches. The C horizon is massive or has weak structure.

Saprists, Aquepts, and Aquents (SB)

These soils consist of low-lying, level deposits of organic and mineral soil material that is ponded with shallow water most of the year. They are mainly found around the edges of lakes and ponds.

Vergennes Series (VeB, VeC & VeD)

These very deep, moderately well drained soils formed in calcareous estuarine and glacio-lacustrine clays. They are on broad plains and on the tops and side-slopes of hills and ridges, with

slopes ranging from 0 to 50 percent. The A horizon is generally dark grayish brown clay that has blocky structure. Occasionally, a clay, silty clay, silty clay loam, or silt loam E horizon is present. The B horizon is typically brown clay, with more dark grayish brown color with depth. The C horizon is generally clay with silt and silty clay varves.

Wallington Series (Wa)

These very deep, somewhat poorly drained soils formed in silty lacustrine deposits. Typically occurring on lake plains and silt-covered uplands. They are on lacustrine plains or basins that are nearly level or gently sloping soils that range from 0 to 8 percent slope. The A horizon is generally very dark grayish brown silt loam that has fine and medium granular structure. A pinkish gray silt loam is present in the E horizon. The B horizon is typically brown silt loam, with more dark brown grayish color with depth. The C horizon is generally very fine sandy loam.

5.0 SUMMARY

Wetlands identified along the Project Corridor include shallow emergent marshes, deep emergent marshes, common reed/purple loosestrife marshes, scrub-shrub wetlands, and forested wetlands such as red maple-hardwood swamps, floodplain forests and silver maple-ash swamps. Small ponds, artificial ditches, and watercourses, including small intermittent streams to the South Bay of Lake Champlain, occur within the Project Corridor of the Project.

Land use in the Project Corridor is diverse, ranging from rural, agricultural, and forested areas to more developed areas such as the Village of Whitehall. In general, because a portion of the Project is routed along existing railroad corridors and state highways, many wetlands within the Project Corridor are characterized by previous anthropogenic disturbance and/or the presence of invasive plant species. The Project Corridor frequently is located along the edge between the disturbed railroad or highway corridor and more natural vegetated wetland communities that are present adjacent to the railroad and highway rights-of-way. The wetland boundaries in the Project Corridor are most often defined by the edge of the soil fill for the railroad and highway embankments.

Confirmation of the wetland boundaries are the responsibility of the involved regulatory agencies with jurisdiction over wetlands and waterbodies within this Phase of the overall project. As

previously noted, wetlands within Phase 1 are regulated by USACE (Section 10/404), NYSDEC (Article 24), and the APA (Article 24). Streams and other waterbodies are regulated by USACE (Section 10/404) and NYSDEC (Article 15). Based on review of the NYSDEC and APA wetland mapping, 7 delineated wetlands areas are identified as regulated under Article 24. These wetlands correspond to 2 mapped wetlands regulated by NYSDEC. No mapped APA wetlands were identified within the Project Corridor. It is anticipated that USACE will take jurisdiction over all the mapped wetlands within the Project Corridor. Final jurisdictional determinations will be made by the respective agencies.

6.0 REFERENCES

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ATTACHMENT 1
WETLAND DETERMINATION DATA SHEETS AND WETLAND PHOTOGRAPHS

(Putnam Station Transitional HDD Project Area Data Only)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CHPE City/County: Putnam / Washington Sampling Date: 10/11/21

Applicant/Owner: TDI State: NY Sampling Point: WET CA-5

Investigator(s): C. Scrivner, J. Greaves Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: 43-44-5.27N Long: 73-22-29.43W Datum: WGS 84

Soil Map Unit Name: Sa - Saco silt loam NWI classification: PFO1

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Near flag CA-5

Remarks: (Explain alternative procedures here or in a separate report.)
Palustrine forested wetland dominated by eastern cottonwood. Edinger classification: Red maple-hardwood swamp.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WET CA-5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Populus deltoides*	30	Yes	FAC
3. *Ulmus americana*	10	No	FACW
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	35	Yes	FAC
2. *Cornus amomum*	10	No	FACW
3. *Ulmus americana*	8	No	FACW
4. *Lonicera morrowii*	5	No	FACU
5. *Quercus bicolor*	2	No	FACW
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Rhamnus cathartica*	8	Yes	FAC
2. *Cornus racemosa*	5	Yes	FAC
3. *Lysimachia nummularia*	5	Yes	FACW
4. *Ulmus americana*	3	No	FACW
5. *Quercus bicolor*	1	No	FACW
6. *Equisetum hyemale*	1	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	23	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis aestivalis*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	39	x 2 =	78
FAC species	109	x 3 =	327
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	163 (A)		465 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: WET CA-5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 3/2	98	2.5Y 5/4	2	C	M	Loamy/Clayey	Distinct redox concentrations
5-10	2.5Y 4/2	75	2.5Y 5/3	8	D	M	Loamy/Clayey	
			2.5Y 5/6	15	C	M		Prominent redox concentrations
			10YR 2/2	2	C	PL		Distinct redox concentrations
10-17	2.5Y 5/2	80	10YR 2/1	5	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 4/6	15	C	M		Prominent redox concentrations

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

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

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

Remarks:

Wetland CA-5 View facing north

Wetland CA-5 Soils

Phase 1

SITE PHOTOGRAPHS

Champlain Hudson Power Express

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CHPE City/County: Putnam / Washington Sampling Date: 10/11/21

Applicant/Owner: TDI State: NY Sampling Point: WET CA-6

Investigator(s): C. Scrivner, J. Greaves Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0

Subregion (LRR or MLRA): LRR R Lat: 43-44-4.72N Long: 73-22-30.07W Datum: WGS 84

Soil Map Unit Name: Sa - Saco silt loam NWI classification: PEM1

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Near flag CA-6

Remarks: (Explain alternative procedures here or in a separate report.)
Palustrine Emergent Marsh dominated by common duckweed and American burreed. Edinger classification: Shallow Emergent Marsh.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
A culvert connects wetland CA to wetland CB.

VEGETATION – Use scientific names of plants.

Sampling Point: WET CA-6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	5	Yes	OBL
2. *Rhamnus cathartica*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Cornus sericea*	5	Yes	FACW
2. *Rhamnus cathartica*	3	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	8	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lemna minor*	70	Yes	OBL
2. *Sparganium americanum*	20	No	OBL
3. *Lysimachia nummularia*	10	No	FACW
4. *Zizania aquatica*	10	No	OBL
5. *Persicaria amphibia*	5	No	OBL
6. *Onoclea sensibilis*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	120	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Parthenocissus quinquefolia*	3	Yes	FACU
2. *Vitis aestivalis*	3	Yes	FACU
3.			
4.			
	6	=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	x 1 =	110
FACW species	20	x 2 =	40
FAC species	8	x 3 =	24
FACU species	6	x 4 =	24
UPL species	0	x 5 =	0
Column Totals:	144 (A)		198 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Trees and shrubs were growing along the outer edges of the open water marsh community.

SOIL

Sampling Point: WET CA-6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

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

Remarks:

No soils were taken. Open water marsh dominated by OBL and FACW species.

Wetland CA-6 View facing west

Wetland CA-6 No Soils collected due to open water dominated by OBL and FACW species.

Phase 1	**SITE PHOTOGRAPHS**
	Champlain Hudson Power Express

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CHPE City/County: Putnam / Washington Sampling Date: 10/11/21

Applicant/Owner: TDI State: NY Sampling Point: WET CB-4

Investigator(s): C. Scrivner, J. Greaves Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 43-44-4.78N Long: 73-22-28.49W Datum: WGS 84

Soil Map Unit Name: Sa - Saco silt loam NWI classification: PEM1

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Near flag CB-4

Remarks: (Explain alternative procedures here or in a separate report.)
Palustrine Emergent Marsh dominate by common duckweed. Edinger classification: Shallow Emergent Marsh.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
Culvert under the road (Route 3) leads to Lake Champlain.

VEGETATION – Use scientific names of plants.

Sampling Point: WET CB-4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Ulmus americana*	3	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	13	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Cornus sericea*	10	Yes	FACW
2. *Rhamnus cathartica*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
	12	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lemna minor*	65	Yes	OBL
2. *Leersia oryzoides*	15	Yes	OBL
3. *Lysimachia nummularia*	10	No	FACW
4. *Bidens frondosa*	8	No	FACW
5. *Typha latifolia*	8	No	OBL
6. *Persicaria amphibia*	5	No	OBL
7. *Sparganium americanum*	5	No	OBL
8. *Equisetum arvense*	5	No	FAC
9. *Lysimachia ciliata*	5	No	FACW
10. *Zizania aquatica*	5	No	OBL
11. *Lythrum salicaria*	3	No	OBL
12.			
	134	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis aestivalis*	5	Yes	FACU
2.			
3.			
4.			
	5	=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	106	x 1 =	106
FACW species	46	x 2 =	92
FAC species	7	x 3 =	21
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	164 (A)		239 (B)

Prevalence Index = B/A = 1.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
The trees and shrus were observed growing on the banks surrounding the marsh.

SOIL

Sampling Point: WET CB-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

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

Remarks:

No soils taken. Open water marsh community consisting of dominant vegetation that was OBL and FACW species.

Wetland CB-4 View facing south

Wetland CB-4 No Soils collected due to open water dominated by OBL and FACW species.

Phase 1	**SITE PHOTOGRAPHS**
	Champlain Hudson Power Express

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CHPE City/County: Putmam / Washington Sampling Date: 10/11/21

Applicant/Owner: TDI State: NY Sampling Point: UPL

Investigator(s): C. Scrivner, J. Greaves Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 43-44-5.08N Long: 73-22-28.24W Datum: WGS 84

Soil Map Unit Name: Sa - Saco silt loam NWI classification: NA

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
Successional Northern Hardwoods. This upland point is for wetlands CA-5, CA-6 and CB-4.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Juniperus virginiana*	8	Yes	FACU
3. *Carya ovata*	8	Yes	FACU
4. *Rhus typhina*	5	No	UPL
5.			
6.			
7.			
	41	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Lonicera morrowii*	15	Yes	FACU
2. *Rhus typhina*	5	No	UPL
3. *Rhamnus cathartica*	5	No	FAC
4. *Syringa vulgaris*	3	No	UPL
5.			
6.			
7.			
	28	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Plantago lanceolata*	10	Yes	FACU
2. *Artemisia vulgaris*	10	Yes	UPL
3. *Symphyotrichum lowrieanum*	8	Yes	UPL
4. *Pinus strobus*	5	Yes	FACU
5. *Equisetum arvense*	5	Yes	FAC
6. *Solidago rugosa*	5	Yes	FAC
7. *Lysimachia nummularia*	5	Yes	FACW
8. *Achillea millefolium*	5	Yes	FACU
9. *Betula alleghaniensis*	3	No	FAC
10. *Acer saccharum*	3	No	FACU
11. *Parthenocissus quinquefolia*	3	No	FACU
12. *Setaria pumila*	2	No	FAC
	64	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis aestivalis*	5	Yes	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 13 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 30.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	40	x 3 =	120
FACU species	62	x 4 =	248
UPL species	31	x 5 =	155
Column Totals:	138 (A)		533 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loamy/Clayey	

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

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

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

Remarks:

Hit rock at 8 inches. Consisted of old fill material.

Upland CA-5, CA-6 and CB-4 View facing west

Upland CA-5, CA-6 and CB-4 Soils

Phase 1	**SITE PHOTOGRAPHS**
	Champlain Hudson Power Express

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CHPE City/County: Putnam/ Washington Sampling Date: 8/9/22

Applicant/Owner: TDI State: NY Sampling Point: 1A-A-4 wet

Investigator(s): N. Frazer & C. Scrivner Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: 43-44-04.28N Long: 73-22-27.57W Datum: WGS84

Soil Map Unit Name: Hudson and Vergennes soils (HWE) NWI classification: PSS

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

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

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

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

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

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes x	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

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

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

Remarks:
Culvert present. Wetland connected to Wetland CB on the other side of the road. Inundated, not soils data collected, therefore, water table and saturation data was not collected.

VEGETATION – Use scientific names of plants.

Sampling Point: 1A-A-4 wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Cornus amomum*	50	Yes	FACW
2. *Salix alba*	40	Yes	FACW
3. *Ulmus americana*	5	No	FACW
4. *Fraxinus pennsylvanica*	2	No	FACW
5.			
6.			
7.			
	97 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lythrum salicaria*	5	Yes	OBL
2. *Cornus amomum*	5	Yes	FACW
3. *Persicaria pensylvanica*	5	Yes	FACW
4. *Impatiens capensis*	10	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Vitis riparia*	5	Yes	FAC
2.			
3.			
4.			
	5 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	117	x 2 =	234
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	127 (A)		254 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: 1A-A-4 wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

The area was inundated. Soils data was not collected. The data point contains 2 or more communities dominated by OBL and/or FACW species and the wetland-non wetland boundary is abrupt. Therefore, soils data is not required.

