Appendix B-2-3
Wetland Delineation Reports

September 2020 Wetland Delineation Memorandum

WETLAND DELINEATION MEMORANDUM
LIVINGSTON AVENUE BRIDGE PROJECT
(PIN 1935.49, BIN 7092890)
OCTOBER 2020

Memorandum

To:	U.S. Department of Transportation Federal Railroad Administration and New York State Department of Transportation
From:	Jesse Moore & Jeremy Law (AKRF)
Date:	October 1, 2020
Re:	Wetland Delineation Memorandum – Livingston Avenue Bridge Project (PIN 1935.49, BIN 7092890)
cc:	Sandy Collins & Jim Finegan (AKRF)

INTRODUCTION

The New York State Department of Transportation (NYSDOT) is proposing to replace the Livingston Avenue Bridge (proposed project) in Albany and Rensselaer, NY (see **Figure 1**). The purpose of the proposed project is to improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor; achieve (at a minimum) a long-term state-of-good-repair for the bridge; eliminate existing bridge and track deficiencies; and maintain or improve navigation near the bridge. This will ensure that the Livingston Avenue Bridge meets modern passenger and freight rail capacity and load (weight) standards, maintains acceptable levels of safety, and supports the long-term utility and vitality of the Empire Corridor.

AKRF delineated one wetland and one ephemeral stream within the study area on September 8, 2020. This memorandum presents the results of that wetland delineation.

METHODOLOGY

Prior to the wetland delineation, maps from the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (see **Figure 2**) and the New York State Department of Environmental Conservation (NYSDEC) were reviewed for NWI-mapped and/or NYSDEC-mapped wetlands, respectively, within the study area. The Natural Resources Conservation Service (NRCS) soils maps (see **Figure 3**) were also reviewed for soil types within the study area, with respect to soil series identified as hydric. AKRF wetland scientists conducted a wetland delineation within the study area of the proposed project on September 8, 2020, using the United States Army Corps of Engineers (USACE) wetland delineation methodology.[1] Methodology pertaining to the three USACE wetland indicators (i.e., hydrology, hydric soils, and hydrophytic vegetation) is described below. The attached USACE *Wetland Determination Data Form – Northcentral and Northeast Region* (2012) was used to document the wetlands observed in the study area and photographs of the delineated wetland and stream are shown in **Figures 4** and **5**.

[1] Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss; U.S. Army Corps of Engineers. 2011. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (version 2.0), ed. J.S. Wakeley, R.W. Lichvar, C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

HYDROLOGY AND SOILS

The hydrology of the study area was characterized using aerial photographs, site observations, and soil samples from the study area. An auger was used to collect the samples to determine soil saturation and/or a high water table. The soil samples were characterized using the Munsell Soil Color Chart. During the wetland delineation, both hydrology and soils observations were made during a period of dry weather.

VEGETATION

The USACE *Northcentral and Northeast 2018 Regional Wetland Plant List* was used to determine the wetland/upland status[2] of the plant species identified within the study area. Percent cover was documented in the tree, woody vine, sapling/shrub, and herbaceous strata. A 30-foot radius plot was established to document plant species percent cover in the tree and vine strata. Within this 30-foot plot, a 15-foot radius plot was established for the measurement of percent cover of shrubs and saplings. For species in the herbaceous stratum, a 5-foot radius plot was established within the 30-foot radius plot.

WETLAND MAPS

NATIONAL WETLANDS INVENTORY-MAPPED WETLANDS

NWI wetland maps indicate that two categories of freshwater wetlands occur within the study area (see **Figure 2**). The NWI-mapped freshwater wetlands include the Hudson River, mapped as riverine tidal wetland with an unconsolidated bottom that is permanently flooded (R1UBV), and a Hudson River tributary on the west bank of the river in Albany mapped as riverine unknown perennial wetland with an unconsolidated bottom that is permanently flooded (R5UBH). Site inspection conducted during the wetlands delineation survey confirmed the only the mapped Hudson River R1UBV wetland type and approximate location. The Hudson River tributary mapped as R5UBH wetland type was not observed in the field and may represent a piped stream.

NEW YORK STATE DEPARTMENT OF CONSERVATION-MAPPED WETLANDS

NYSDEC wetland maps do not indicate the presence of freshwater or tidal wetlands within the study area.

NATURAL RESOURCES CONSERVATION SERVICE -MAPPED SOILS

Within the study area, the soil is mapped as "Ue – Udorthents, sandy," "Ud – Udorthents, loamy," and "Ur – Urban land" by NRCS (see **Figure 3**), none of which are identified as hydric by NRCS.

ONSITE DELINEATION

One wetland (Wetland B) and one ephemeral stream (Stream A) were delineated on September 8, 2020 within the study area (see **Figure 6**). The wetland boundary was marked with flags B1 to B8, while the stream boundary was marked with flags A1 to A19.

STREAM A

Stream A is an ephemeral stream originating from the western edge of the existing railyard and extending northwest under the existing Livingston Avenue Bridge and flowing into the Hudson River (see **Figure 5a**, **Photographs 1 & 2 and Figure 5b, Photograph 3**). The hydric soils and hydrology indicators of Stream A, as well as the vegetation, are described below.

[2] Wetland/upland statuses for plant species include Obligate (OBL; occurring in wetlands greater than or equal to 99 percent of the time), Facultative Wetland (FACW; occurring in wetlands between 67 and 99 percent of the time), Facultative (FAC; occurring in wetlands between 34 and 66 percent of the time), Facultative Upland (FACU; occurring in wetlands between 1 and 33 percent of the time), and Upland (UPL; occurring in wetlands less than or equal to 1 percent of the time). Dominant species indicative of wetlands include species rated as OBL, FACW, and FAC.

The Data Form for Stream A depicts the dominant species associated with this ephemeral stream. These species include box elder (*Acer negundo*) (FAC) in the tree and sapling/shrub layers, white snakeroot (*Ageratina altissima*) (FACU) in the herbaceous layer, and Asiatic bittersweet (*Celastrus orbiculatus*) (UPL) in the woody vine layer. The vegetation does not meet criteria of the dominance test or prevalence index hydrophytic vegetation indicators; therefore, hydrophytic vegetation is not present.

Soil samples from this stream meet the criteria of "A11 Depleted Below Dark Surface." The primary hydrology indicators are "B3 Drift Deposits" and "B4 Algal Mat or Crust." The secondary hydrology indicators are "B6 Surface Soil Cracks" and "B10 Drainage Patterns" (see Data Form "Stream A"). A clear ordinary high water (OHW) line or silt on vegetation were not observed during the wetland delineation. Stream A is hydrologically connected to the Hudson River.

WETLAND B

Wetland B is an isolated freshwater wetland located north of the existing Livingston Avenue Bridge (see **Figure 5b**, **Photograph 4** and **Figure 6**). The hydric soils, hydrology, and hydrophytic vegetation of Wetland B are described below.

The Data Form for Wetland B depicts the dominant species associated with this wetland. The only dominant species is Japanese stiltgrass (*Microstegium vimineum*) (FAC) in the herbaceous layer.

Soil samples from this wetland meet the criteria of "A11 Depleted Below Dark Surface." The primary hydrology indicators are "A1 Surface Water" to a depth of 3 inches, "A3 Saturation" at the soil surface, "B8 Sparsely Vegetated Concave Surface," and "C7 Thin Muck Surface." The secondary hydrology indicator is "D3 Shallow Aquitard" (see Data Form "Wetland B"). Wetland B is hydrologically isolated from any Traditional Navigable Water (TNW) or tributary of a TNW.

UPLAND

The upland adjacent to Stream A and Wetland B is best described as a disturbed successional southern hardwoods forest. Vegetation, soils, and hydrology were characterized west of Wetland B near wetland flag B1. The dominant vegetation within the sampling area were tree of heaven (*Ailanthus altissima*) (UPL) and black locust (*Robinia pseudoacacia*) (FACU) in the tree layer, slippery elm (*Ulmus rubra*) (FAC) in the sapling/shrub layer, white snakeroot (FACU) in the herbaceous layer, and Asiatic bittersweet (UPL) and fox grape (*Vitis labrusca*) in the woody vine layer. There were no wetland hydrology or hydric soil indicators within this area (see Data Form "Upland").

