WETLAND AND STREAM DELINEATION REPORT

EAST POINT ENERGY CENTER

TOWN OF SHARON

SCHOHARIE COUNTY, NEW YORK

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August 2019

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1.0 INTRODUCTION

1.1 Project Description and Purpose

East Point Energy Center, LLC, (East Point Energy Center) a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC (NEER), plans to construct a major electric generating facility, the East Point Energy Center (the Project). The proposed Project would consist of a new 50 megawatt (MW) solar facility and associated components, including a new substation. The Project is located within 9 parcels totaling approximately 1,313 acres in the Town of Sharon, Schoharie County, New York (Project Area) (see Figure 1).

1.2 Report Purpose

TRC Companies, Inc. (TRC) has conducted a wetland and stream delineation of the Project Area on behalf of East Point Energy Center on July 10–12, 2017; May 18–24, 2018; August 7–9, 2018; and April 29–May 2, 2019. This report details the wetlands and surface waters within the Project Area (including rivers, streams, ponds, and lakes), regardless of jurisdictional status. However, this report's description of potential jurisdictional areas to regulatory agencies lends itself toward assessing jurisdiction and avoiding wetlands and surface waters by implementing setbacks (both required by New York State and East Point Energy Center's internal process) during Project planning, to the extent practical.

Delineation efforts included the following tasks:

1. A desktop review of existing, publicly available federal and state agency resources;

2. A field delineation of all aquatic features within the Project Area using a handheld Global Positioning System (GPS) with reported sub-meter accuracy; and,

3. Documentation of the delineated aquatic features including the assumed agency jurisdiction for each resource based on hydrology, vegetation, and hydric soils data collected in the field.

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

2.0 REGULATORY AUTHORITY

2.1 United States Army Corps of Engineers

In accordance with Section 404 of the Clean Water Act, the USACE asserts jurisdiction over Waters of the United States (WOTUS). WOTUS are defined as wetlands, streams, and other

aquatic resources under the regulatory authority of Title 33 Code of Federal Regulations (CFR) Part 328 and the United States Environmental Protection Agency (EPA), per Title 40 CFR Part 230.3(s). Wetlands are defined as "*those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (33 CFR 328.3[c]).

2.1.1 Historical Context

On June 5, 2007, the EPA and the Department of Army issued a memorandum outlining jurisdictional guidance on WOTUS. The document outlined major key points resulting from the United States Supreme Court decision in the matter of *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* (531 U.S. 159, January 9, 2001) and *Rapanos v. United States* (547 U.S. 715, June 19, 2006). This document defined the following:

The USACE will assert jurisdiction over the following waters:

- Traditional navigable waters, which are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce, or are "navigable-in-fact;"
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (i.e., typically three months); and
- Wetlands that directly abut such tributaries.

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

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

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

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and

- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE will apply the significant nexus standard as follows:

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

- Significant nexus includes consideration of hydrologic and ecologic factors.

2.1.2 Current Status

On August 28, 2015, the EPA released the Clean Water Rule (33 CFR Part 328) intending to clarify the scope of the Clean Water Act (CWA), WOTUS, and definitions of significant nexus. However, on October 9, 2015, implementation of the Clean Water Rule was stayed by the Sixth Circuit Court of Appeals pending further action of the court. On August 16, 2018, the U.S. District Court for the District of South Carolina enjoined the delay of the Clean Water Rule. Therefore, the Clean Water Rule became in effect in 22 states, including New York.

Under the Clean Water Rule, the USACE will assert jurisdiction over the following waters:

- Waters within 100 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary;

- Waters within the 100-year floodplain up to a maximum of 1,500 feet from the ordinary high water mark (OHWM); and

- Waters within 1,500 feet of the high-tide line.

Under the Clean Water Rule, the USACE will decide jurisdiction over the following waters (if not already deemed jurisdictional by Rule) based on an analysis to determine whether they have significant nexus:

- Waters categorically “similarly situated” such as prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands;

- Waters within the 100-year floodplain greater than 1,500 feet from the OHWM; and

- Waters within 4,000 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary.