Wetland 1A-A-4- View facing south

Phase 1	**SITE PHOTOGRAPHS**
	Champlain Hudson Power Express

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CHPE City/County: Putnam/ Washington Sampling Date: 8/9/22

Applicant/Owner: TDI State: NY Sampling Point: 1A-A-4 upl

Investigator(s): N. Frazer & C. Scrivner Section, Township, Range:

Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope %: 0

Subregion (LRR or MLRA): LRR R Lat: 43-44-04.42N Long: 73-22-27.66W Datum: WGS84

Soil Map Unit Name: Hudson and Vergennes soils (HWE) NWI classification: n/a

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

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

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

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

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

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 1A-A-4 upl

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer negundo*	10	Yes	FAC
2. *Rhamnus cathartica*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Daucus carota*	20	Yes	UPL
2. *Cichorium intybus*	15	Yes	FACU
3. *Plantago lanceolata*	10	No	FACU
4. *Lotus corniculatus*	35	Yes	FACU
5. *Artemisia vulgaris*	5	No	UPL
6. *Taraxacum officinale*	5	No	FACU
7. *Plantago major*	10	No	FACU
8. *Ambrosia artemisiifolia*	5	No	FACU
9. *Trifolium aureum*	2	No	UPL
10. *Poa pratensis*	15	Yes	FACU
11.			
12.			
	122 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2. *Vitis riparia*	5	Yes	FAC
3.			
4.			
	10 =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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	100	x 4 =	400
UPL species	27	x 5 =	135
Column Totals:	147 (A)		595 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: 1A-A-4 upl

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	95	10YR 4/3	5	C	M	Loamy/Clayey	Distinct redox concentrations
								gravelly fill

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 10

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

Remarks:

Upland 1A-A-4- View facing east

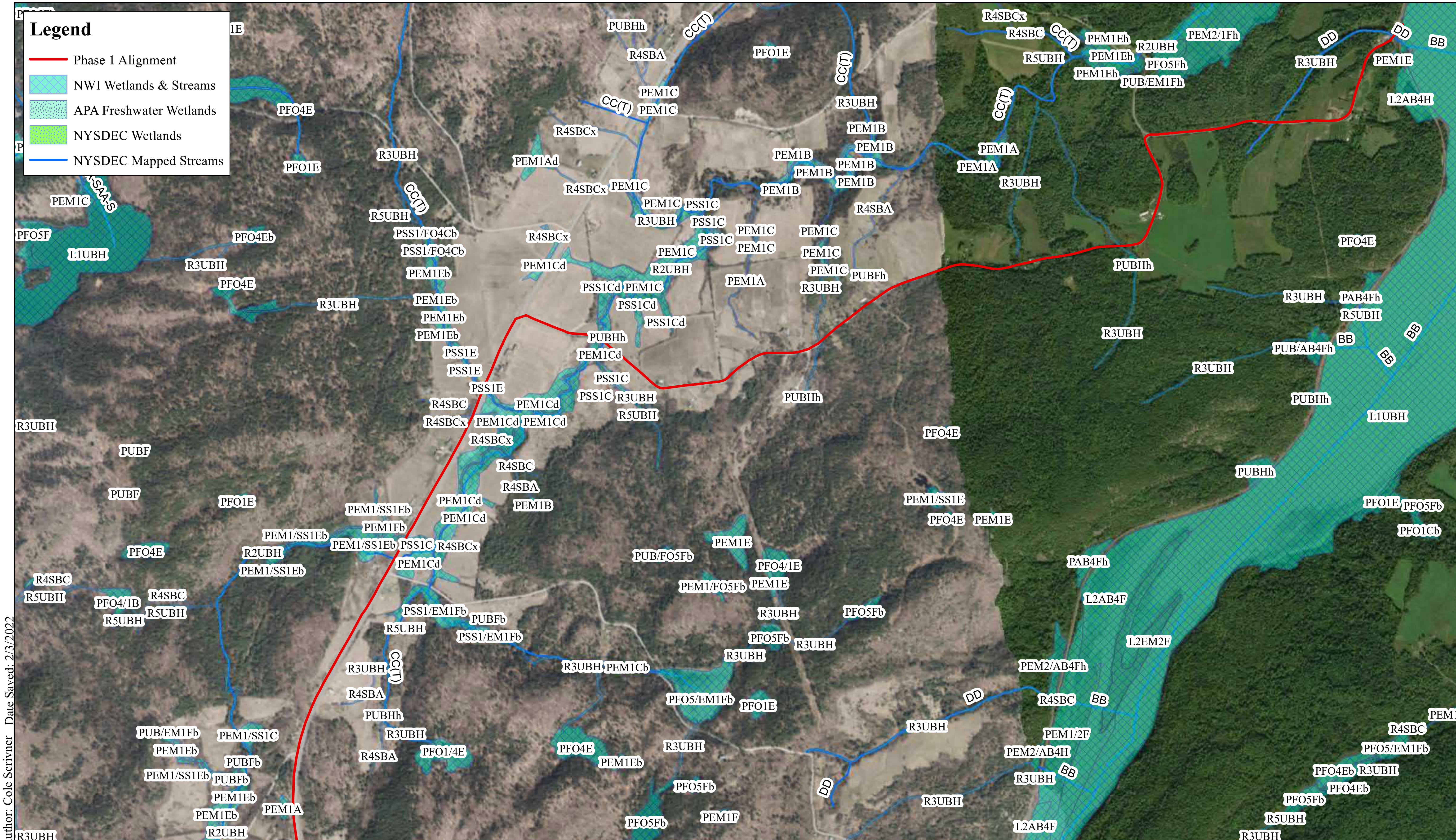
Upland 1A-A-4- Soils

Phase 1

SITE PHOTOGRAPHS

Champlain Hudson Power Express

ATTACHMENT 2
NWI, NYSDEC AND APA WETLAND & STREAM MAPS



Author: Cole Scrivner   Date Saved: 2/3/2022

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Page 1 of 8

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Phase 1 Wetland & Stream Map
(NWI, NYSDEC and APA)

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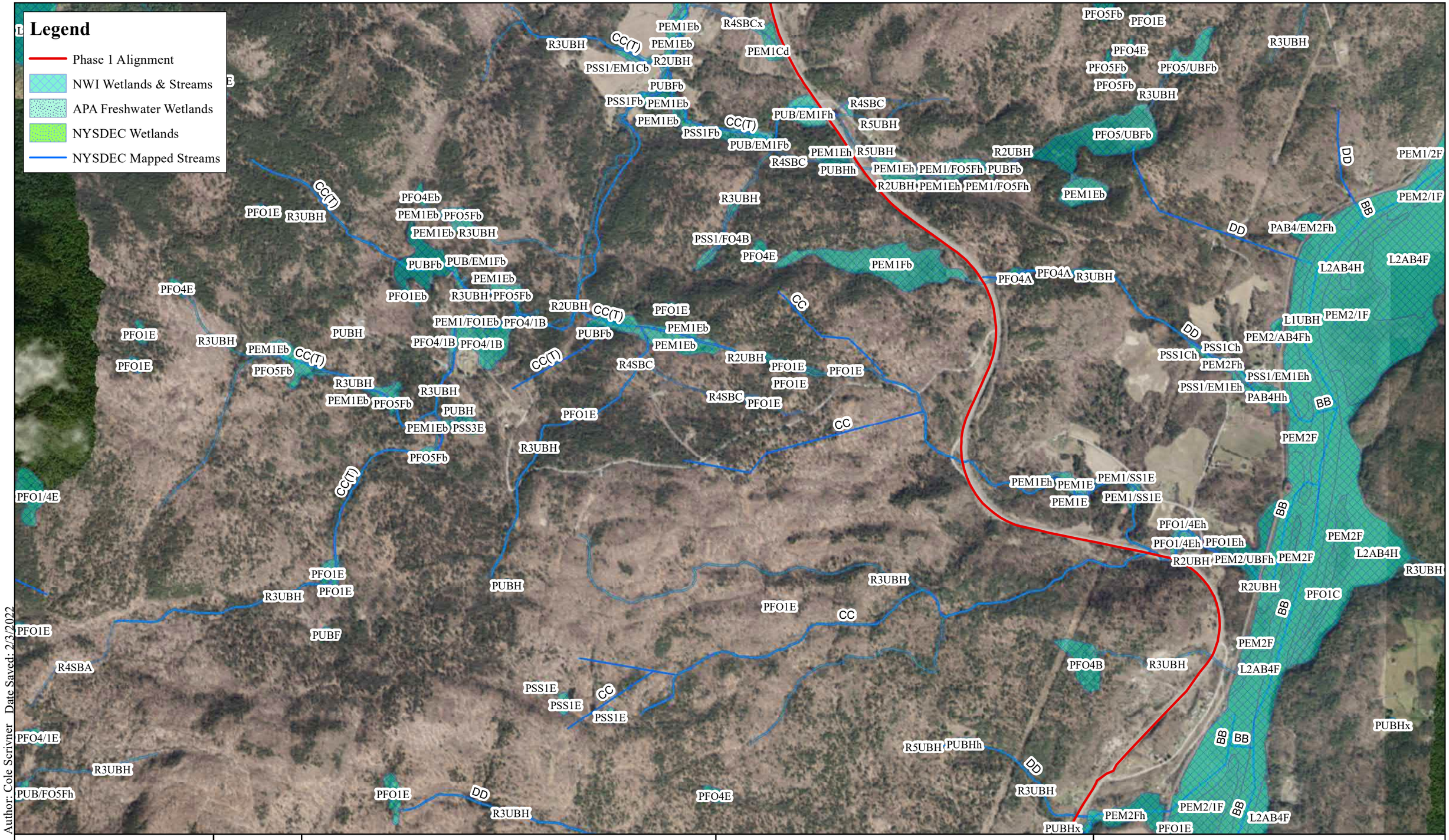

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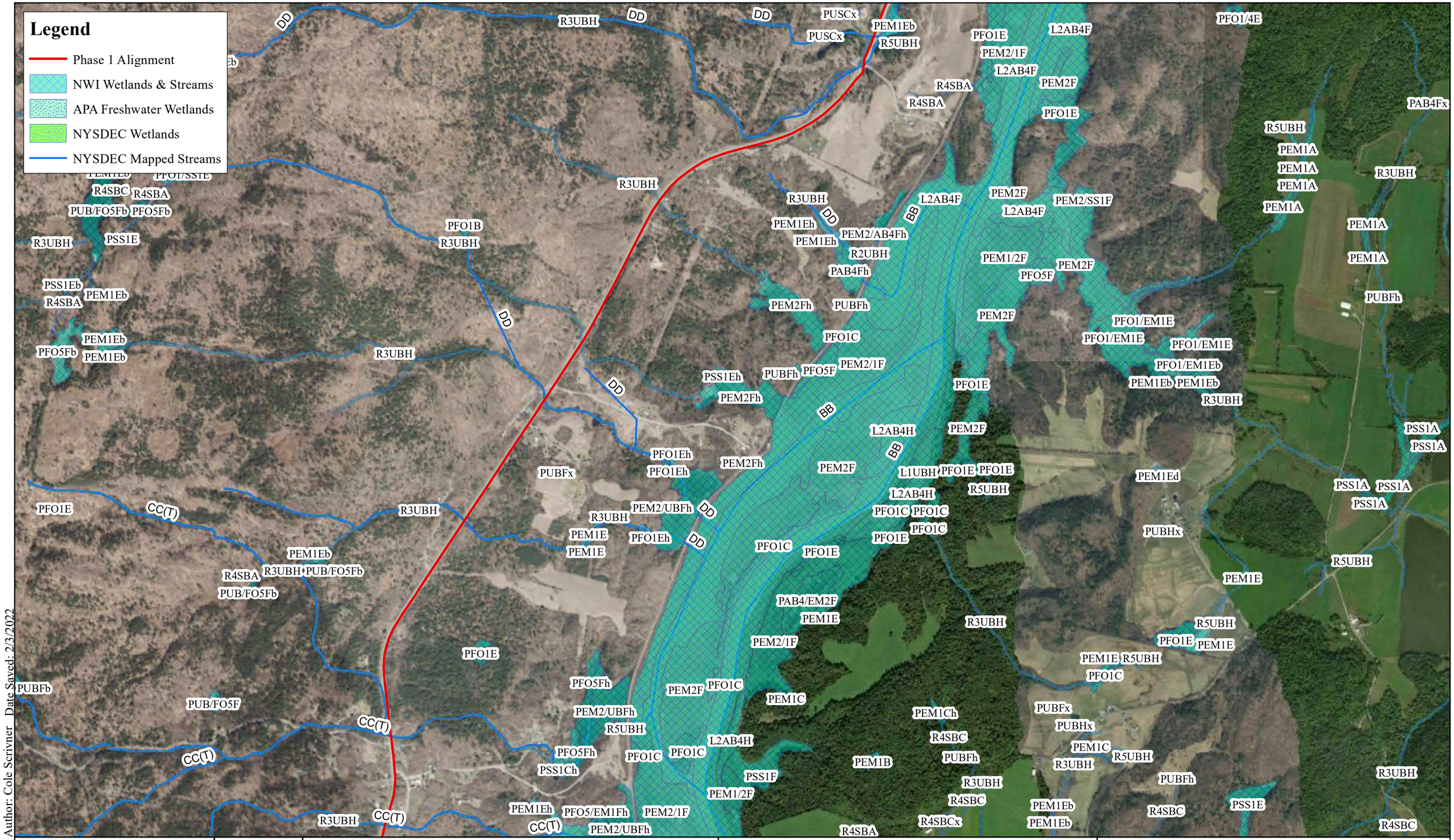

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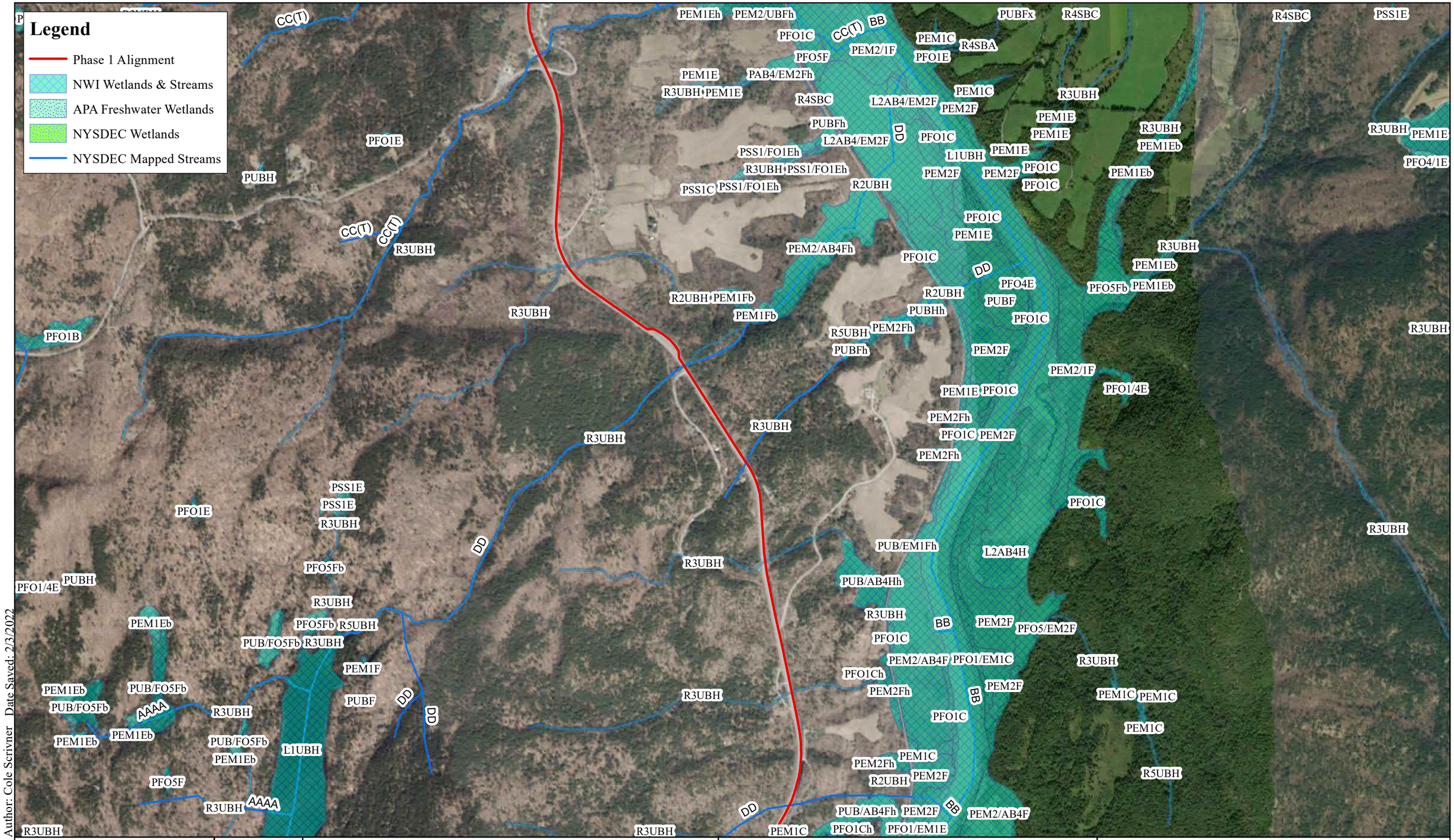