CONCLUSIONS

As described above, one isolated freshwater wetland (Wetlands B) and one ephemeral stream (Stream A) were delineated in the study area per the USACE wetland delineation methodology. It is recommended that the delineated boundaries be confirmed by USACE during an onsite field inspection and a "jurisdictional determination" (JD) be requested. It is likely that Stream A and Wetland B will be found to be non-jurisdictional. Once the wetland/waters boundaries are confirmed by USACE, they are valid for a period of five (5) years.

Figures:

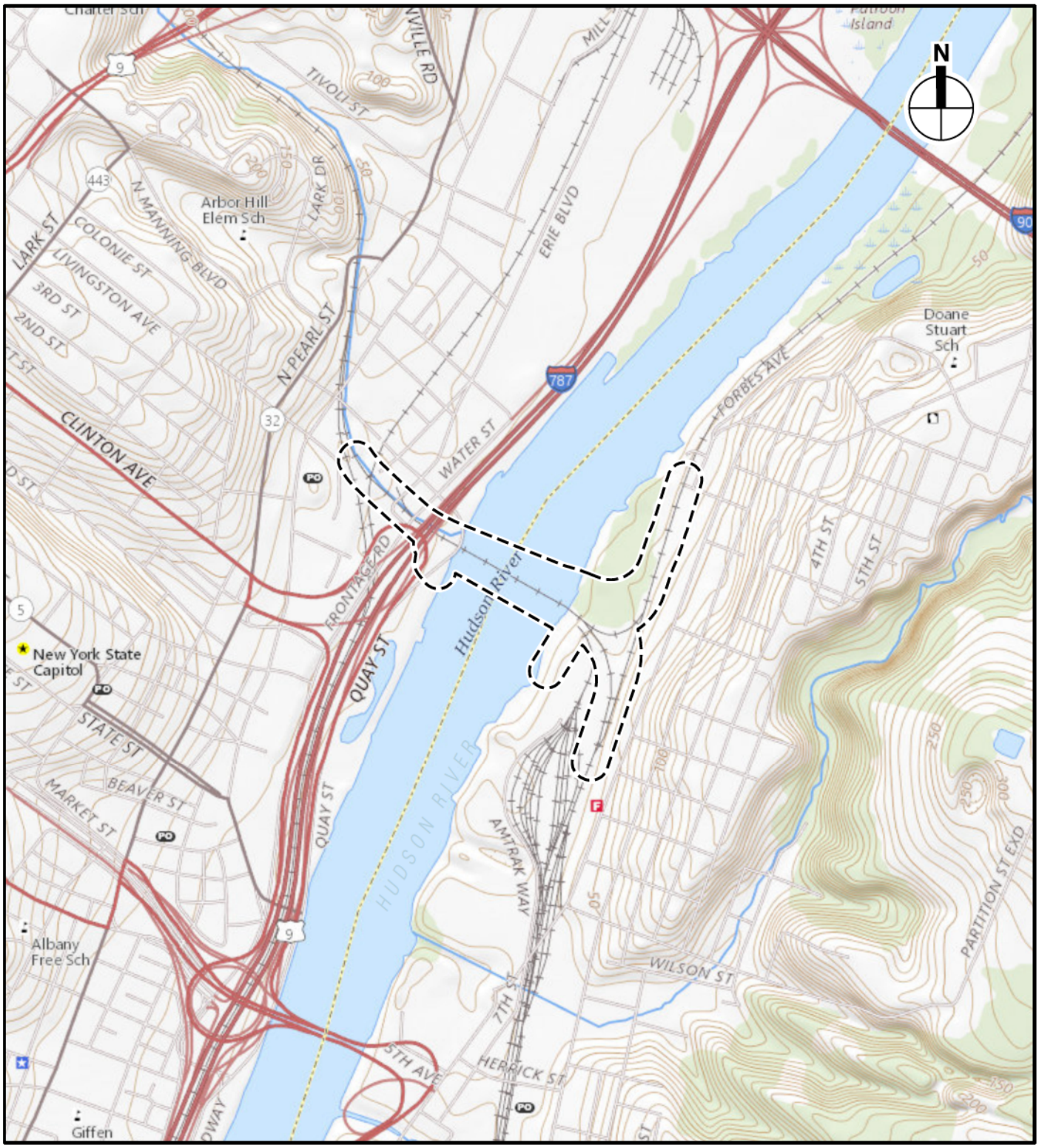
1. USGS Topographic Map
2. NWI Wetlands
3. NRCS Soils
4. Photograph Key
5. Representative Site Photographs
6. Delineated Wetland Boundaries Drawings

Attachment:

USACE Wetland Determination Forms

FIGURES

9.23.20



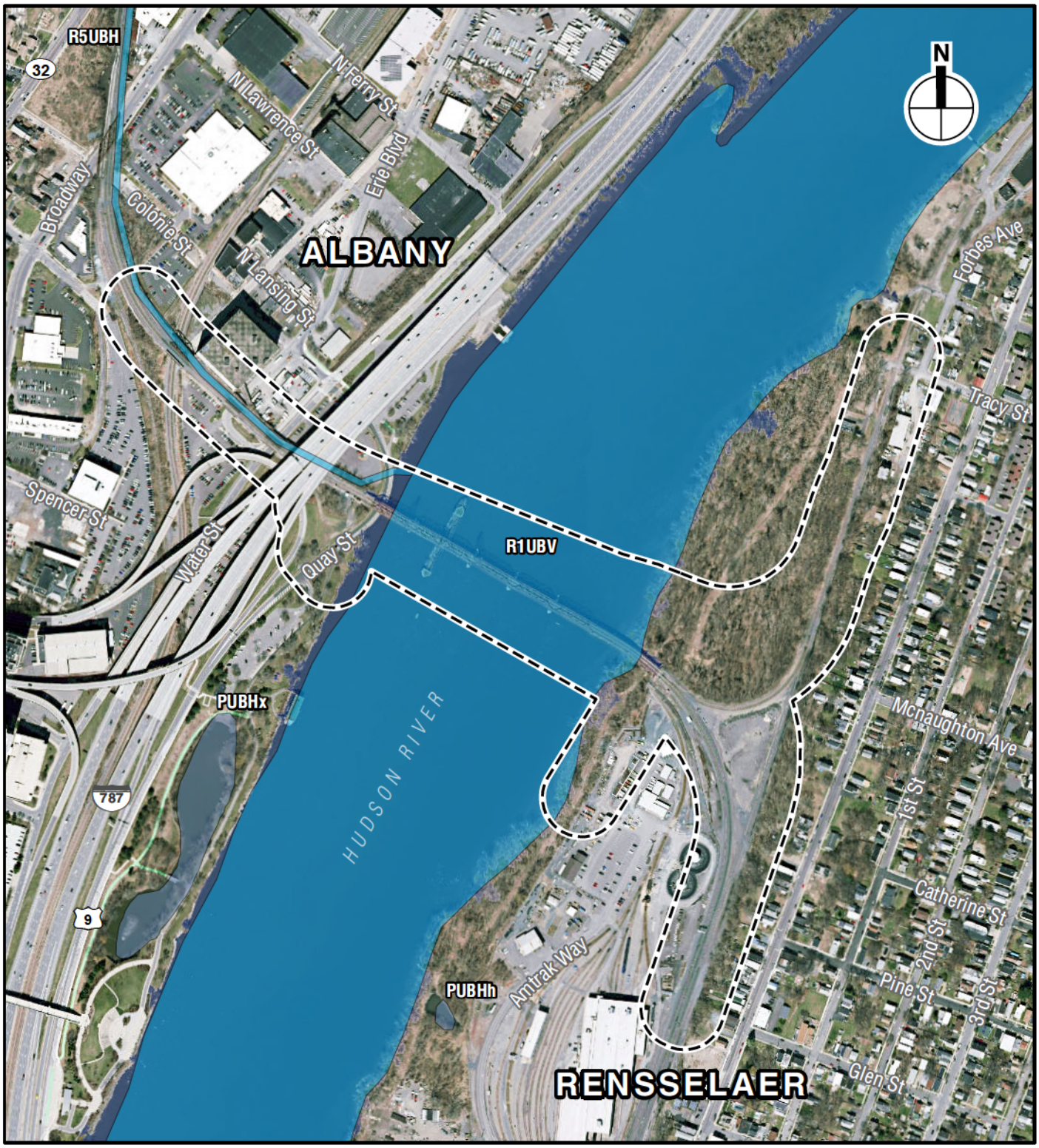
Study Area

Approximate coordinates of Study Area:
73°44'29"W 42°39'15"N

NYSDOT LIVINGSTON AVENUE BRIDGE

USGS Topographic Map
Figure 1

9.23.20



Study Area

NWI Wetlands

Freshwater Pond (PUB, PAB)