The USACE also regulates navigable waters under Section 10 of the Rivers and Harbor Act (33 U.S.C. 401 et seq.), which requires a permit be issued by the USACE prior to the construction of

any structure in or over a navigable water of the United States, as well as any proposed action (such as excavation/dredging or deposition of materials) that would affect the course, location, condition, or capacity of the navigable water, even if the proposed activity is outside the boundaries of the stream in associated wetlands.

2.2 New York State Department of Environmental Conservation

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

Article 15 of the ECL (Protection of Waters), and its implementing regulations under 6 NYCRR Part 608, provides the NYSDEC with regulatory jurisdiction over activities disturbing the bed or banks of protected streams, including small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected stream. This law and regulation also provide NYSDEC jurisdiction over navigable waters of the State, including contiguous marshes, estuaries, tidal marshes and wetlands that are inundated at mean high water level or tide, A protected stream is defined in the ECL as any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, C(T), or C(TS) (6 NYCRR Part 701). State water quality classifications of unprotected watercourses include Class C and Class D streams. The classifications are defined below.

- A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing.

- The best usages of Class B waters are primary and secondary contact recreation and fishing.

- The best usage of Class C waters is fishing. Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

- Waters with a classification of D are generally suitable for fishing and non-contact recreation.

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

3.0 PROJECT AREA CHARACTERISTICS

3.1 Resources

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

- United States Geological Survey (USGS) Sharron Springs, New York 7.5 minute quadrangle;
- United States Department of Agriculture (USDA) Ecoregion Maps;
- NYSDEC Ecozone Mapping;
- USGS National Hydrography Dataset;
- USGS Hydrologic Unit Maps;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 36095C0040E, effective April 2, 2004, and 36095C0045E, effective April 2, 2004;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- NYSDEC Environmental Resource Mapper (ERM);
- NYSDEC Freshwater Wetlands Mapping;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey; and
- Recent aerial orthoimagery.

3.2 Vegetation and Ecological Communities

The Project Area resides in the Laurentian Mixed Forest Province and Northern Glaciated Allegheny Plateau Section ecoregions of the United States as defined by the USDA Forest Service (Bailey, 1995). Ecoregions are ecosystems of regional extent. The USDA identifies ecoregions by ecosystem characteristics into the following classifications:

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

The Laurentian Mixed Forest Province climate is characterized by long and somewhat severe winters and a short growing season, with average annual temperatures ranging from 35 to 50 degrees Fahrenheit. Altitudes range from sea level to 2,400 feet above mean sea level (AMSL). The vegetation is transitional between the boreal forest and broadleaf deciduous forest zones. Forest vegetation consists of mixed stands of coniferous species (e.g., eastern white pine [*Pinus strobus],* eastern hemlock [*Tsuga canadensis*], and eastern redcedar [*Juniperus virginiana*]) and deciduous species (e.g., yellow birch [*Betula allegheniensis*], sugar maple [*Acer saccharum*], and American beech [*Fagus grandifolia*]), and a mosaic of pure deciduous forest and pure coniferous forest depending on the quality of soil (Bailey, 1995).

The Northern Glaciated Allegheny Plateau is characterized by irregular topographic features such as broadly rolling hills and steep valleys. Elevation ranges from 650 to 1,970 feet AMSL. Forest communities include northern hardwoods and Appalachian oak forest. Regionally important forest communities include Appalachian oak-hickory forest, Appalachian oak-pine forest, beech-maple forest, and hemlock-northern hardwood forest (McNab and Avers, 1994).