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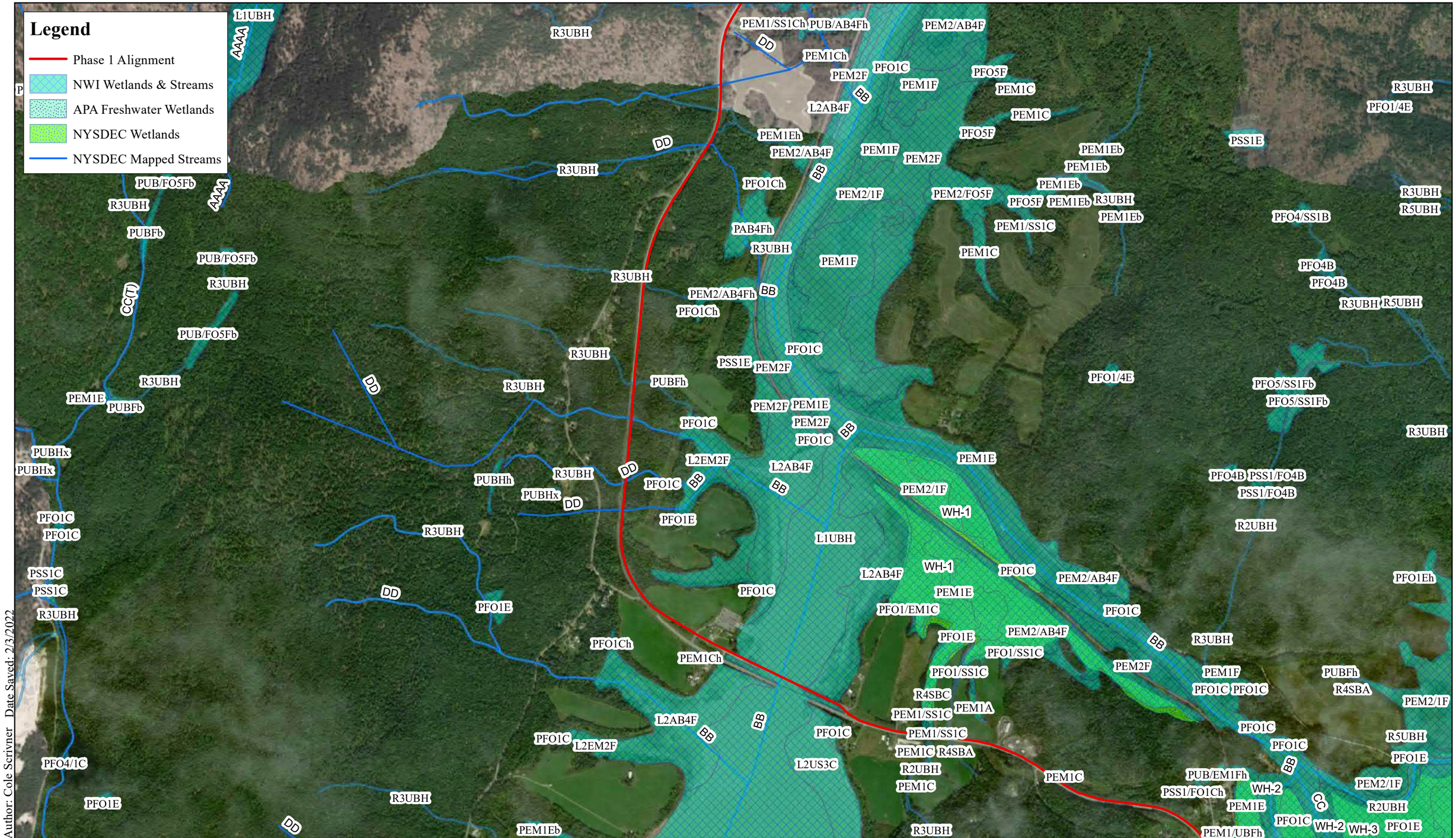

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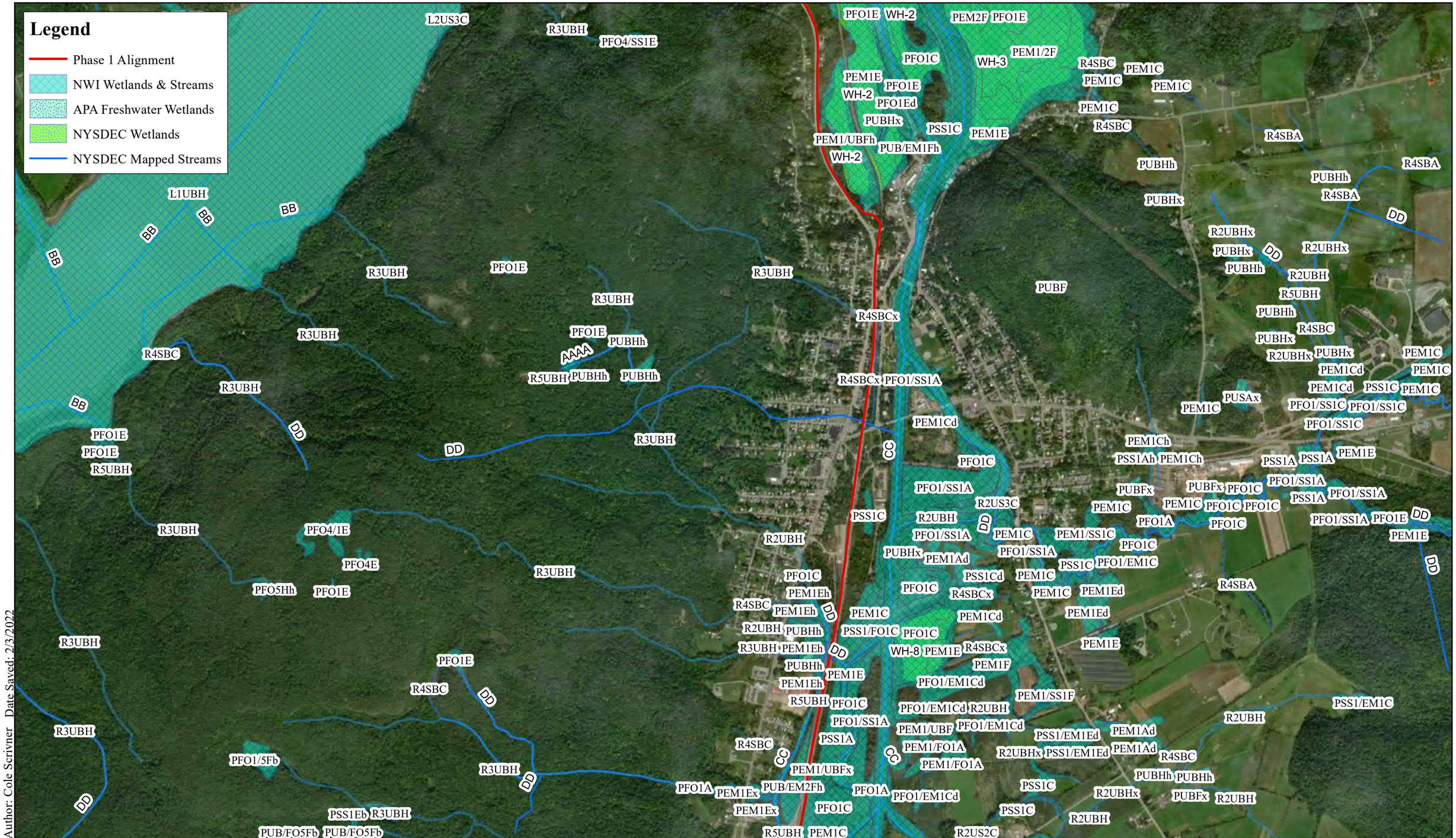

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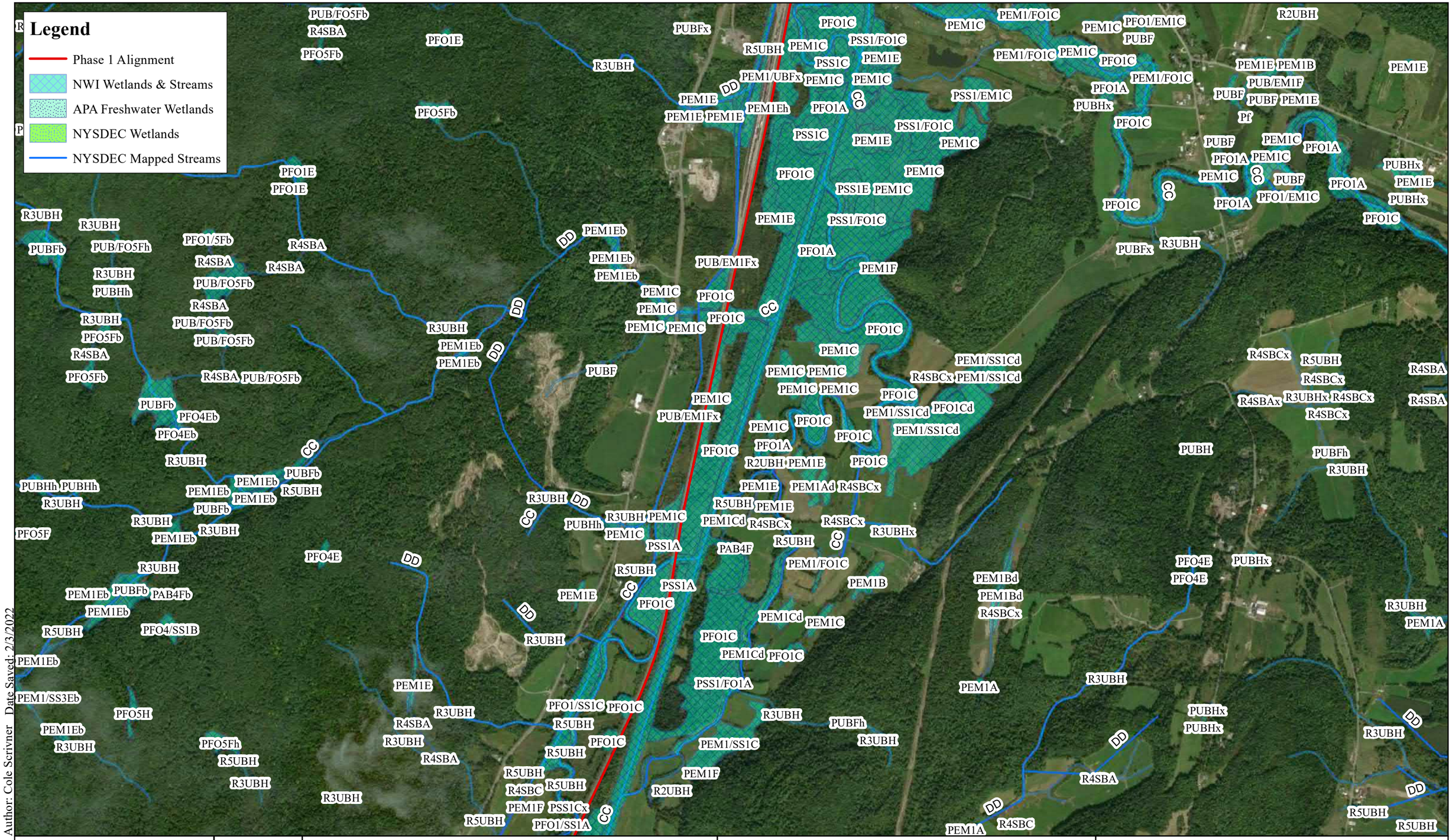

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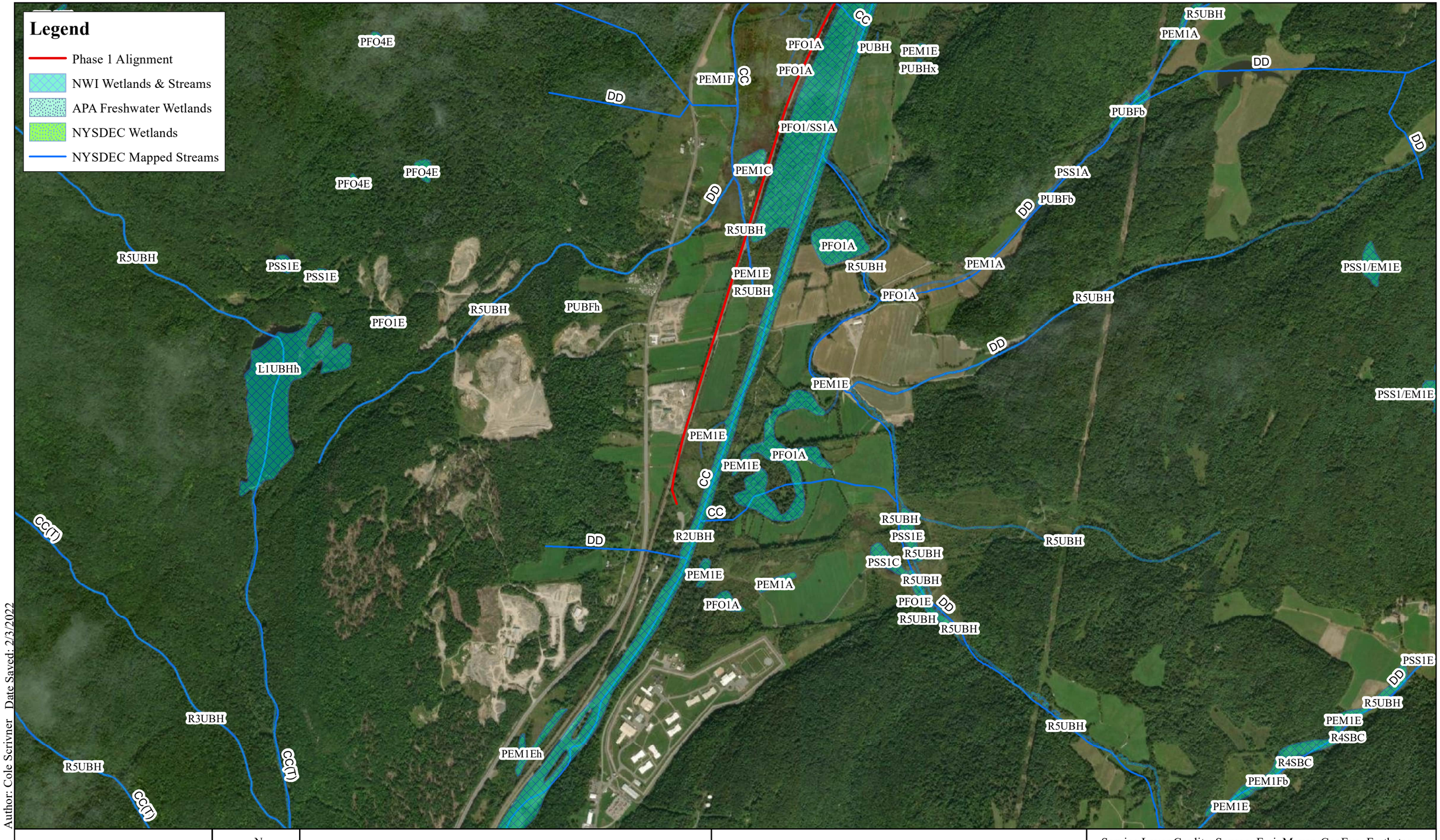