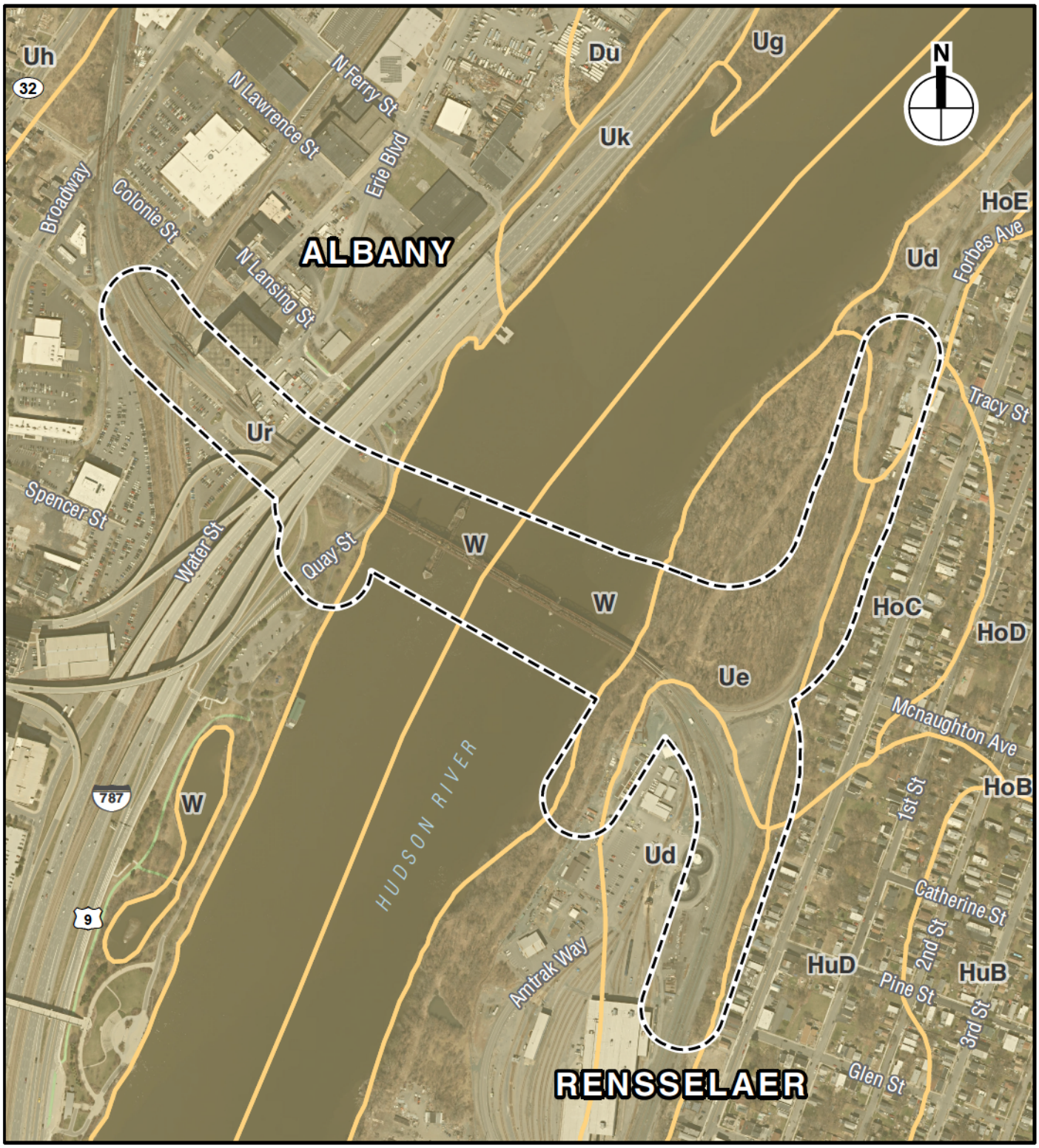
Riverine (R)

NWI Wetlands

Figure 2

NYSDOT LIVINGSTON AVENUE BRIDGE

9.23.20



Study Area

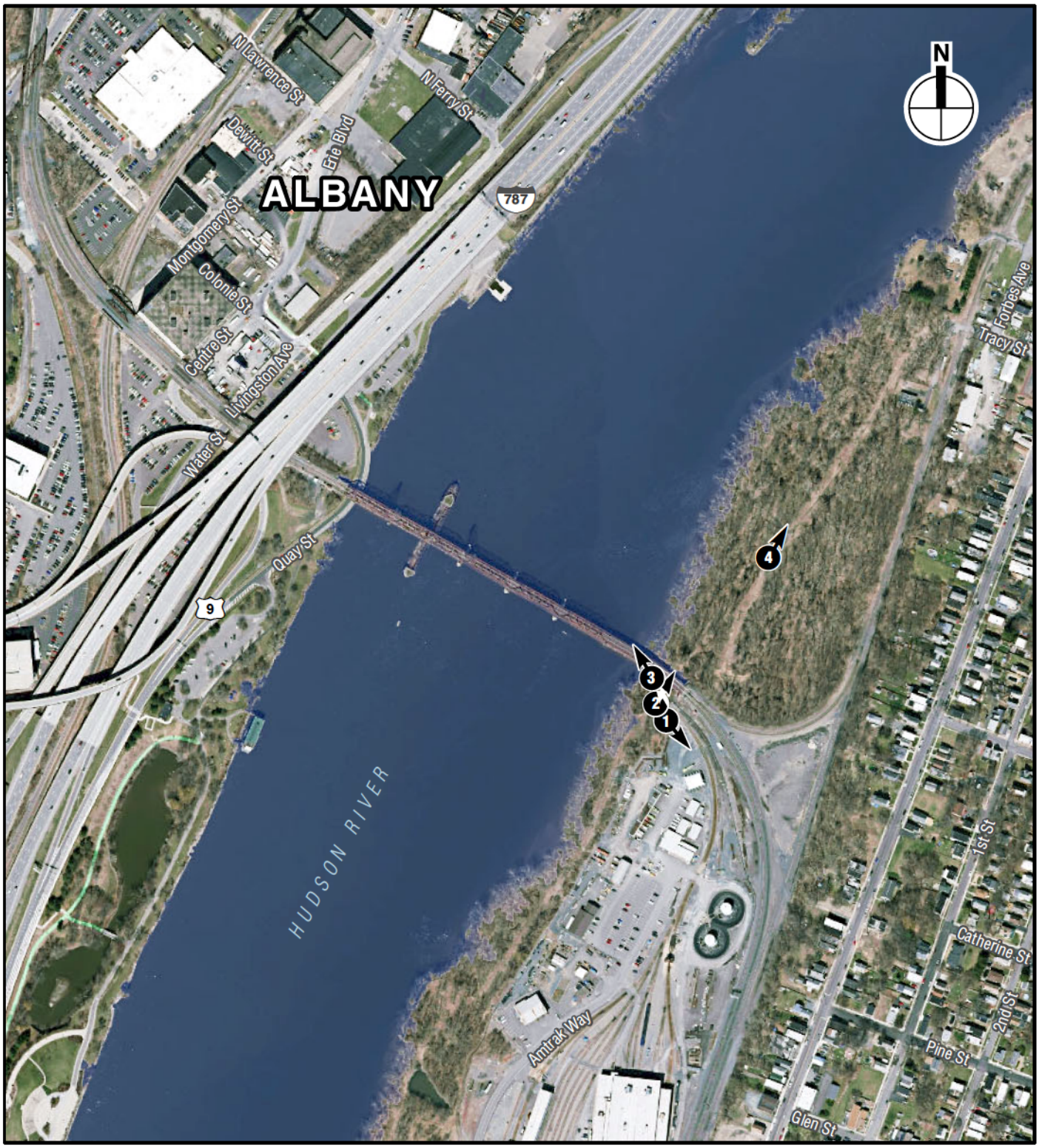
Soils

Soil Symbol

Du - Dumps
HoB - Hoosic gravelly sandy loam, 3 to 8 percent slopes
HoC - Hoosic gravelly sandy loam, rolling
HoD - Hoosic gravelly sandy loam, hilly
HoE - Hoosic gravelly sandy loam, steep
HuB - Hudson silt loam, 3 to 8 percent slopes
HuD - Hudson silt loam, hilly
Ud - Udipsamments, smoothed
Ue - Udipsamments, dredged
Ug - Udorthents, loamy
Uh - Udorthents, clayey-Urban land complex
Uk - Udorthents, loamy-Urban land complex
Ur - Urban land
W - Water