Similarly, the NYSDEC has divided New York State into specific ecological regions (Ecozones). Boundaries of the Ecozones of New York State were derived from Will et al. (1982) and Dickinson (1983) and then further modified by the NYSDEC. The Ecozones of New York State have been classified into Major and Minor Zones. The majority of the Project Area is located within the Appalachian Plateau—Major Zone A and more specifically the Central Appalachians Minor Zone. The eastern portion of the Project Area is located within the Mohawk Valley—Major Zone C.

The Appalachian Plateau—Major Zone A's topography has a general plateau structure with horizontal rock formations. Elevation in most of this zone is well over 1,000 feet. AMSL. Soils are generally medium textured, acid, developed on glacial till, and tend to be shallow and moderately well or poorly drained. Natural vegetation in the Appalachian Plateau is oak-northern hardwoods and northern hardwoods. (Will et al., 1982 and Dickinson, 1983).

The Central Appalachians Minor Zone's elevation is above 1,500 feet in most of the zone, except in the very northern portion. Vegetation patterns follow oaks on southern slopes, hardwoods on other slopes, and eastern hemlock in ravines (Will et al., 1982 and Dickinson, 1983).

The Mohawk Valley—Major Zone C's topography has gently sloping, rolling plains, or moderately sloping hills. Elevation in most of the zone is between 500 and 1,700 feet ASML. Soils are medium or moderately fine-texture high lime soils on glacial till in this portion of the Mohawk Valley. Natural vegetation in the Mohawk Valley is northern hardwoods (Will et al., 1982 and Dickinson, 1983).

Recent aerial orthoimagery of the Project Area and surrounding vicinity, obtained from Google Earth aerial imagery (V7.3.2.5776) (March 22, 2019), indicates that the Project Area is covered by agricultural land and upland forest. Agricultural fields, residences, farm building, farm ponds, outbuildings, secondary roads, paved roads, and unimproved farm roads are evident. Streams, drainage ditches, and undeveloped forest are depicted throughout the Project Area. Furthermore, and based off of a more in-depth site review conducted during the delineation effort, the Project Area contains the following ecological communities as defined by Ecological Communities of New York State (Edinger et al., 2014):

- Beech-maple mesic forest
- Hemlock-northern hardwood forest
- Successional northern hardwoods
- Successional old-field
- Successional shrubland
- Cropland/row crops
- Cropland/field crops
- Pastureland
- Intermittent stream
- Red maple-hardwood swamp
- Shallow emergent marsh
- Shrub swamp
- Quarry pond
- Farm ponds/artificial pond
- Eutrophic pond
- Deep emergent marsh
- Rocky headwater stream
- Ditch/artificial intermittent stream

3.3 Hydrology

3.3.1 Hydrologic Mapping

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

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

The Project Area is located within the USGS-defined Mohawk River sub-basin (HUC 02020004) and Schoharie Creek sub-basin (HUC 02020005). At the watershed level, the Project Area is located within the Canajoharie Creek-Mohawk River watershed (HUC 0202000409), Cayadutta Creek-Mohawk River watershed (HUC 0202000410), and the Cobleskill Creek watershed (HUC 0202000506). At the sub-watershed level, the Project Area is located within the Middle Canajoharie Creek sub-watershed (020200040907), Headwaters Flat Creek sub-watershed (HUC 020200041001), and Headwaters West Creek sub-watershed (HUC 020200050601). According to the USGS, approximately 0.76 acres of the Project Area is mapped within the West Creek sub-watershed (HUC 020200050602); however, HUC boundary mapping at this fine of a scale may be inaccurate.

The Mohawk River sub-basin is the central region between the Adirondack Mountains and the Catskill Mountains. The sub-basin drains an area of 1,631,426 acres (2,428 square miles). Elevation in the sub-basin ranges from 7 to 3,598 feet AMSL. Average annual precipitation ranges from 38 to 62 inches and average annual temperature ranges from 35 to 50 degrees Fahrenheit. Wetlands and open water constitutes 14.2 percent of the sub-basin (USDA NRCS, 2011a). The Mohawk River flows eastward into the Hudson River in Cohoes, New York.