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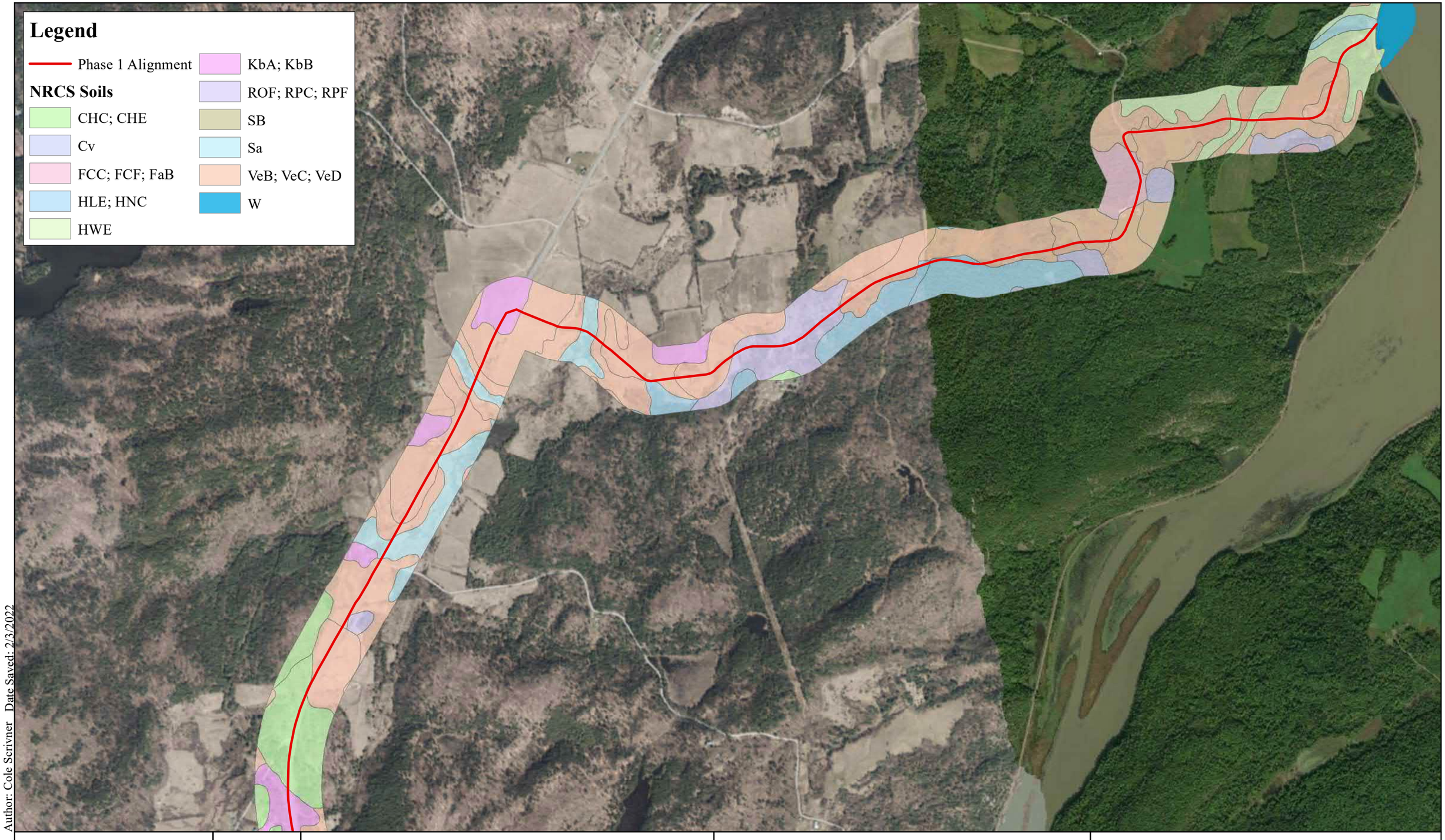
ATTACHMENT 3
NRCS SOIL MAPS



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Phase 1 NRCS Soil Map

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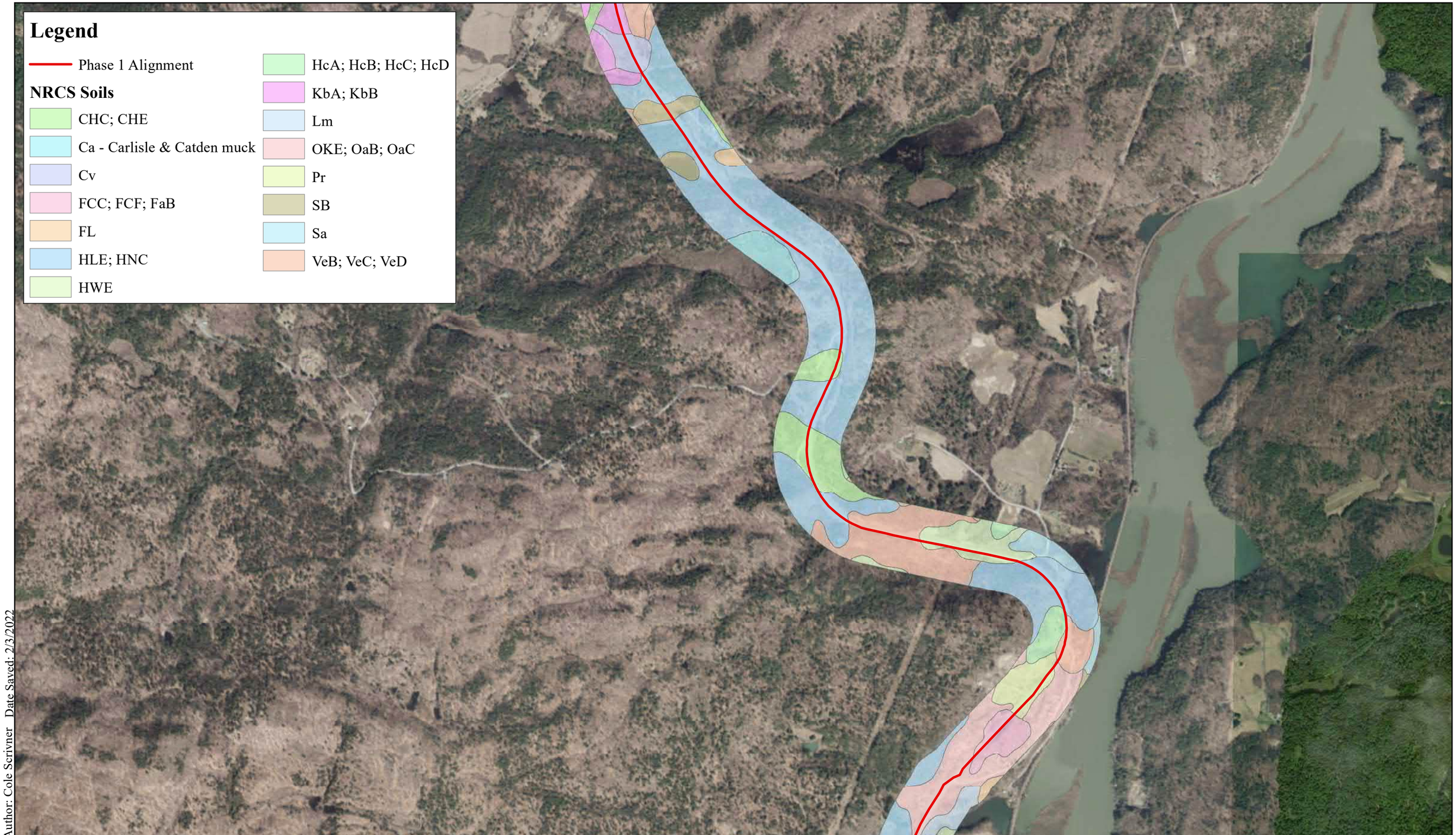

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Phase 1 NRCS Soil Map

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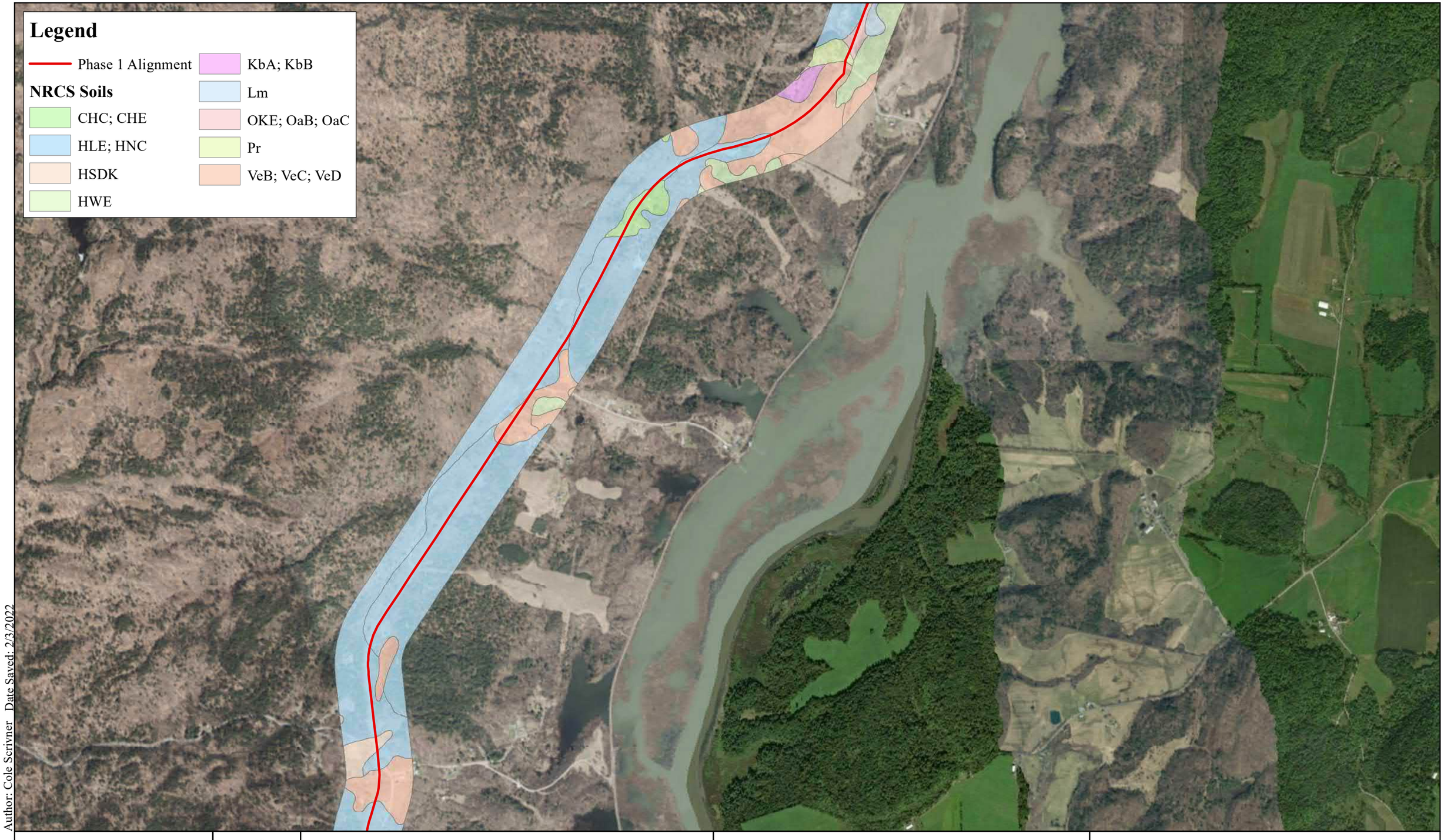

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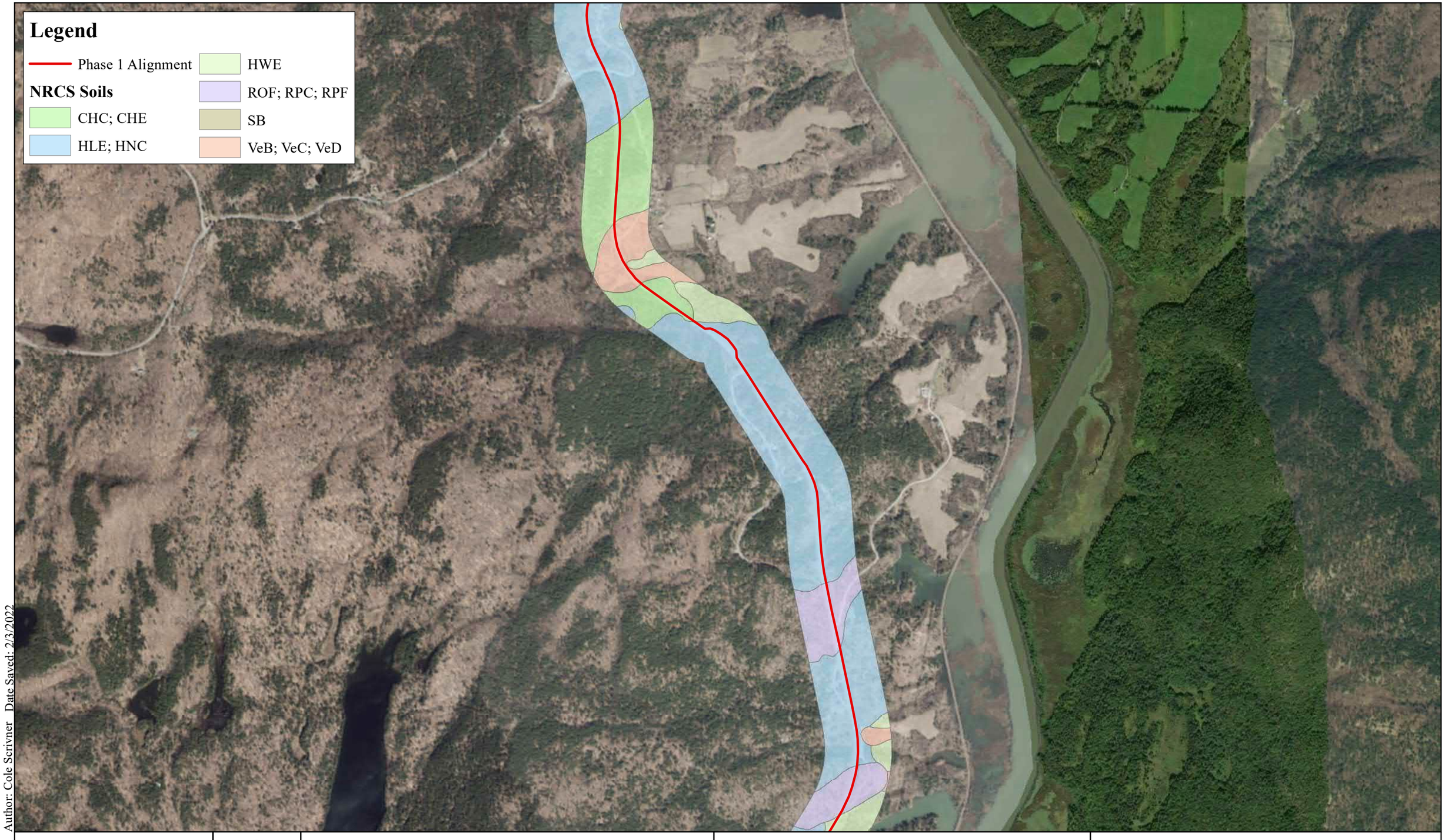