NRCS Soils
Figure 3

9.23.20



1 *View Direction and Reference Number*

Photograph Key
Figure 4

Stream A near the existing railyard, facing southeast **1**

Stream A near the existing railyard, facing north **2**

Representative Site Photographs

Figure 5a

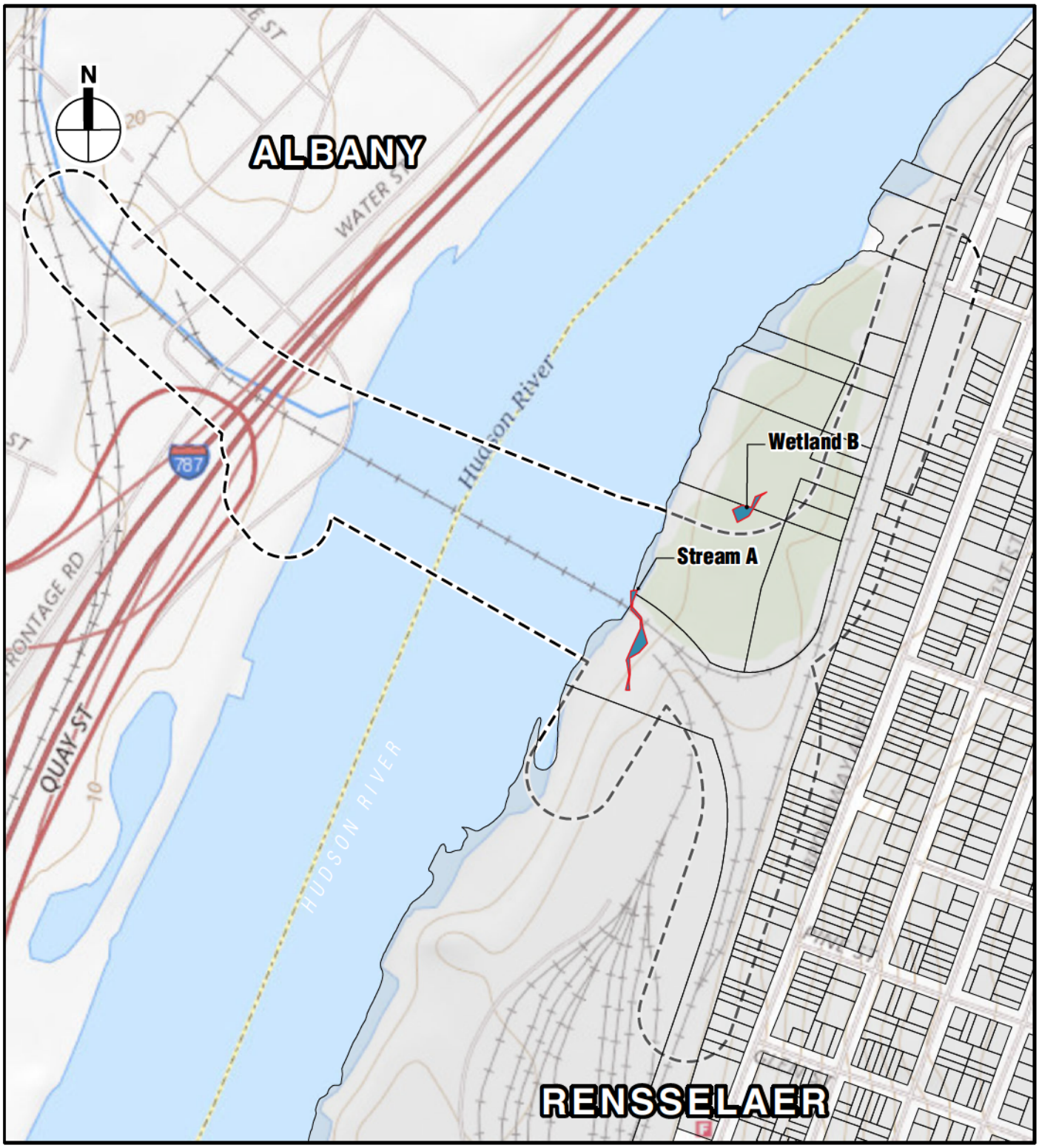
Stream A near the existing Livingston Avenue Bridge, facing west **3**