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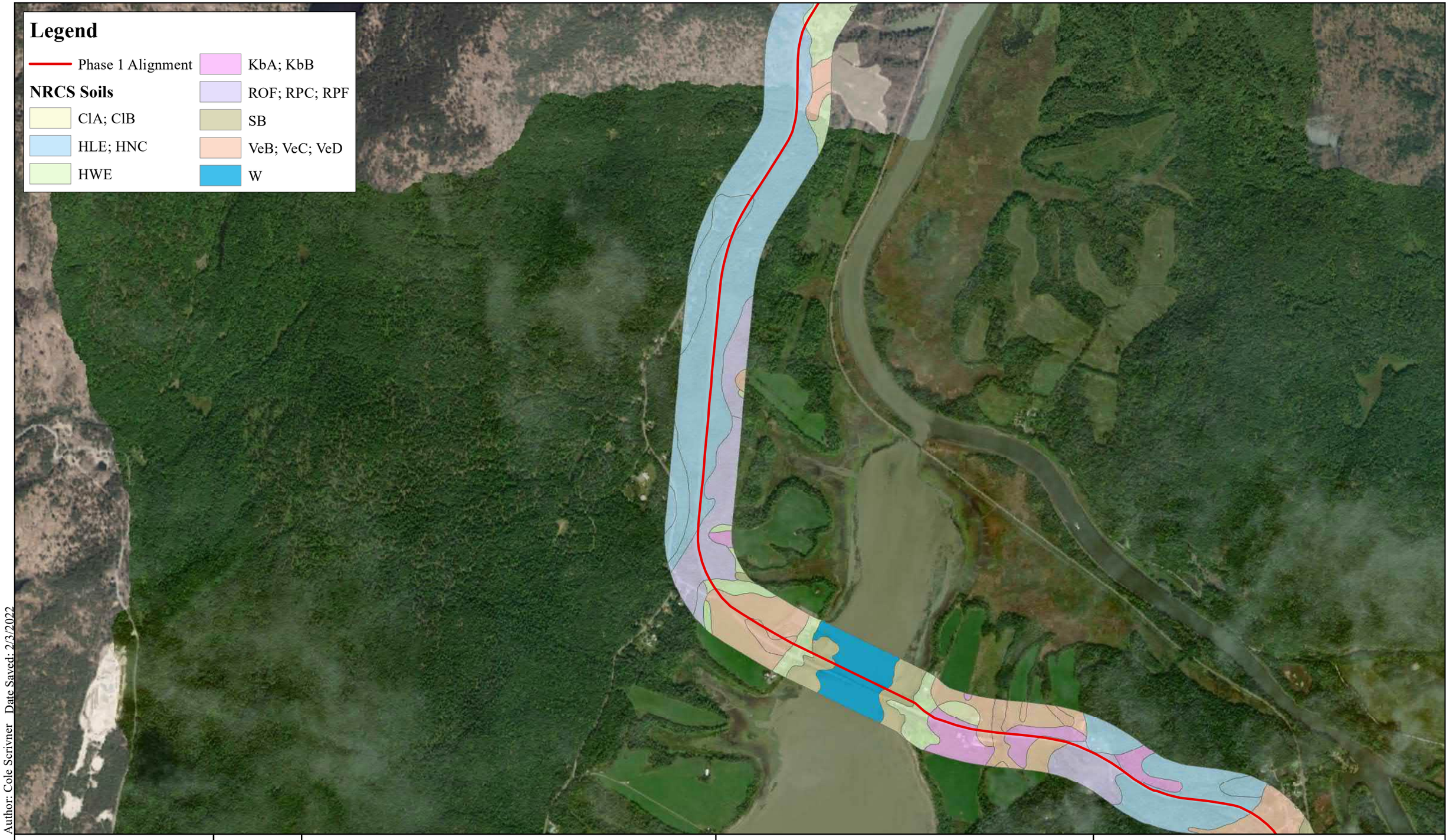

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Phase 1 NRCS Soil Map

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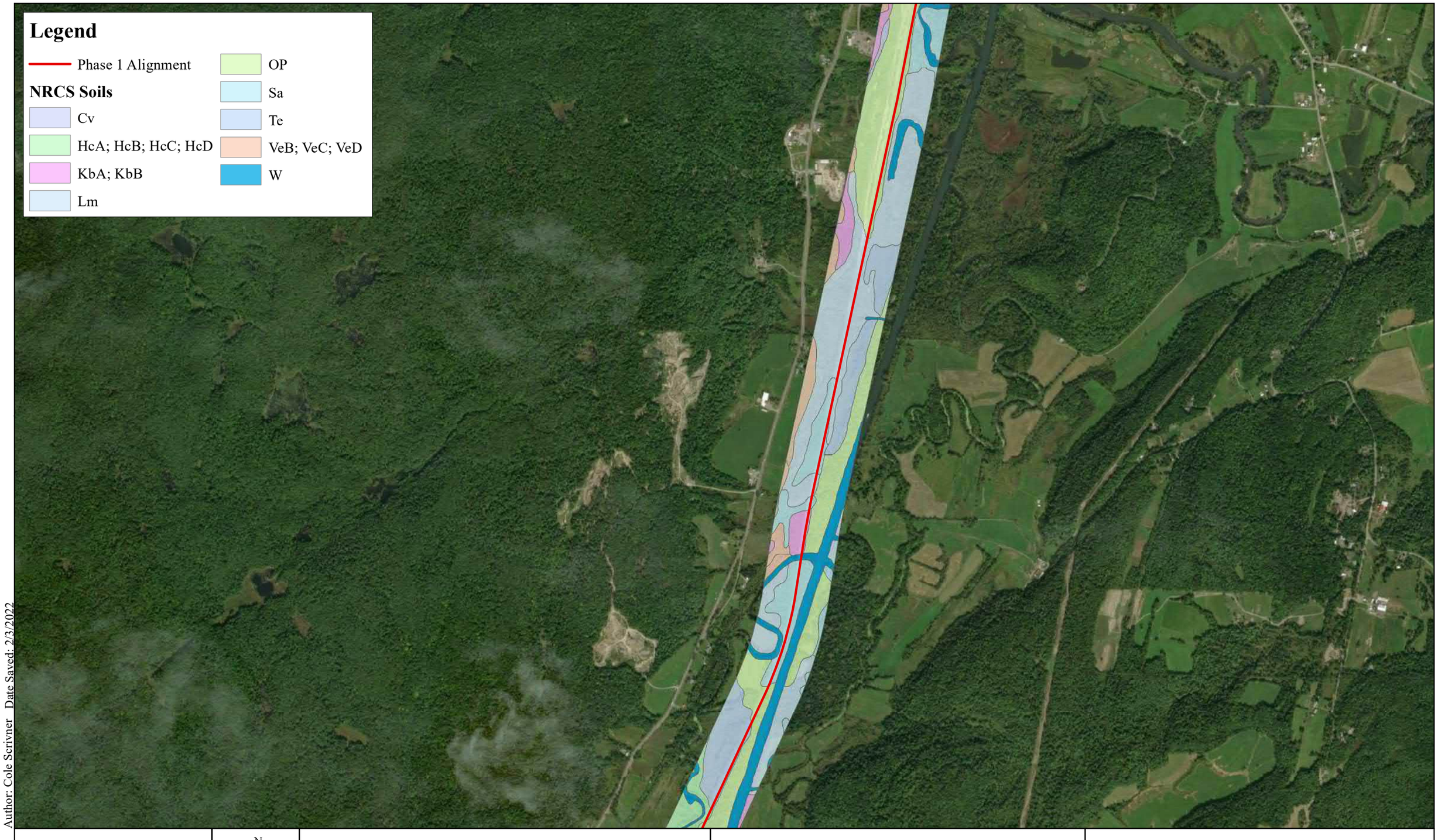

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Phase 1 NRCS Soil Map

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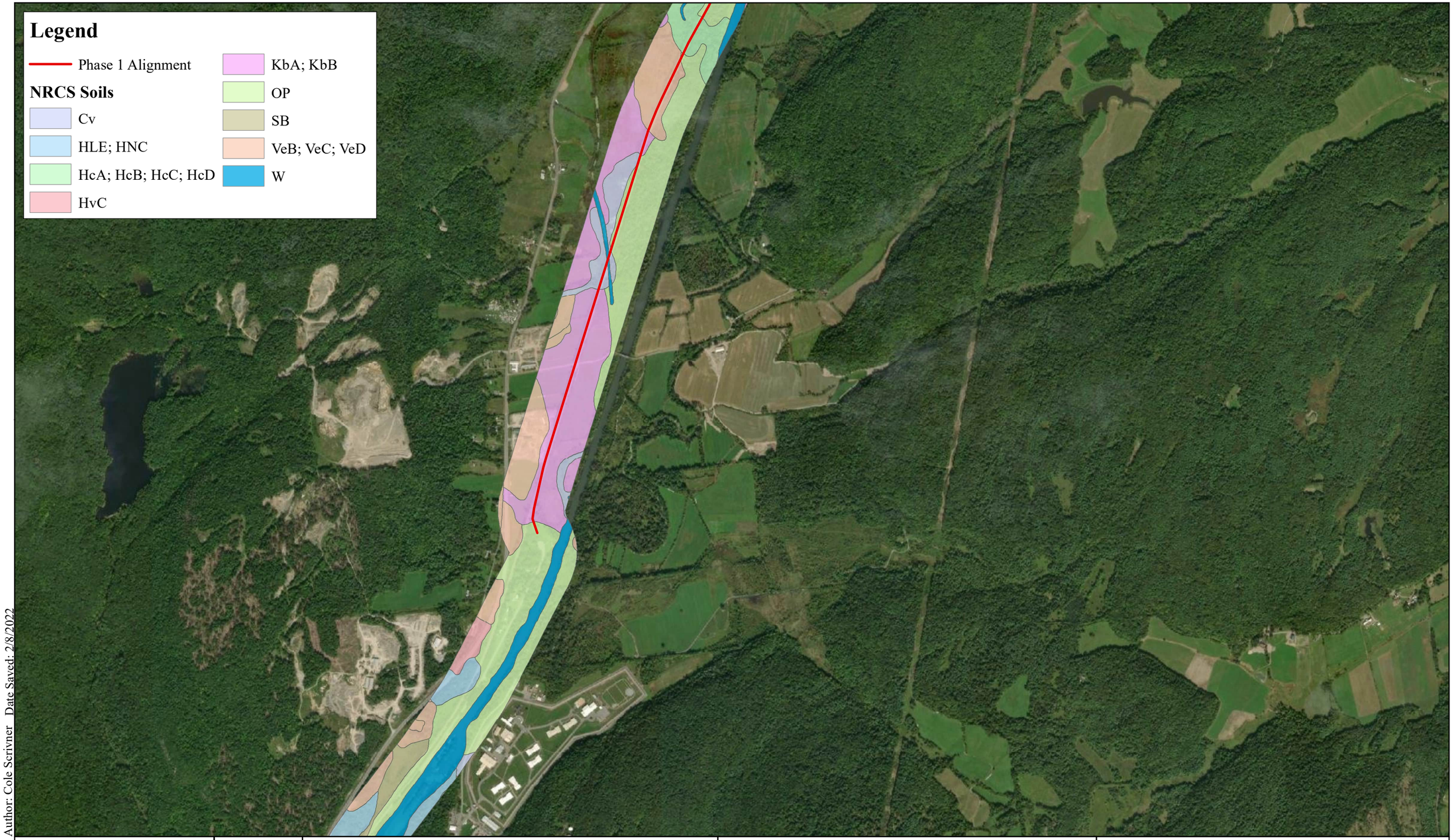

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Phase 1 NRCS Soil Map

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ATTACHMENT 4
TABLES

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
Route 3						
10000+00 Segment 1 C-401	CA	PEM/PFO	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10001+00 Segment 1 C-401	CB	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
1001+00 Segment 1 C-401	1A-A	PSS	Lake Champlain	1,041	USACE	43.734, -73.374
10019+00 Segment 1 C-401	CC	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10024+00 Segment 1 C-401	CD	PEM	Unnamed Tributary to Lake Champlain (CS2)	0	USACE	N/A
10027+00 Segment 1 C-401	CE	PEM	Unnamed Tributary to Lake Champlain (CS3)	0	USACE	N/A
10029+00 Segment 1 C-401	CF	PFO	Unnamed Tributary to Lake Champlain (CS4)	0	USACE	N/A
10044+00 Segment 1 C-402	CG	PSS	Unnamed Tributary to Lake Champlain	0	USACE	N/A
Lake Road						
10062+00 Segment 1 C-403	CH	PEM	Unnamed Tributary to Lake Champlain	189	USACE	43.726, -73.389
10064+00 Segment 1 C-403	CI	PEM	Unnamed Tributary to Lake Champlain (CS8)	38	USACE	43.726, -73.390
10080+00 Segment 1 C-403	CJ	PEM	Unnamed Tributary to Lake Champlain (CS9 and CS10)	0	USACE	N/A

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
10081+00 Segment 1 C-403	CK	PEM	Unnamed Tributary to Lake Champlain (CS10)	0	USACE	N/A
10112+00 Segment 1 C-404	CL	PSS	Unnamed Tributary to Lake Champlain (CS11)	285	USACE	43.722, -73.406
10128+00 Segment 1 C-405	CM	PEM	Unnamed Tributary to Lake Champlain (CS12)	6	USACE	43.721, -73.412
10135+00 Segment 1 C-405	CN	PEM	Unnamed Tributary to Lake Champlain	1,526	USACE	43.720, -73.414
10140+00 Segment 1 C-405	CO	PEM	Unnamed Tributary to Lake Champlain	1213	USACE	43.721, -73.416
10144+00 Segment 1 C-405	CP	PEM	Mill Brook (CS13)	3,778	USACE	43.722, -73.417
10149+00 Segment 1 C-405	CPA	PEM	Mill Brook (CS13)	5,214	USACE	43.722, -73.418
10154+00 Segment 1 C-406	CQ	PEM	Unnamed Tributary to Lake Champlain	10,524	USACE	43.723, -73.421
NYS Route 22						
10162+00 Segment 1 C-407	CR	PEM	Unnamed Tributary to Lake Champlain (CS14)	14,720	USACE	43.722, -73.424
10175+00 Segment 1 C-407	CS	PEM	Unnamed Tributary to Lake Champlain	1,458	USACE	43.711, -73.424

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
10178+00 Segment 1 C-407	CT	PEM	Unnamed Tributary to Lake Champlain	7,580	USACE	43.718, -73.426
10183+00 Segment 1 C-407	CU	PEM	Unnamed Tributary to Lake Champlain	1,271	USACE	43.718, -73.426
10184+00 Segment 1 C-407	CV	PEM	Unnamed Tributary to Lake Champlain	26,385	USACE	43.717, -73.427
10194+00 Segment 1 C-408	CW	PEM	Unnamed Tributary to Lake Champlain(CS15 (Mill Brook))	1,643	USACE	43.715, -73.429
10198+00 Segment 1 C-408	CX	PEM	Unnamed Tributary to Lake Champlain (CS15 (Mill Brook))	1,683	USACE	43.714, -73.429
10206+00 Segment 1 C-408	CY	PEM	Unnamed Tributary to Lake Champlain	5,094	USACE	43.712, -73.431
10216+00 Segment 1 C-408	CZ	PEM	Unnamed Tributary to Lake Champlain	2,053	USACE	43.710, -73.433
10219+00 Segment 1 C-408	CAA	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10220+00 Segment 1 C-408	CBB	PEM	Unnamed Tributary to Lake Champlain	2,288	USACE	43.708, -73.434
10225+00 Segment 1 C-409	CCCW	PEM	Unnamed Tributary to Lake Champlain	2,635	USACE	43.708, -73.434
10227+00 Segment 1 C-409	CDD	PEM/PSS	Unnamed Tributary to Lake Champlain	469	USACE	43.707, -73.435
10231+00 Segment 1 C-409	CEE	PEM	Unnamed Tributary to Lake Champlain	600	USACE	43.706, -73.435

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
10233+00 Segment 1 C-409	CFF	PEM	Unnamed Tributary to Lake Champlain	258	USACE	43.706, -73.435
10238+00 Segment 1 C-409	CGG	PSS	Unnamed Tributary to Lake Champlain	170	USACE	43.704, -73.435
10240+00 Segment 1 C-409	CHH	PEM/PSS	Unnamed Tributary to Lake Champlain	3,490	USACE	43.703, -73.435
10250+00 Segment 1 C-410	C2A	PEM/PSS	Unnamed Tributary to Lake Champlain	3,991	USACE	43.700, -73.434
10261+00 Segment 1 C-410	C2B	PEM	Unnamed Tributary to Lake Champlain	13,248	USACE	43.698, -73.432
10272+00 Segment 1 C-410	C2C	PEM/PUB	Unnamed Tributary to Lake Champlain	352	USACE	43.695, -73.431
10291+00 Segment 1 C-411	C2D	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10295+00 Segment 1 C-411	C2E	PEM	Unnamed Tributary to Lake Champlain	1,110	USACE	43.691, -73.424
10300+00 Segment 1 C-411	C2F	PEM	Unnamed Tributary to Lake Champlain (C2S1)	867	USACE	43.690, -73.423
10305+00 Segment 1 C-411	C2G	PEM	Unnamed Tributary to Lake Champlain	1,539	USACE	43.689, -73.422
10309+00 Segment 1 C-412	C2H	PEM	Unnamed Tributary to Lake Champlain	3,434	USACE	43.688, -73.422
10313+00 Segment 1 C-412	C2I	PEM	Unnamed Tributary to Lake Champlain	1,207	USACE	43.687, -73.423
10318+00 Segment 1 C-412	C2J	PEM	Unnamed Tributary to Lake Champlain (C2J)	4,935	USACE	43.685, -73.424

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
10322+00 Segment 1 C-412	C2K (northern)	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10340+00 Segment 1 C-413	C2K (southern)	PFO	Unnamed Tributary to Lake Champlain	0	USACE	N/A
10344+00 Segment 1 C-413	A1-B	PEM	Unnamed Tributary to Lake Champlain	2,705	USACE	43.681, -73.420
10347+00 Segment 1 C-413	A1-C	PEM	Unnamed Tributary to Lake Champlain	5,369	USACE	43.681, -73.419
10350+00 Segment 1 C-413	1A-D	PEM	Unnamed Tributary to Lake Champlain	7,058	USACE	43.680, -73.417
10350+00 Segment 1 C-413	C2L	PEM	Unnamed Tributary to Lake Champlain	4,254	USACE	43.680, -73.417
10376+00 Segment 1 C-414	C2M	PEM	Unnamed Tributary to Lake Champlain	236	USACE	43.676, -73.410
12522+00 Segment 2 C-401	1B-A	PEM	Unnamed Tributary to Lake Champlain	20,691	USACE	43.667, -73.418
12527+00 Segment 2 C-401	CII	PEM	Unnamed Tributary to Lake Champlain	6,572	USACE	43.668, -73.418
12546+00 Segment 2 C-402	CJJ	PEM	Unnamed Tributary to Lake Champlain	2,037	USACE	43.664, -73.421
12554+00 Segment 2 C-402	CKK	PEM/PSS	Unnamed Tributary to Lake Champlain	4,691	USACE	43.663, -73.424
12570+00 Segment 2 C-403	CLL	PEM	Unnamed Tributary to Lake Champlain (CS21)	4,730	USACE	43.661, -73.429
12577+50 Segment 2 C-403	CMM	PEM	Unnamed Tributary to Lake Champlain (CS22)	938	USACE	43.659, -73.431

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
12579+50 Segment 2 C-403	CNN	PEM	Unnamed Tributary to Lake Champlain (CS23)	771	USACE	43.659, -73.432
12582+00 Segment 2 C-403	COO	PEM	Unnamed Tributary to Lake Champlain (CS23)	0	USACE	N/A
12585+00 Segment 2 C-403	CPP	PEM	-	1,735	-	43.658, -73.433
12591+00 Segment 2 C-404	CQQ	PEM	Unnamed Tributary to Lake Champlain (CS24)	2,822	USACE	43.656, -73.434
12593+50 Segment 2 C-404	CRR	PFO	Unnamed Tributary to Lake Champlain (CS24)	1,101	USACE	43.656, -73.434
12596+00 Segment 2 C-404	CSS	PFO	Unnamed Tributary to Lake Champlain (CS24)	844	USACE	43.655, -73.435
12604+50 Segment 2 C-404	CTT	PEM	Unnamed Tributary to Lake Champlain (CS25)	1336	USACE	43.653, -73.436
12606+00 Segment 2 C-404	CUU	PFO	Unnamed Tributary to Lake Champlain (CS25)	325	USACE	43.653, -73.437
12614+50 Segment 2 C-404	C2N	PEM	Unnamed Tributary to Lake Champlain (CS25)	914	USACE	43.651, -73.438
12619+50 Segment 2 C-404	C2O	PEM/PFO	Unnamed Tributary to Lake Champlain	1,699	USACE	43.650, -73.439
12646+00 Segment 2 C-405	CVV	PFO	Unnamed Tributary to Lake Champlain	6,063	USACE	43.644, -73.445
12568+50 Segment 2 C-406	CWW	PEM	Unnamed Tributary to Lake Champlain	7,119	USACE	43.640, -73.446
12671+00 Segment 2 C-406	CXX	PEM	Unnamed Tributary to Lake Champlain	1,690	USACE	43.637, -73.446

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
12709+00 Segment 2 C-407	CYY	PEM	Unnamed Tributary to Lake Champlain (CYY)	8,257	USACE	43.627, -73.445
12715+00 Segment 2 C-408	CZZ	PEM	Unnamed Tributary to Lake Champlain	421	USACE	43.625, -73.445
12790+00 Segment 2 C-410	CAAA	PEM/PSS	Unnamed Tributary to Lake Champlain (CS29)	41	USACE	43.608, -73.432
12796+00 Segment 2 C-410	CBBB	PFO	Unnamed Tributary to Lake Champlain (CS29)	1,112	USACE	43.607, -73.432
12799+00 Segment 2 C-410	CCCC	PEM	Unnamed Tributary to Lake Champlain (CS29)	661	USACE	43.606, -73.432
12802+00 Segment 2 C-411	CDDD	PEM	Unnamed Tributary to Lake Champlain	837	USACE	43.605, -73.431
12824+00 Segment 2 C-411	CEEE	PEM	-	795	-	43.599, -73.434
12831+50 Segment 2 C-412	CHHH	PFO	Unnamed Tributary to Lake Champlain	0	USACE	N/A
12840+00 Segment 2 C-412	CFFF	PEM	Unnamed Tributary to Lake Champlain	0	USACE	N/A
12844+00 Segment 2 C-412	CGGG	PEM	-	605	-	43.594, -73.435
12856+75 Segment 2 C-412	G-R	PFO	Unnamed Tributary to Lake Champlain (G-S-H)	375	USACE	43.591, -73.438
12867+25 Segment 2 C-413	G-Q	PFO	-	0	-	N/A
12906+00 Segment 2 C-414	G-P	PEM	Unnamed Tributary to Lake Champlain	349	USACE	43.578, -73.440

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
12918+00 Segment 2 C-414	G-N	PEM	Unnamed Tributary to Lake Champlain	20,465	USACE	43.575, -73.437
12918+00 Segment 2 C-414	G-O	PEM	Unnamed Tributary to Lake Champlain	915	USACE	43.575, -73.437
12927+00 Segment 2 C-415	G-L	L2	Lake Champlain South Bay	128,553	USACE	43.574, -73.433
12828+00 Segment 2 C-415	G-M	L1	Lake Champlain South Bay	15,612	USACE	43.574, -73.433
12943+25 Segment 2 C-415	G-K	L2	Lake Champlain South Bay	26,681	USACE	43.572, -73.429
12943+75 Segment 2 C-415	G-J	L1	Lake Champlain South Bay	26,641	USACE	43.572, -73.429
12948+00 Segment 2 C-415	G-I	PEM	Lake Champlain South Bay	2,499	USACE	43.571, -73.427
12959+00 Segment 2 C-416	G-H	PEM/PSS	Lake Champlain South Bay	2,581	USACE & NYSDEC (WH-1)	43.571, -73.423
12964+00 Segment 2 C-416	G-G	PEM	Lake Champlain South Bay	18,536	USACE & NYSDEC (WH-1)	43.571, -73.421
12968+50 Segment 2 C-416	G-F	PEM	Lake Champlain South Bay	0	USACE & NYSDEC (WH-1)	N/A
12982+00 Segment 2 C-416	G-E	PEM/PSS	Lake Champlain South Bay	23,970	USACE & NYSDEC (WH-1)	43.569, -73.414
13011+25 Segment 2 C-418	G-D	PEM	Lake Champlain South Bay	207	USACE	43.564, -73.407
13019+00 Segment 2 C-418	G-C	PEM	Lake Champlain South Bay	19,457	USACE & NYSDEC (WH-2)	43.562, -73.406

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
13031+00 Segment 2 C-418	G-B	PEM	Lake Champlain South Bay	4,735	USACE & NYSDEC (WH-2)	43.559, -73.405
13036+00 Segment 2 C-418	G-A	PSS	Lake Champlain South Bay	683	USACE & NYSDEC (WH-2)	43.558, -73.404
CP Rail						
15078+00 Segment 3 C-403	G-R-S	PEM	Unnamed Tributary to Champlain Canal	109,996	USACE	43.535, -73.408
15093+00 Segment 3 C-404	G-R-X	PEM/PSS/PFO	Unnamed Tributaries to Champlain Canal (C-R-S3, C-R-S2, C-R-X-S1 and G-R-S-M)	567,012	USACE	43.514, -73.415
15142+00 Segment 3 C-405	G-R-U	PEM/PFO	Unnamed Tributary to Champlain Canal (G-R-S-K)	205,762	USACE	43.516, -73.412
15186+00 Segment 3 C-407	G-R-V	PFO	Champlain Canal	6,154	USACE	43.508, -73.415
15198+00 Segment 3 C-407	G-R-W	PSS/PFO	Champlain Canal	12,621	USACE	43.504, -73.416
15281+25 Segment 3 C-201	SA4	PEM	Unnamed Tributary to Champlain Canal (G-R-S-N)	4,154	USACE	43.483, -73.427
15282+50 Segment 3 C-410	G-R-Y	PEM	Unnamed Tributary to Champlain Canal (G-R-S-N)	48,391	USACE	43.481, -73.429
15282+50 Segment 3 C-201	SA3	PEM	-	1,364	-	43.483, -73.427
15283+00 Segment 3 C-201	SA2	PEM	Unnamed Tributary to Champlain Canal (G-R-S-N)	3,858	USACE	43.483, -73.427

Table 4-1 Summary of Wetlands Within the Project Corridor[1]						
Approximate Station & Dwg. No.	**Wetland ID**	**Cowardin Classification[2]**	**Associated Water Course**	**Area w/in JD Limits Square Feet (sf)**	**USACE, APA, & NYSDEC Jurisdiction**	**Coordinates (lat., long)**
15285+00 Segment 3 C-201	SA1	PEM/PSS	Unnamed Tributary to Champlain Canal (G-R-S-N)	16,485	USACE	43.482, -73.428
Old State Route 4						
15304+00 Segment 3 C-411	CIII	PEM	-	0	-	N/A
15306+00 Segment 3 C-411	CJJJ	PEM	Unnamed Tributary to Champlain Canal	9,387	USACE	43.477, -73.430

[1] Wetlands identified include both wetlands that are directly crossed by the overland transmission cable corridor as well as wetlands that are adjacent to the Project Corridor that were delineated during field surveys.

[2]Cowardin et al. 1979 categories include: Palustrine Emergent (PEM), Palustrine Forested (PFO), Palustrine Scrub-Shrub (PSS), palustrine unconsolidated bottom (PUB), lacustrine limnetic unconsolidated bottom (L1UB), and lacustrine littoral aquatic bed (L2AB).