Wetland B with duckweed (Lemna sp.), facing north **4**

Representative Site Photographs

Figure 5b

9.30.20



Study Area

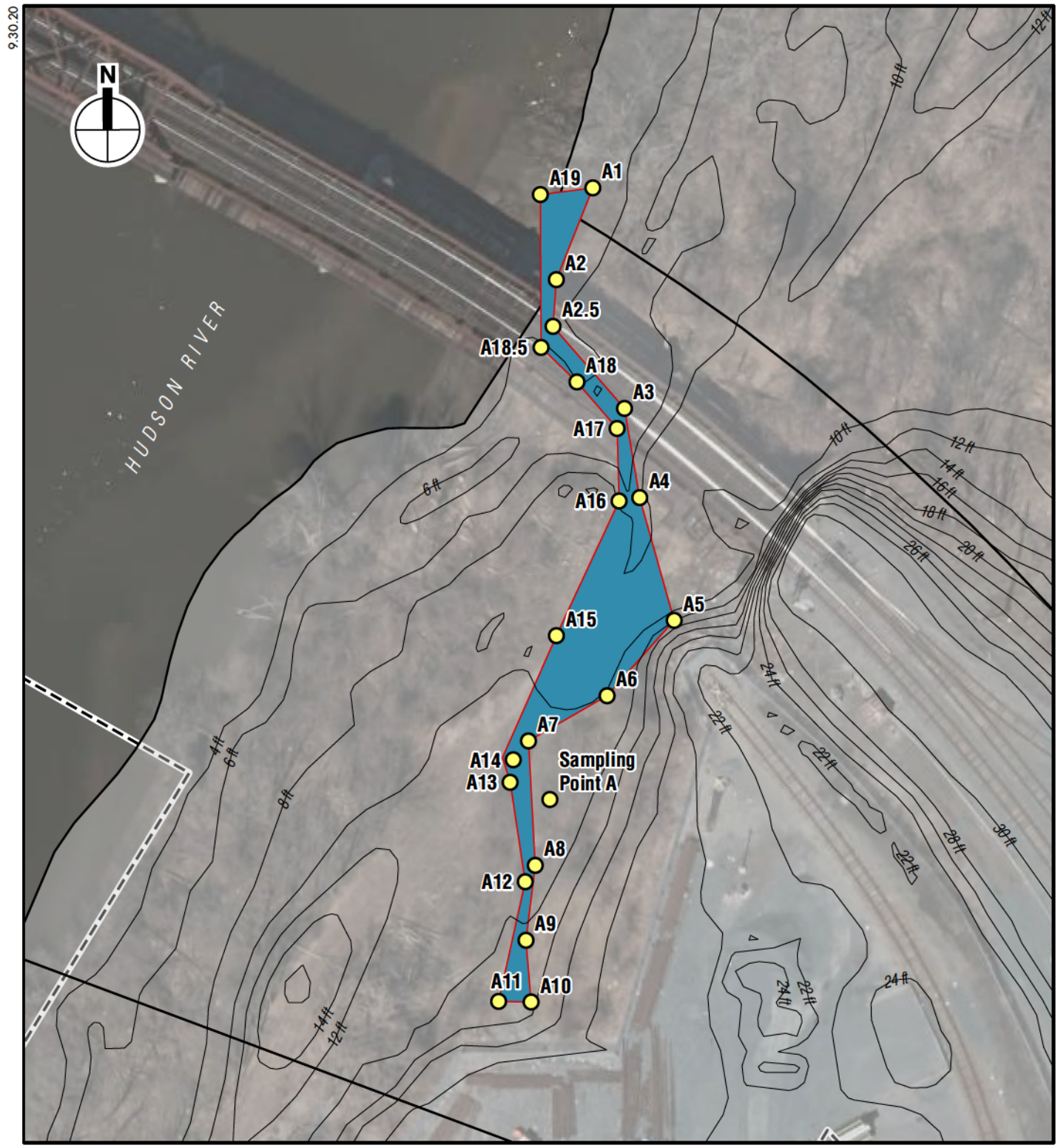
Stream/Wetland

0 500 FEET

Delineated Area	Acreage
Stream A	0.11
Wetland B	0.07

Delineated Wetland Boundaries Drawing

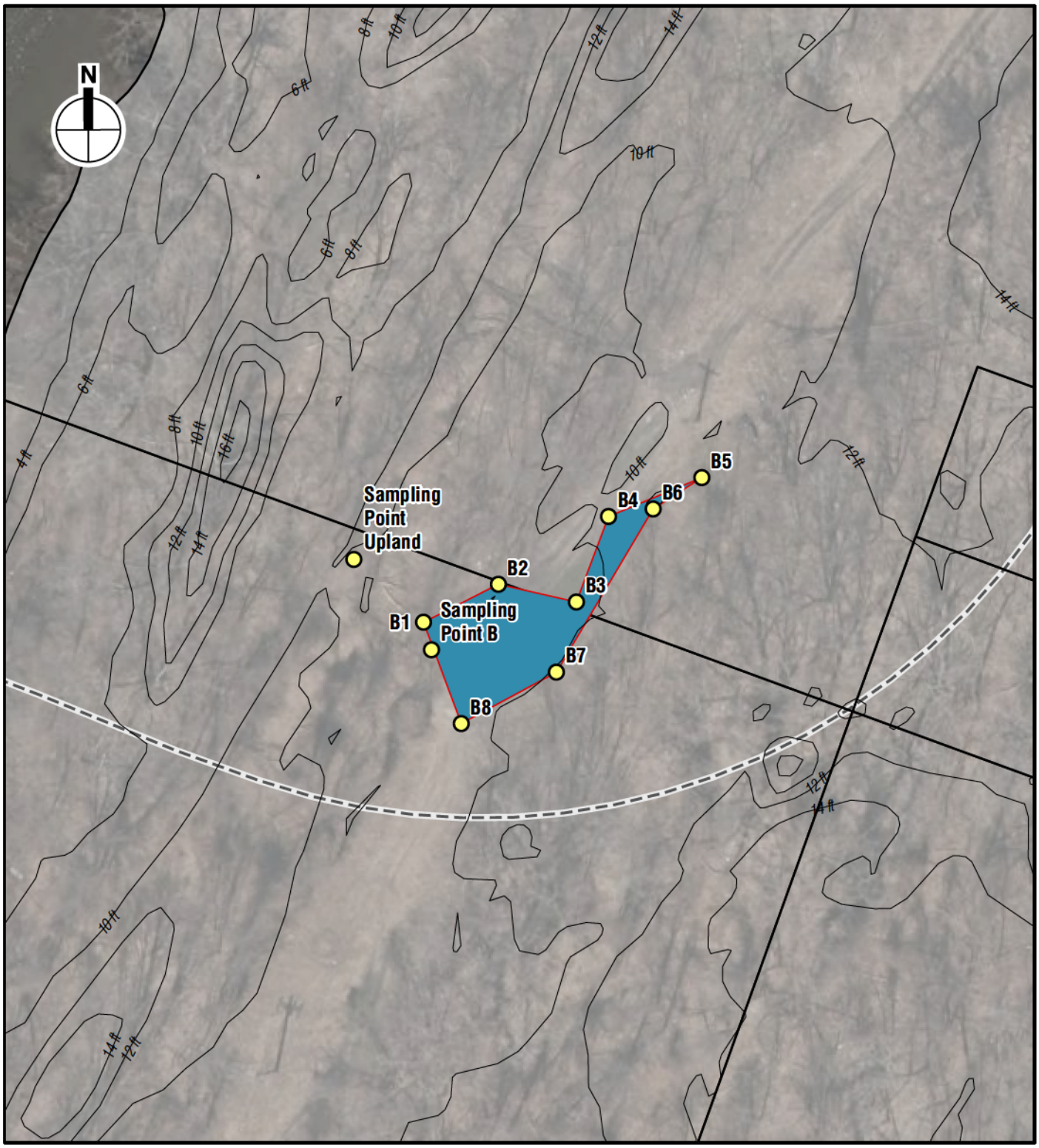
Figure 6a



Delineated Wetland Boundaries Drawing

Figure 6b

9.30.20



Delineated Wetland Boundaries Drawing

Figure 6c

USACE WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Livingston Avenue Bridge, PIN 1935.4913 City/County: Rensselaer/Rensselaer County Sampling Date: 9/8/2020

Applicant/Owner: New York State Department of Transportation/Amtrak State: NY Sampling Point: Wetland A

Investigator(s): Jesse Moore and Jeremy Law Section, Township, Range:

Landform (hillslope, terrace, etc.): River Valley Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR R Lat: 42.652910 Long: -73.739644 Datum: WGS 1984

Soil Map Unit Name: Ue – Udorthents, sandy 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N 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 X	No			

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

Sampling point located between wetland flags A-7 and A-8.

Intermittent stream is associated with runoff from the adjacent Amtrak property.

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)
- X Drift Deposits (B3)
- X 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)

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

Field Observations:

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

Runoff from the adjacent Amtrak property drains to a 50-foot long channel that begins approximately 4 feet wide and widens to approximately 15 feet wide, then narrows again and flows to the Hudson River.

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland A

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	15	Y	FAC
2. *Robinia pseudoacacia*	4	N	FACU
3.			
4.			
5.			
6.			
7.			
	19	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	60	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Ageratina altissima*	7	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	7	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Celastrus orbiculatus*	5	Y	UPL
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x1=	0
FACW species	0	x2=	0
FAC species	75	x3=	225
FACU species	11	x4=	44
UPL species	5	x5=	25
Column Totals:	91 (A)		294 (B)

Prevalence Index = B/A = 3.23

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: Wetland A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Loamy Clay	
8-12	10 YR 4/1	95	10YR 5/6	5	C	M	Loamy Clay	
12-18	10YR 2/1	100					Sandy Clay	Gravel and asphalt present

[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) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ 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)

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**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ 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 (TF12)
- ___ Other (explain in Remarks)

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

Field Observations:
Type: _____
Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Livingston Avenue Bridge, PIN 1935.4913 City/County: Rensselaer/Rensselaer County Sampling Date: 9/8/2020

Applicant/Owner: New York State Department of Transportation/Amtrak State: NY Sampling Point: Wetland B

Investigator(s): Jesse Moore and Jeremy Law Section, Township, Range:

Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 42.654301 Long: -73.738376 Datum: WGS 1984

Soil Map Unit Name: Ue – Udorthents, sandy 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Sampling point located adjacent to wetland flag B-1.

The shallow pond was covered in duckweed (*Lemna* sp.).

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X 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)
- X 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)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	3
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present?	Yes	X	No		Depth (inches):	0

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland B

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Microstegium vimineum*	95	Y	FAC
2. *Pilea pumila*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: Wetland B

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10 YR 3/1	100					Mucky Loam	
2-7	10 YR 3/1	100					Sandy Clay	
7-14	10 YR 4/1	96	10YR 5/8	4	C	M	Sandy Clay	Gravel present

[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) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ 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)

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**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ 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 (TF12)
- ___ Other (explain in Remarks)

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

Field Observations:

Type: _____

Depth (inches): _____

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

Remarks:

Restrictive layer at 2".