Table 4-2 Summary of Waterbodies within the Project Corridor									
Approximate Station	**Waterbody Name**	**NYSDEC Classification**	**Waterbody Field ID & NYSDEC Regulation**	**Flow Status**	**Substrate**	**Width (ft.)[1]**	**Depth (ft.)[1]**	**Length w/in JD Boundary**	**Coordinates (lat., long)**
Route 3									
10006+00 Segment 1 C-401	Unnamed Tributary to Lake Champlain	Unmapped	CS1	Intermittent	Mineral soil	4.5	1	416	43.733, -73.376
10024+00 Segment 1 C-401	Unnamed Tributary to Lake Champlain	Unmapped	CS2	Intermittent	Bedrock/ cobble-gravel	4.5	1	76	43.731, -73.38
10027+00 Segment 1 C-401	Unnamed Tributary to Lake Champlain	Unmapped	CS3	Intermittent	Mineral soil/ cobble-gravel	3	1	105	43.731, -73.381
10029+00 Segment 1 C-401	Unnamed Tributary to Lake Champlain	Unmapped	CS4	Intermittent	Mineral soil	3	1	93	43.731, -73.382
10035+00 Segment 1 C-402	Unnamed Tributary to Lake Champlain	Unmapped	CS5	Intermittent	Mineral soil	2	1	110	43.731, -73.385
10039+00 Segment 1 C-402	Unnamed Tributary to	Unmapped	CS6	Intermittent	Cobble-gravel	12	2	100	43.731, -73.386

	Lake Champlain								
10041+00 Segment 1 C-402	Unnamed Tributary to Lake Champlain	Unmapped	CS7	Intermittent	Mineral soil/boulder	5	2	120	43.731, -73.387
Lake Road									
10064+00 Segment 1 C-403	Unnamed Tributary to Lake Champlain	Unmapped	CS8	Perennial	Mineral soil/bedrock/ cobble	2	1	154	43.726, -73.39
10080+00 Segment 1 C-403	Unnamed Tributary to Lake Champlain	Unmapped	CS9	Perennial	Boulder	14	2.5	77	43.725, -73.395
10080+00 Segment 1 C-403	Overflow channel of Wetland CK conveying flow to CS10	Unmapped	CS10	Intermittent	Cobble-gravel	3	1	33	43.725, -73.395
10112+00 Segment 1 C-404	Unnamed Tributary to Lake Champlain	Unmapped	CS11	Perennial	Mineral soil/cobble-gravel	4	1	74	43.722, -73.406
10128+00 Segment 1 C-405	Unnamed Tributary to Lake Champlain	Unmapped	CS12	Intermittent	Mineral soil/cobble-gravel	2	1	88	43.721, -73.412
10148+00 Segment 1 C-405	Mill Brook	C/C(T)	CS13 830-432	Perennial	Silt-mud	35	6	52	43.722, -73.418

Route 22									
10173+00 Segment 1 C-407	Mill Brook	C/C(T) 830-432	CS14	Perennial	Mineral soil/cobble-gravel	3	1	40	43.72, -73.425
10197+00 Segment 1 C-408	Mill Brook	C/C(T) 830-432	CS15	Perennial	Boulder	20	3	72	43.714, -73.429
10300+00 Segment 1 C-411	Unnamed Tributary to Lake Champlain	D/D 830-433.1	C2S1	Perennial	Cobble-gravel	2.5	0.5	44	43.69, -73.423
10321+00 Segment 1 C-412	Unnamed Tributary to Lake Champlain	Unmapped	C2J	Intermittent	Silt/cobble-gravel	2	1	402	43.685, -73.424
10331+00 Segment 1 C-412	Unnamed Tributary to Lake Champlain	Unmapped	C2S2	Intermittent	Silt/boulder/cobble-gravel	2	0.5	50	43.683, -73.424
10360+00 Segment 1 C-413	Unnamed Tributary to Lake Champlain	C/C 830-433	C2S3	Perennial	Silt/cobble-gravel	17.5	1.5	100	43.679, -73.414
12519+00 Segment 2 C-401	Unnamed Tributary to Lake Champlain	Unmapped	CS16	Intermittent	Rip rap	3	0.5	204	43.67, -73.417
12533+00 Segment 2 C-402	Unnamed Tributary to Lake Champlain	C/C 830-433	1B-S1	Perennial	Cobble-gravel	8	1.5	20	43.666, -73.42
12534+00 Segment 2 C-402	Unnamed Tributary to	C/C 830-433	CS17	Perennial	Bedrock	45	1.5	450	43.666, -73.42

	Lake Champlain								
12534+00 Segment 2 C-402	Unnamed Tributary to Lake Champlain	C/C 830-433	CS18	Perennial	Cobble-gravel	6	0.5	20	43.667, -73.419
12535+00 Segment 2 C-402	Unnamed Tributary to Lake Champlain	Unmapped	CS19	Perennial	Cobble-gravel	6	0.5	68	43.666, -73.419
12539+00 Segment 2 C-402	Unnamed Tributary to Lake Champlain	Unmapped	CS20	Intermittent	Silt/gravel	4	0.5	176	43.666, -73.42
12566+00 Segment 2 C-403	Unnamed Tributary to Lake Champlain	Unmapped	CS21	Intermittent	Cobble-gravel	2.5	0.5	104	43.662, -73.429
12576+00 Segment 2 C-403	Unnamed Tributary to Lake Champlain	Unmapped	CS22	Perennial	Cobble-gravel	3	0.5	98	43.66, -73.431
12579+50 Segment 2 C-403	Unnamed Tributary to Lake Champlain	Unmapped	CS23	Intermittent	Mineral soil/silt	2	1	28	43.659, -73.432
12593+00 Segment 2 C-404	Unnamed Tributary to Lake Champlain	Unmapped	CS24	Perennial	Silt/boulder/cobble-gravel	10	2.5	230	43.655, -73.434

12599+50 Segment 2 C-404	Unnamed Tributary to Lake Champlain	C/C 830-433	CS25	Perennial	Boulder & rip rap over mineral soil	20	2	32	43.651, -73.437
12631+00 Segment 2 C-405	Unnamed Tributary to Lake Champlain	C/C 830-433	C2S4	Perennial	Silt/boulder/cobble-gravel	10	2.5	1	43.647, -73.442
12666+75 Segment 2 C-406	Unnamed Tributary to Lake Champlain	C/C(T) 830-434	CS26	Perennial	Silt/boulder/cobble-gravel/mineral	16	1.5	18	43.638, -73.446
12712+00 Segment 2 C-408	Unnamed Tributary to Lake Champlain	Unmapped	CYY	Intermittent	Mineral soil/cobble-gravel	6	0.5	51	43.626, -73.445
12745+00 Segment 2 C-409	Pine Lake Brook	C/C 830-436	CS27	Perennial	Bedrock	30	2.5C/C	53	43.62, -73.438
12755+00 Segment 2 C-409	Unnamed Tributary to Lake Champlain	C/C 830-441	CS28	Perennial	No data	No data	No data	65	43.617, -73.436
12796+25 Segment 2 C-410	Unnamed Tributary to Lake Champlain	B/B 830-441.1	CS29	Perennial	Mineral soil/cobble-gravel	12	1	25	43.606, -73.432
12796+75 Segment 2 C-410	Unnamed Tributary to Lake Champlain	Unmapped	CS30	Intermittent	Boulder/cobble-gravel	6	1	19.5	43.606, -73.432

12846+00 Segment 2 C-412	Unnamed Tributary to Lake Champlain	Unmapped	CS31	Intermittent	Mineral soil/cobble-gravel	6	1.5	63	43.593, -73.436
12853+50 Segment 2 C-412	Unnamed Tributary to Lake Champlain	Unmapped	G-S-I	Perennial	Cobble-gravel/silt	5	1	37	43.592, -73.437
12856+75 Segment 2 C-412	Unnamed Tributary to Lake Champlain	Unmapped	G-S-H	Intermittent	Cobble-gravel/bedrock	3	0.5	23.5	43.591, -73.438
12862+00 Segment 2 C-413	Unnamed Tributary to Lake Champlain	Unmapped	G-S-G	Intermittent	Sand/cobble-gravel	6	2	91	43.589, -73.438
12863+25 Segment 2 C-413	Unnamed Tributary to Lake Champlain	B/B 830-441.1	G-S-F	Intermittent	Sand/cobble-gravel	4	2	22	43.589, -73.438
12893+60 Segment 2 C-414	Unnamed Tributary to Lake Champlain	C/C 830-441	G-S-E	Perennial	Cobble-gravel/boulder	3	0.5	22	43.581, -73.44
12899+50 Segment 2 C-414	Unnamed Tributary to Lake Champlain	Unmapped	G-S-D	Intermittent	Cobble-gravel	1	1	48	43.579, -73.44
12900+00 Segment 2 C-414	Unnamed Tributary to	Unmapped	G-S-C	Perennial	Cobble-gravel/bedrock	6	2	39.5	43.579, -73.44

	Lake Champlain								
12903+25 Segment 2 C-414	Unnamed Tributary to Lake Champlain	Unmapped	G-S-B	Intermittent	Cobble-gravel/bedrock/silt	3	1	39	43.578, -73.44
12906+00 Segment 2 C-414	Unnamed Tributary to Lake Champlain	Unmapped	G-S-AA	Perennial	Cobble-gravel/bedrock/silt	2	0.5	30	43.578, -73.44
13007+75 Segment 2 C-417	Unnamed Tributary to Lake Champlain	Unmapped	G-S-A	Intermittent	Cobble-gravel/silt	6	5	41	43.566, -73.406
CP Rail									
15105+00 Segment 3 C-404	Unnamed Tributary to Champlain Canal	Unmapped	C-R-S3	Intermittent	Mineral soil	2.5	0.75	47	43.53, -73.409
15121+00 Segment 3 C-405	Unnamed Tributary to Champlain Canal	Unmapped	C-R-S2	Perennial	Mineral soil	7	1.5	55.5	43.525, -73.411
15142+00 Segment 3 C-405	Unnamed Tributary to Champlain Canal	Unmapped	C-R-S1/ G-R-S-K	Perennial	Silt over rock	25	5	146	43.52, -73.412
15178+00 Segment 3 C-406	Champlain Canal	C/C 830-469	G-R-S-L	Perennial	Silt	40	6	70	43.51, -73.414

15227+00 Segment 3 C-408	Tributary to Champlain Canal	C/C 830-469	G-R-S-M	Perennial	Silt	30	4	44	43.498, -73.421
15298+00 Segment 3 C-410	Unnamed Tributary to Champlain Canal	Unmapped	G-R-S-N	Intermittent	Silt and small cobble	5	2-3	25	43.479, -73.43

[1] **Bankfull width and bankfull depth measurements are approximate.**

Table 4-3 Soil Description Summary					
County	**Soil Name**	**Symbol**	**% Slopes**	**Hydric (y/n)**	**Drainage Class**
Hydric Soils					
Washington	Carlisle muck	Ca	0-2	Y	Very Poorly Drained
Washington	Catden Muck	Ca	0-2	Y	Very Poorly Drained
Washington	Covington silty clay loam	Cv	0-2	Y	Poorly Drained
Washington	Limerick silt loam	Lm	0-2	Y	Poorly Drained
Washington	Saco silt loam	Sa	0-2	Y	Very Poorly Drained
Washington	Saprists, Aquepts, and Aquents	SB	0-2	Y	Very Poorly Drained
Non-hydric Soils					
Washington	Charlton soils, very stony, gently sloping and sloping	CHC	-	N	Well Drained
Washington	Charlton soils, very stony, moderately steep and steep	CHE	-	N	Well Drained
Washington	Claverack loamy fine sand	ClA	0-2	N	Moderately Well Drained
Washington	Claverack loamy fine sand	ClB	2-6	N	Moderately Well Drained
Washington	Hartland very fine sandy loam	HcB	2-6	N	Well Drained
Washington	Hartland very fine sandy loam	HcC	6-12	N	Well Drained
Washington	Hollis-Charlton association, moderately steep and steep	HLE	15-25	N	Well Drained
Washington	Hoosic gravelly sandy loam, rolling and hilly	HSDK	-	N	Somewhat Excessively Drained
Washington	Hudson and Vergennes soils, steep and very steep	HWE	-	N	Moderately Well Drained
Washington	Kingsbury silty clay	KbA	0-2	N	Somewhat Poorly Drained

Table 4-3 Soil Description Summary					
County	**Soil Name**	**Symbol**	**% Slopes**	**Hydric (y/n)**	**Drainage Class**
Washington	Kingsbury silty clay	KbB	2-6	N	Somewhat Poorly Drained
Washington	Oakville loamy fine sand	OaB	0-5	N	Excessively Drained
Washington	Orthents and Psamments	OP	0-15	N	Well Drained
Washington	Vergennes silty clay loam	VeB	2-6	N	Moderately Well Drained
Washington	Vergennes silty clay loam	VeC	6-12	N	Moderately Well Drained
Washington	Vergennes silty clay loam	VeD	12-20	N	Moderately Well Drained
Washington	Wallington silt loam, sandy substratum	Wa	0-2	N	Somewhat Poorly Drained
Washington	Farmington-Rock outcrop association, nearly level through moderately steep	FCC	-	N	Well Drained
Washington	Hollis-Rock outcrop association, gently sloping and sloping	HNC	3-8	N	Well Drained
Washington	Pits, gravel and sand	Pr	-	N	-
Washington	Rock outcrop-Hollis association, moderately steep through very steep	ROF	-	N	-
Washington	Rock outcrop-Vergennes association, gently sloping through moderately sloping	RPC	-	N	Moderately Well Drained

ATTACHMENT 5
WETLANDS AND WATERBODIES DELINEATION MAPPING

(Putnam Station Transitional HDD Project Area Plans Only)

LEGEND & ABBREVIATIONS

- EXIST. FIBER OPTIC LINE HANDHOLE
- EXIST. FIBER OPTIC LINE PEDESTAL
- EXIST. FIBER OPTIC LINE DOGHOUSE
- EXIST. FIBER OPTIC LINE MANHOLE
- EXIST. FIBER OPTIC LINE VAULT
- EXIST. FIBER OPTIC LINE BORE PIT
- EXIST. FIBER OPTIC LOCK BOX
- EXIST. GROUND ROD
- EXIST. FIBER OPTIC MARKER POST
- EXIST. FIBER STORAGE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. WATER MANHOLE
- EXIST. WATER MARKER
- EXIST. SANITARY SEWER MANHOLE
- EXIST. SANITARY SEWER VENT
- EXIST. STORM SEWER MANHOLE
- EXIST. STORM SEWER CATCH BASIN
- EXIST. CULVERT INVERT
- EXIST. GAS MANHOLE
- EXIST. GAS VALVE
- EXIST. GAS MARKER
- EXIST. GAS PIPELINE VENT
- EXIST. LIGHT POLE
- EXIST. UTILITY POLE
- EXIST. ELEC. POLE
- EXIST. TRAFFIC LIGHT
- EXIST. ELEC. METER
- EXIST. ELEC. MANHOLE
- EXIST. ELEC. TRANSFORMER
- EXIST. ELEC. VAULT
- EXIST. ELEC. HANDHOLE
- EXIST. ELEC. PEDESTAL/BOX
- EXIST. ELEC. MARKER POST
- EXIST. ELEC. GUY ANCHOR/WIRE
- EXIST. TELE. RISER/BOX
- EXIST. TELE. MANHOLE
- EXIST. TELE. HANDHOLE
- EXIST. TELE. VAULT
- EXIST. TELE. PEDESTAL
- EXIST. TELE. DOGHOUSE
- EXIST. TELE. MARKER POST
- EXIST. TELE. JUNCTION BOX
- EXIST. TRAFFIC SIGNAL BOX
- EXIST. CELL TOWER
- EXIST. CABLE BOX
- EXISTING MANHOLE UNKNOWN
- EXISTING UTILITY BOX UNKNOWN
- EXISTING ANTENNA
- EXISTING CAPPED IRON ROD
- EXISTING IRON PIPE
- EXISTING CONCRETE MONUMENT
- EXISTING POST
- EXISTING REFLECTOR MARKER
- EXISTING SYMBOL

- EXISTING SIGN
- EXIST. STRUCTURE POST
- EXIST. STRUCTURE MAILBOX
- EXIST. WETLAND FLAG
- EXIST. GAS LINE
- EXIST. UNDERGROUND TELE.
- EXIST. FIBER OPTIC
- EXIST. OVERHEAD TELE.
- EXIST. UNDERGROUND ELEC.
- EXIST. OVERHEAD ELEC.
- EXIST. CULVERT
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- EXIST. POTABLE WATER LINE
- EXIST. RAILROAD TRACK
- EXIST. WETLANDS
- CERTIFIED ROUTE PROVIDED BY CHPE KMZ
- EXIST. CONTOUR, INDEX
- EXIST. CONTOUR, DEPRESSION INDEX
- EXIST. CONTOUR, INTERMEDIATE
- EXIST. CONTOUR, DEPRESSION INTERMEDIATE
- EXIST. SPOT ELEVATION
- EXIST. CULTURAL DEBRIS
- EXIST. CULTURAL FIELD LINE
- EXIST. CULTURAL LANDSCAPE AREA
- EXIST. CULTURAL PILE
- EXIST. CULTURAL STORAGE AREA
- EXIST. HYDROGRAPHIC
- EXIST. CULVERT
- EXIST. INUNDATED AREA
- EXIST. RIP-RAP
- EXIST. STREAM
- EXIST. SWAMP
- WATER LEVEL
- EXIST. NATURAL BOULDER
- EXIST. NATURAL SHRUB LINE
- EXIST. NATURAL TREE LINE
- EXIST. NATURAL SINGLE TREE/BUSH
- EXIST. STRUCTURAL BUILDING
- EXIST. PAVED DRIVE
- EXIST. PAVED ROAD
- EXIST. PAVED SHOULDER
- EXIST. PAVED SIDEWALK
- EXIST. GUARDRAIL
- EXIST. RAILROAD
- EXIST. TRAIL
- EXIST. FENCE
- EXIST. WALL
- EXIST. RETAINING WALL
- EXIST. MILEPOST NUMBER
- EXIST. MAPPING BOUNDARY
- EXIST. GROUND CONTROL
- PROP. RIGHT-OF-WAY
- PROP. ABUTTER

- PEM – PALUSTRINE EMERGENT
- PSS – PALUSTRINE SCRUB-SHRUB
- PFO – PALUSTRINE FORESTED
- PUB – PALUSTRINE UNCONSOLIDATED BOTTOM
- L1 – LACUSTRINE LIMNETIC
- L2 – LACUSTRINE LITTORAL
- NYSDEC FWW 100-FOOT ADJACENT BUFFER AREA
- GIS – WETLAND
- JD BOUNDARY
- PROP. WETLAND PROTECTION FENCE
- PROP. COMPOST FILTER SOCK (OR SILT SOCK)
- PROP. LIMITS OF WORK/DISTURBANCE
- PROP. LIMITS OF CLEARING/LIMITS OF WORK IN CLEARING AREAS (SEE NOTE 1)
- PROP. CONCRETE WASHOUT
- PROP. ACCESS ROAD ROUTE (EXISTING ROAD OR SURFACE)
- PROP. REFURBISHED ACCESS ROAD
- PROP. ACCESS ROAD OR OFF SITE ACCESS ROAD
- PROP. TIMBER MATTING ACCESS ROAD
- PROP. SPLICE LOCATION
- PROP. SPLICE VAULT
- PROP. LINK BOX HANDHOLE
- PROP. FIBER SPLICE HANDHOLE
- PROP. BORING LOCATION
- PROP. ALIGNMENT STATIONING
- PROP. RIGHT-OF-WAY
- PROP. ABUTTER
- PROP. ALIGNMENT CENTERLINE
- PROP. TEMPORARY EASEMENT
- PROP. PERMANENT EASEMENT
- PROP. TEMPORARY ACCESS EASEMENT
- APPROXIMATE SNOWMOBILE TRAIL LOCATION

NOTES:

1. LIMIT OF WORK (LOW) – THE BOUNDARY IN WHICH ALL CONSTRUCTION ACTIVITIES, STOCKPILE MATERIALS, EQUIPMENT STORAGE, ACCESS, PARKING, GRADING, LANDSCAPING, RESTORATION, AND ANY OTHER CONSTRUCTION RELATED ACTIVITIES SHALL OCCUR. ADDITIONALLY, THE LOW IS THE BOUNDARY FOR ALL POTENTIAL DISTURBANCE DURING CONSTRUCTION. UNLESS OTHERWISE SPECIFIED, WHEN THE LIMIT OF CLEARING AND GRUBBING IS SHOWN ON THE PLANS, IT SHALL ALSO BE THE LOW. THE LOW INCLUDES THE AREA THAT WOULD BE CONSIDERED THE LIMIT OF DISTURBANCE (LOD).

APP	APPROVED
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
DB	DESIGNED BY
DEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DEG	DEGREES
DR	DRIVE
DZ	DEVIATION ZONE
E	EASTING
ELECTRIC	ELECTRIC CABLE
ELEV	ELEVATION
FIBER	FIBER OPTIC CABLE
FT	FEET
GAS	GAS PIPE
H	HORIZONTAL
HDD	HORIZONTAL DIRECTIONAL DRILLING
HVDC	HIGH-VOLTAGE DIRECT CURRENT TRANSMISSION LINE
INV	INVERT ELEVATION
LOW	LIMITS OF WORK
MAX	MAXIMUM
MIN	MINIMUM
N	NORTHING
NO	NUMBER
NY	NEW YORK
P#	PACKAGE #
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REV	REVISION
ROW	RIGHT-OF-WAY
RTE	ROUTE
SEWER	SANITARY SEWER PIPE
SH	SHEET
ST	STREET
STA	STATION
STORM	STORM DRAIN PIPE
TELECOM	TELECOMMUNICATIONS CABLE
TEMP	TEMPORARY
TR	THERMAL RESISTIVITY
TYP	TYPICAL
V	VERTICAL
WATER	WATERLINE

CHPE Champlain Hudson Power Express

Kiewit

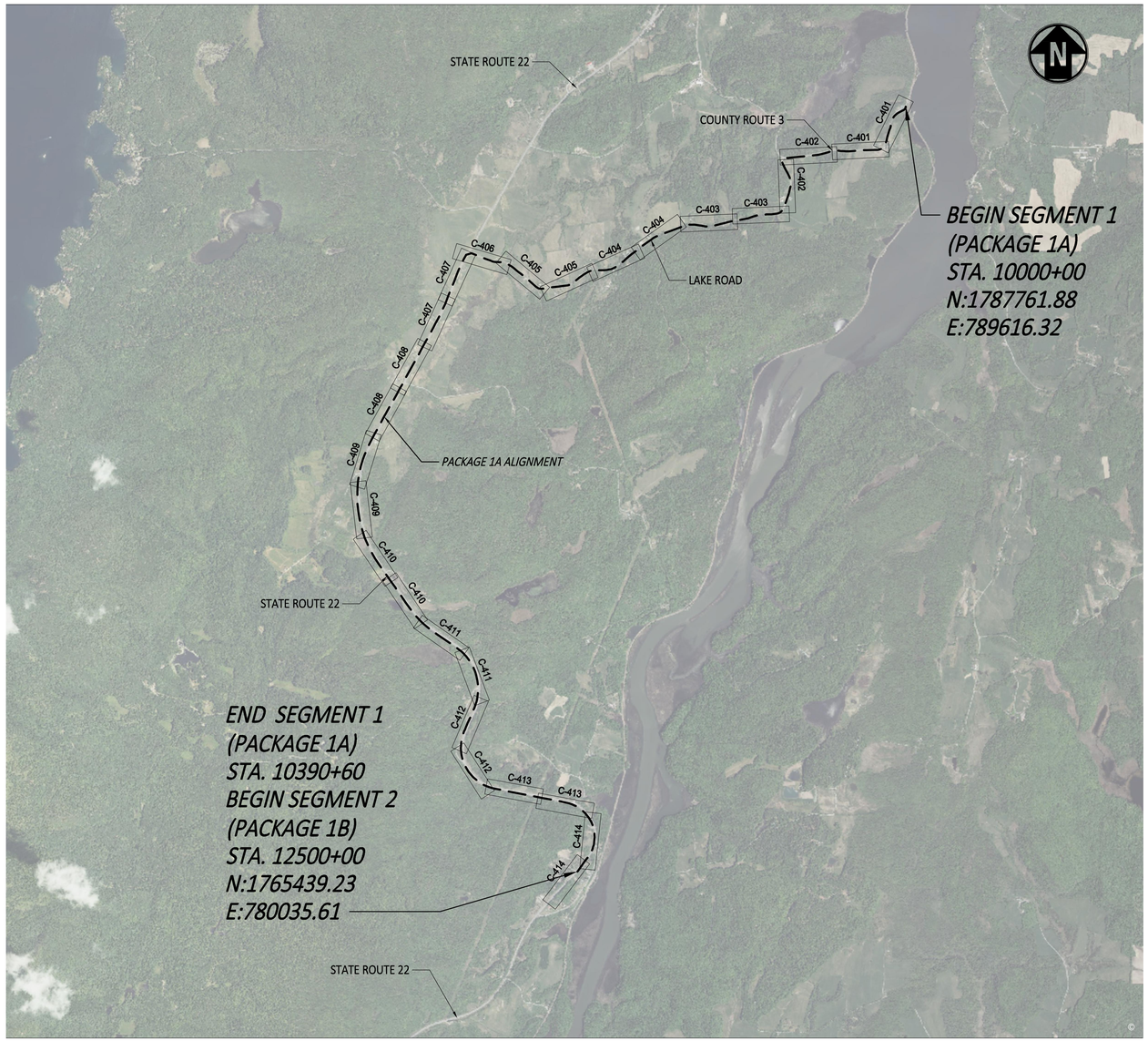
CHA
111 Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 . www.chacompanies.com

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/21/2022	FINAL EM&CP SUBMISSION	JM	JR

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN
LEGEND AND ABBREVIATIONS

DRAWN BY: JJE | DESIGNED BY: JTM | APPROVED BY: JPR | SCALE AS NOTED | REV. NO. X

KIEWIT PROJECT NO. 21162
CHA PROJECT NO. 066076
DRAWING NO. G-004
DATE 09/21/2022
SH.NO. XXX OF XXX



E&S KEY MAP
SCALE: 1" = 2000'

CHPE Champlain Hudson Power Express

Kiewit

CHA
III Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 . www.chacompanies.com

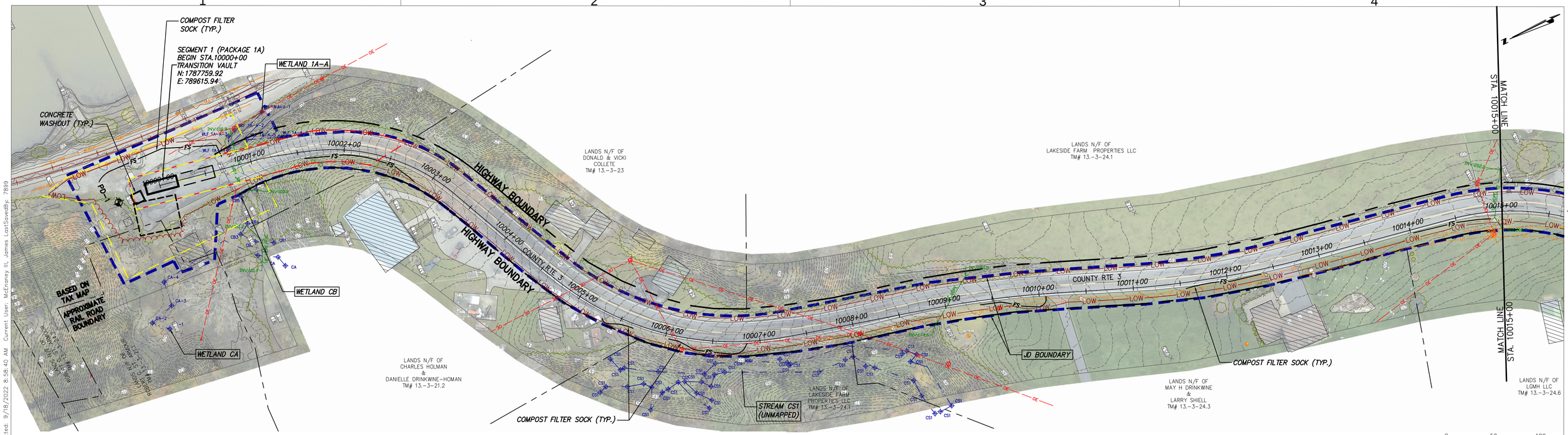
STATE OF NEW YORK
JOSEPH P. ROMANO
081993
LICENSED PROFESSIONAL ENGINEER
09/18/2022

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/21/2022	FINAL EM&CP SUBMISSION	JM	JR

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN
KEYPLAN E&S

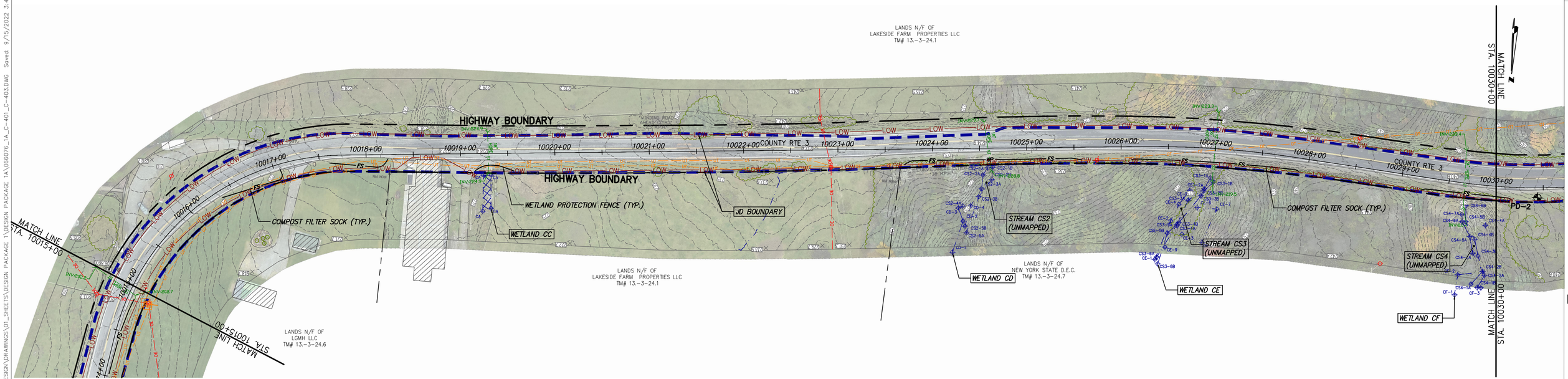
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-400

DRAWN BY: JJE | DESIGNED BY: JTM | APPROVED BY: JPR | SCALE AS NOTED | REV. NO. X | DATE 09/21/2022 | SH.NO. XXX OF XXX



STA. 10000+00 TO STA. 10015+00 PLAN VIEW
SCALE: 1" = 50'

0 50 100
Scale in feet



STA. 10015+00 TO STA. 10030+00 PLAN VIEW
SCALE: 1" = 50'

0 50 100
Scale in feet

CHPE Champlain Hudson Power Express

Kiewit

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STATE OF NEW YORK · JOSEPH P. ROMANO · 081993 · LICENSED PROFESSIONAL ENGINEER
09/18/2022

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/21/2022	FINAL EM&CP SUBMISSION	JM	JR

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN
STA. 10000+00 TO STA. 10030+00
EROSION AND SEDIMENT CONTROL PLAN

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-401

DRAWN BY: JJE | DESIGNED BY: JTM | APPROVED BY: JPR | SCALE AS NOTED | DATE 09/21/2022 | REV. NO. X | SH.NO. XXX OF XXX

ATTACHMENT 6
WATERBODY PHOTOGRAPHS

(No Waterbodies Identified at Putnam Station Transitional HDD Project Area)