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Livingston Avenue Bridge, PIN 1935.4913 City/County: Rensselear/Rensselaer County Sampling Date: 9/8/2020

Applicant/Owner: New York State Department of Transportation/Amtrak State: NY Sampling Point: Upland

Investigator(s): Jesse Moore and Jeremy Law Section, Township, Range:

Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 42.654403 Long: -73.738494 Datum: WGS 1984

Soil Map Unit Name: Ue – Urdorthents, sandy 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 ____	No X			
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

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

Sampling point located to the west of wetland flag B-1.

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?	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: Upland

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Robinia pseudoacacia*	25	Y	FACU
2. *Ailanthus altissima*	20	Y	UPL
3. *Acer negundo*	5	N	FAC
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Ulmus rubra*	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Ageratina altissima*	30	Y	FACU
2. *Celastrus orbiculatus*	5	N	UPL
3. *Ailanthus altissima*	3	N	UPL
4. *Pilea pumila*	3	N	FACW
5. *Alliaria petiolata*	3	N	FACU
6. *Oxalis dillenii*	1	N	FACU
7.			
8.			
9..			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Celastrus orbiculatus*	20	Y	UPL
2. *Vitis labrusca*	5	Y	FACU
3.			
4.			
	25	=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.67 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL Sampling Point: Upland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR 3/2	100					loam	Refusal at 7 inches

[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) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
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Indicators for Problematic Hydric Soils[3]:

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- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ 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 (TF12)
- ___ Other (explain in Remarks)

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

Field Observations:
Type: _____
Depth (inches): _____

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

Remarks:

Refusal at 7".

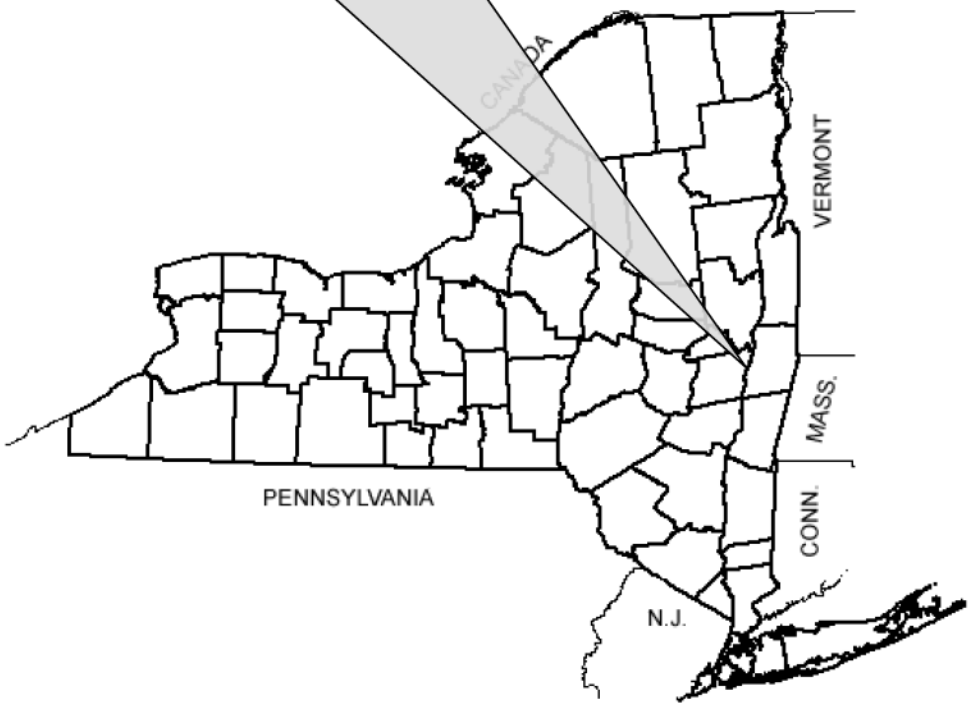
March 2011 Wetland Delineation Report

TRANSPORTATION

WETLAND DELINEATION REPORT

March 2011

Rail Project
P.I.N. 1935.49.101, BIN 7092890
Livingston Avenue Railroad Bridge
Cities of Albany and Rensselaer
Albany and Rensselaer Counties



PROJECT REPORT

U.S. Department of Transportation Federal Railroad Administration

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
ANDREW M. CUOMO, Governor JOAN MCDONALD, Commissioner

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

The project consists of studying rehabilitation and replacement alternatives for the Livingston Avenue Railroad Bridge over the Hudson River between the Cities of Albany and Rensselaer, New York. The bridge is part of the Empire Corridor railway system. The project limit on the Albany side of the Hudson is North Pearl Street. The project limits on the Rensselaer side are Partition Street to the south and Tracy Street to the north.

The study area is approximately 133 acres in size. The approximate center point coordinates of the study area are Latitude 42º 39' 15.2"N; Longitude 73º 44' 29.2"W. Please refer to the Project Location Map (Figure 1) that is located in Appendix A.

This report describes the wetlands and streams that occur within the study area. All portions of the study area on the east side of the river were investigated. The western portion of the study area consists of a broad area of downtown Albany. Every effort was made to investigate the area from local roads and streets. The mainline tracks and adjacent areas were investigated as part of the Schenectady-Albany double track project. However, there were some areas associated with sidings that could not be investigated due to lack of access. Given the highly developed condition of this area we do not believe any significant areas of wetland are present.

CHA was retained by the NYS Department of Transportation to delineate and describe the wetlands of the study area that are regulated by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and the New York State Department of Environmental Conservation (NYSDEC) under Article 24 of the New York State Environmental Conservation Law. The wetland delineation was conducted on November 11, 2010.

The purpose of this report is to document the wetland boundaries and, if needed, to supplement a wetlands permit application to the USACE and the NYSDEC. The report includes a general description of the study area, its ecology and wetlands, and is complemented by field data sheets and photographs, which are presented in the Appendices.

2.0 AGENCY RESOURCE INFORMATION

Prior to visiting the study area, various maps and other sources of background information were reviewed. The maps are provided in Appendix A. Resources reviewed include the:

- United States Geological Survey (USGS) 7.5 minute topographic maps (Troy South USGS Quadrangle, Figure 1),
- New York State Department of Environmental Conservation (NYSDEC) New York State Freshwater Wetlands Maps (Troy South USGS Quadrangle, Figure 2),
- United States Department of the Interior, Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) maps (Troy South USGS Quadrangle, Figure 2),
- U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic (SSURGO) database for Albany and Rensselaer Counties (dated December 11, 2006) (Figure 3).
- Natural Resources Conservation Service Web Soil Survey of Albany County, Version 7 dated February 5, 2010 and Rensselaer County, Version 7 dated February 5, 2010.
- United States Department of Agriculture, Soil Conservation Service *Soil Survey of Rensselaer County, New York* issued January 1988 and *Soil Survey of Albany County, New York* issued June 1992.

3.0 METHODOLOGY

In accordance with the procedures provided in the 1987 Corps of Engineers Wetland Delineation Manual and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (October 2009)[1], and based on the characteristics of the project, the "Routine Wetland Determination" method was used.

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), indicators of 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. Wetland data points and an upland data points were recorded to show the difference between the wetland and upland habitats. Field data sheets corresponding to each point can be found in Appendix B. The data point locations are illustrated on the Wetland Delineation Map provided in Appendix D.

[1] U.S. Army Corps of Engineers. 2009. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, ed. J. S. Wakley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Vegetative communities are described according to *Ecological Communities of New York State, Second Edition* (Edinger 2002)[2] and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979)[3].

Representative photographs of the wetlands and their adjacent upland areas were taken and are provided in Appendix C. The photo locations are illustrated on the Wetland Delineation Map provided in Appendix D.

4.0 GENERAL SITE DESCRIPTION

The study area consists of the existing railroad bridge and portions of the railway and surrounding lands on the east and west sides of the Hudson River in the vicinity of the bridge.

Eleven vegetative community types were identified within the study area and are described according to Edinger 2002. The wetlands are also described according to Cowardin 1979. The vegetative communities identified within the study area include: railroad, urban vacant lot, unpaved road/path, mowed lawn with trees, successional old field, successional northern hardwoods, reedgrass/purple loosestrife marsh (PEM1), vernal pool (PEMC), red maple hardwood swamp (PFO1), ephemeral stream (R4UB1) and unconfined river (R1UBV).

Two wetland systems were identified within the study area. These included a small vernal pool (PEMC) and adjacent forested wetland (delineated Wetland B) (PFO1), and a small area of reedgrass/purple loosestrife marsh (PEM1). The reedgrass/purple loosestrife marsh was not delineated because it occurs along a railroad track siding owned by others. Access was not available. Two riverine systems were identified: a small ephemeral stream (R4UB1) delineated as Stream A, and the Hudson River (R1UBV). The banks of the Hudson River were not delineated since there were no adjacent wetland areas. Jurisdictional limits will be defined by available guage data, taking into consideration high tide.

[2] Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors), 2002. *Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review)*. New York Natural Heritage Program, New York State Department of Environmental Conservation. Albany, NY.

[3] 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.

Based on review of the NYSDEC Freshwater Wetlands map (Shown on Figure 2), no state-regulated wetlands occur within or adjacent to the study area

The NWI map (Shown on Figure 2) identifies the Hudson River as a R1UBV (Riverine, Tidal, Unconsolidated Bottom, Permanent-Tidal).

4.1 VEGETATION

The vegetative communities as they occur within the study area are described below. The Vegetative Communities Map provided in Appendix E illustrates the extent of each community type throughout the study area.

4.1.1 Terrestrial (Upland) Communities

4.1.1.1 Railroad

Edinger describes this community type as a permanent road having a line of steel rails fixed to wood ties and laid on a gravel roadbed that provides a track for cars or equipment drawn by locomotives or propelled by self-contained motors. There may be sparse vegetation rooted in the gravel substrate. The railroad right of way may be maintained by mowing or herbicide spraying.

The railroad of the study area resembles Edinger's description. Vegetation growing on the gravel substrate consisted of grasses and forbs common to the area. Species commonly observed include common yarrow (*Achillea millefolium*), white sweetclover (*Melilotus alba*), common mullein (*Verbascum thapsus*), foxtail grass (*Setaria pumila*) and common mugwort (*Artemisia vulgaris*).

4.1.1.2 Urban Vacant Lot

Edinger describes this community type as an open site in a developed, urban area that has been cleared either for construction or following the demolition of a building. Vegetation may be sparse, with large areas of exposed soil, and often with rubble or other debris.

An urban vacant lot occurs on Colonie Street on the Albany side of the study area. This lot resembles Edinger's description. The ground was recently disturbed and sparsely vegetated with forbs and grasses common to the area.

4.1.1.3 Unpaved Road/Path

Edinger describes this community type as a sparsely vegetated road or pathway of gravel, bare soil, or bedrock outcrop. These roads or pathways are maintained by regular trampling or scraping of the land surface. The substrate consists of the soil or parent material at the site, which may be modified by the addition of local organic material (woodchips, logs, etc.) or sand and gravel.

The unpaved road/path communities of the study area resemble Edinger's description. The unpaved roads are maintained by all-terrain vehicle and truck traffic. There are stunted grasses and forbs present on the sides and in the center of the road where vehicle tires typically do not disturb. Species common to these areas include common blue violet (*Viola sororia*), goldenrods (*Solidago spp.*), white wood aster (*Eurybia divaricata*), Virginia strawberry (*Fragaria virginiana*) and garlic mustard (*Alliaria petiolata*).

4.1.1.4 Mowed Lawn with Trees

Edinger describes this community type as residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and it is shaded by at least 30% cover by trees. Ornamental and/or native shrubs may be present, usually with less than 50% cover. The groundcover is maintained by mowing.

The mowed lawn with trees communities of the study area resemble Edinger's description. They occur on the Albany side of the study area. The portion of the Corning Preserve (Albany) that occurs within the study area is dominated by this community type. Other portions of this community type are associated with commercial properties.

4.1.1.5 Successional Old Field

Edinger describes this community type as a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned.

The successional old field communities occur as small fragmented habitats between transportation corridors on the Albany side and as small patches within the large forested area on the Rensselaer side. These areas were dominated by Canada goldenrod (*Solidago canadensis*), Japanese knotweed (*Polygonum cuspidatum*), common blue violet and other grasses and forbs common to the area.

4.1.1.6 Successional Southern Hardwoods

Edinger describes this community as a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed.

The successional southern hardwoods of the study area are dominated by tree species including cottonwood (*Populus deltoides*), tree of heaven (*Ailanthus altissima*), American elm (*Ulmus americana*), boxelder (*Acer negundo*), black locust (*Robinia pseudoacacia*) and Norway maple (*Acer platinoides*). Other trees observed but not dominant include mulberry (*Morus sp.*), basswood (*Tilia americana*) and staghorn sumac (*Rhus typhina*). Shrubs commonly observed include buckthorn (*Rhamnus cathartica*), multiflora rose (*Rosa multiflora*), red raspberry (*Rubus idaeus*) and young growth of the trees present. The exotic and invasive vine Oriental bittersweet (*Celastrus orbiculatus*) is present in many areas. Riverbank grape (*Vitis riparia*) vines were also commonly observed. Herbaceous species observed include goldenrods, white wood aster, Virginia strawberry, common blue violet and garlic mustard.

4.1.2 Palustrine (Wetland) Communities

4.1.2.1 Reedgrass/Purple Loosestrife Marsh (PEM1)

Edinger describes this community as a marsh that has been disturbed by draining, filling, road salts, etc. in which reedgrass (*Phragmites australis*) or purple loosestrife (*Lythrum salicaria*) has become dominant. This community is common along highways and railroads.

Within the study area, this community occurs in a slight topographic depression along a railbed in the City of Albany. This wetland was observed to be dominated by *Phragmites australis*.

4.1.2.2 Vernal Pool (PEMC)

Edinger describes this community as an aquatic community of one or more associated intermittently to ephemerally ponded, small, shallow depressions typically within an *upland* forest, but also within various palustrine and other terrestrial communities. Vernal pools are typically flooded in spring or after a heavy rainfall, but are usually dry during summer. Many vernal pools are filled again in autumn. Substrate is typically dense leaf litter over hydric soils.

The vernal pool of the study area occurs in a depression along one of the unpaved road/paths. This pool is approximately 6 to 12 inches deep and its substrate is covered with leaves from the

surrounding trees. Vegetation within the pool was limited to duckweed (*Lemna minor*) floating on the water surface and a few random devil's beggartick (*Bidens frondosa*) plants along the edges.

4.1.2.3 Red Maple Hardwood Swamp (PFO1)

Edinger describes this community as a hardwood swamp that occurs in poorly drained depressions, usually on inorganic soils. In any one stand red maple (*Acer rubrum*) is either the only canopy dominant, or it is codominant with one or more hardwoods including ashes (*Fraxinus pennsylvanica, F. nigra,* and *F. americana*), elms (*Ulmus Americana* and *U. rubra*), yellow birch (*Betula alleghaniensis*), and swamp white oak (*Quercus bicolor*). Other trees with low percent cover may include butternut (*Juglans cinerea*), bitternut hickory (*Carya cordiformis*), black gum (*Nyssa sylvatica*), ironwood (*Carpinus caroliniana*), and white pine (*Pinus strobus*). The shrub layer is usually well-developed and may be quite dense. The herbaceous layer may be quite diverse and is often dominated by ferns.

The red maple hardwood swamp of the study area is a small patch of forested wetland connected to the vernal pool. This wetland is in an early stage of succession and is dominated by red maple with jewelweed (*Impatiens* spp.) groundcover.

4.1.3 Riverine (stream) Communities

4.1.3.1 Intermittent Stream (R4UB1)

Edinger describes this as the community of a small, intermittent or ephemeral, streambed in the uppermost segments of stream systems where water flows only during the spring or after a heavy rain and often remains longer, ponded in isolated pools. These streams typically have a moderate to steep gradient and hydric soils.

The ephemeral stream of the study area originates from upland, and after a short distance, connects to the Hudson River. This stream is probably better described as a gully that has resulted from heavy rainfall. It likely only has water flow during and shortly after rainfall and seasonal runoff events.

4.1.3.2 Unconfined River (R1UBV)

Edinger describes this as the aquatic community of large, quiet, base level sections of streams with a very low gradient. These streams are typically dominated by runs with interspersed pool sections and a few short or no distinct riffles. Unconfined rivers usually have clearly distinguished meanders (i.e. high sinuosity) and well developed levees, are in unconfined valleys and are most typical of the lowest reaches of stream segments.

The Hudson River is the unconfined river of the study area. It occurs in an unconfined valley, is dominated by runs, and is the lowest reach of stream segments. Its substrate along the banks of the study area is sand. It is surrounded by forest in many areas. Areas that are not forested typically are developed. This section of the Hudson is tidal.

4.2 SOILS

Soils mapping and descriptions were obtained from the sources previously listed in Section 2 of this report. This information was used in conjunction with on-site soil sampling to determine the presence of hydric soils. The following soils are mapped as occurring within the study area:

- Hoosic gravelly sandy loam, rolling (HoC) – This deep and somewhat excessively drained soil formed in glacial outwash that has a high content of sand and gravel. It occurs on deltas, outwash plains and terraces. Depth to the restrictive feature and the water table is more than 80 inches.

- Hudson silt loam, hilly (HuD) – this moderately well drained soil occurs on lake plains. Parent material is clayey and silty glaciolacustrine deposits. Depth to water table is about 18 to 24 inches and depth to restrictive feature is more than 80 inches. Available water capacity is high.

- Udipsamments, smoothed (Ud) – This map unit consists of nearly level to very steep areas of disturbed sandy soils. These soils are moderately well drained to somewhat excessively drained. The seasonal high water table is generally at a depth of greater than 6 feet. In some areas it is at a depth of 4 feet. Depth to bedrock is more than 6 feet.

- Udorthents, sandy (Ue) – These deep, excessively drained sandy soils consist of material that was dredged from the Hudson River. In places, the material is piled into small knolls and knobs. Depth to the restrictive feature and the water table is more than 80 inches.

- Udorthents, clayey-Urban land complex (Uh) – This mapping unit consists of very deep and moderately well drained clayey soil and urban land. Depth to restrictive feature is more than 80 inches. Depth to water table is about 6 to 18 inches. Available water capacity is moderate (about 8.2 inches).

- Urban land (Ur) - This mapping unit is described as consisting of nearly level to strongly sloping areas where asphalt, concrete, buildings, or other impervious materials cover more than 85 percent of the surface. The soils have been disturbed in many areas.

- Water (W) - Depth to restrictive feature and water table is more than 80 inches.

4.3 HYDROLOGY

Hydrology of the wetlands and streams within the study area is provided by a combination of groundwater input, runoff from surrounding areas, direct precipitation, and in some areas floodwaters from the Hudson River. The hydrology of each delineated feature is described in detail in the next section.

The study area occurs within Middle Hudson Watershed (HUC 02020006). This watershed occurs within the Hudson River Basin. The entire study area drains to the Hudson River.

Water quality of surface waters in New York State are classified by the NYSDEC as "A," "B," "C," or "D," with special classifications for water supply sources. A "T" used with the classification indicates the stream supports, or may support, a trout population. Water quality standards are also provided. All surface waters with a Classification and/or a Standard of C(T) or better are regulated by the State. In addition, all navigable waters are regulated by the State.

The NYSDEC has classified the Hudson River in the vicinity of the study area as Class C, Standard C. It is a navigable waterway.

5.0 DISCUSSION OF WETLAND BOUNDARIES

Based on the methodology discussed in Section 3.0 of this report, one wetland system (Wetland B) was identified and delineated within the study area. One stream, Stream A, was also delineated. An additional potential wetland was observed but not delineated because of access issues. The approximate center point coordinates of these features within the study area are listed in Appendix F.

Surveyed wetland and stream channel boundaries are provided in Appendix D – Wetland Delineation Map.

The following table provides the community types, dominant species and characteristics of the wetland and streams of the study area.

Table 1

Vegetative Communities and Species Compositions

Wetland ID	Stream ID	Community Type	Dominant Vegetation & Characteristics	Wetland Area & Stream Length w/in JD Boundary
--	A	Ephemeral Stream (R4UB1)	BFW[4] = 3'; BFD[5] = 20"; no water at time of survey; originates from upland; stream is a scour channel; no fish or aquatic macroinvertebrates present or likely; sandy gravel with boulders substrate; woody debris within channel; no vegetation within channel; shaded from trees, shrubs and herbs that surround the channel; riparian area is flat – to the south is densely-vegetated (successional northern hardwoods) and to the north is sparsely-vegetated (shaded by the bridge); drains to the Hudson at bridge pier.	72 linear feet
B	--	Vernal Pool (PEMC)	Shallow water depths (~6 to 12 inches). Vegetation is limited to lesser duckweed (*Lemna minor*) floating on the water and a few scattered devil's beggartick (*Bidens frondosa*) along the pool edges.	0.02 acres
		Red Maple Hardwood Swamp (PFO1)	Young red maple (*Acer rubrum*) trees with jewelweed (*Impatiens sp.*) groundcover.	0.04 acres
not delineated	--	Reedgrass/Purple Loosestrife Marsh (PEM1)	Common reed (*Phragmites australis*) has formed an almost monotypic stand in this linear wetland ditch. It was observed from a distance because of access issues so not much else is known about this wetland.	not delineated
--	Hudson River	Unconfined River (R1UBV)	BFW = ~1086'; BFD = unknown/deep; 100% run; substrate is sand; bank on the east side of the river are gradual and abut a flat forested floodplain; bank on the west side are steep/reinforced by rip rap and abut a developed area (the Corning City Preserve park, roads and parking area). Section 10 navigable waterway.	1,012 linear feet

[4] Bank full width
[5] Bank full depth

Ephemeral **Stream A** is a small, unvegetated scour channel (R4UB1) that appears to flow only during and shortly after rainfall and snowmelt events. This stream originates in upland and drains to the Hudson River. Hydric soils are not present. Its hydrology source is ephemeral (rain and snowmelt). The stream channel is unvegetated and surrounded by upland.

Wetland B occurs along an unpaved road/path and is composed of a vernal pool (PEMC) connected to a small forested wetland (PFO1) that is an early successional stage. The vernal pool is a shallow pool that occurs in a slight topographic depression. This wetland has no inlet or outlet. The vernal pool portion was inundated at the time of the survey but it is likely that it dries up during the summer months. The forested wetland appears to have seasonally saturated soils. Hydrology indicators include standing water, soils saturated at the surface, sediment deposits and water-stained leaves. Hydric gravelly clay soils are present. Hydric soil indicators include a soil matrix chroma of 1 that extends from the soil surface down past 16 inches. These are seasonally saturated and seasonally ponded soils. Vegetation in the vernal pool was limited to lesser duckweed floating on, and covering approximately 35% of the water surface. A few devil's beggartick plants were observed growing along the edges of this vernal pool. The forested wetland is dominated by young red maple trees and groundcover consists of jewelweed.

The vernal pool portion of this wetland appears to have been influenced/disturbed/made deeper by all-terrain vehicle (ATV) and truck traffic. Fringe forested wetland occurs around a portion of the vernal pool.

The **undelineated reedgrass/purple loosestrife marsh** (PEM1), within the study area, occurs within a linear wetland ditch and is dominated by common reed. This wetland was observed from a distance but appears to be a typical example of a common reed-dominated linear wetland ditch along an active railroad. Species diversity appeared to be low because of the abundance of common reed. This linear wetland ditch was likely created or altered for drainage purposes.

The Hudson River, within the study area, is a large perennial river (R1UBV) that occurs within an unconfined valley. This section of the river appears to be deep and the water is turbid. It has a sandy substrate. Its east bank is mostly forested. Its west bank is mostly developed.