The Schoharie Creek sub-basin is in the center of the eastern side of the state. The sub-basin drains an area of 593,424 acres (927 square miles). Elevation in the sub-basin ranges from 276 to 4,044 feet AMSL. Average annual precipitation ranges from 32 to 54 inches and average annual temperature ranges from 42 to 59 degrees Fahrenheit. Wetlands and open water constitutes 5.9 percent of the sub-basin (USDA NRCS, 2011b). Schoharie Creek flows northward to its mouth at the Mohawk River in Fort Hunter, New York.

The NYSDEC also classifies watersheds more generally within the State of New York. Unlike mapping efforts outlined by the USGS above, the NYSDEC uses the definitions of watersheds and drainage basins interchangeably. New York's waters (e.g., lakes, rivers, wetlands, and streams) fall within one of seventeen major drainage basins as defined by the NYSDEC. The NYSDEC defines these drainage basins or watersheds as an area of land that drains water into a specific body of water within or adjacent to New York State and includes networks of rivers, streams, lakes, and the surrounding lands. The NYSDEC-classified watersheds are separated by high elevation geographic features (e.g., mountains, hills, and ridges). Each major drainage basin corresponds to one or more USGS sub-basins (USGS HUC 8-digit codes).

The Project Area is located within the Mohawk River major drainage basin of New York. This major drainage basin drains an area of 2,179,200 acres (3,405 square miles) entirely within New York State. The Mohawk River originates in the valley between the Adirondack Mountains and the Tug Hill Plateau and flows 140 miles eastward and joins the Hudson River. Water quality in this major drainage basin varies and is influenced by urban and industrial inputs from population centers along the Mohawk River corridor. Within this major drainage basin, the Project is located in the Mohawk River (HUC 02020004) and Schoharie Creek (HUC 02020005) sub-basins as previously mentioned.

3.3.2 Hydrologic Character

The Project Area has two dominant surface waterbodies: a tributary of West Creek and a tributary of Flat Creek. The tributary of West Creek flows westward off site before joining West Creek. A tributary of Flat Creek flows eastward through the Project Area before joining Flat Creek off site. Most aquatic features within the Project Area act primarily as drainages to these tributaries to West Creek and Flat Creek.

The Project Area receives 38.5 inches of precipitation annually on average based on information stored for the nearby town of Cobleskill, New York located 7.2 miles from the Project Area (U.S. Climate Data, 2019).

In most of the western portion of the Project Area, water drains relatively to the southwest. In the eastern portion of the Project Area, water drains relatively to the north and east.

3.3.3 FEMA Flood Zone Mapping

FEMA maintains materials developed to support flood hazard mapping for the National Flood Insurance Program (NFIP). According to FIRM panel 36095C0040E and 36095C0045E effective April 2, 2004, the Project Area is not located within a flood zone (see Figure 3).

3.4 Federal and State Mapped Wetlands and Streams

The USFWS is the principal US federal agency tasked with providing information to the public on the status and trends of wetlands on a national scale. The USFWS NWI is a publicly available resource that provides detailed information on the abundance, characteristics, and distribution of nationwide wetlands (where mapped). NWI mapping data is offered in an effort to promote the understanding, conservation, and restoration of wetlands. Note, unlike NYSDEC wetland maps, NWI wetland maps do not denote federal jurisdiction with their mapped boundaries. NWI wetlands are used as a reference guide by TRC field biologists to conduct a more informed site survey in the demarcation or delineation of wetlands and streams, which could be subject to federal jurisdiction under the CWA within the target Project Area.

Review of the NWI mapping during the preliminary desktop analysis indicated six federally mapped features within the Project Area (see Figure 3). NWI mapping data indicates there are three riverine, unknown perennial, unconsolidated bottom, permanently flooded (R5UBH) aquatic features present within the Project Area. There are four palustrine unconsolidated shore (PUS) wetlands (2.3 acres) and one palustrine forested (PFO) wetland (3.3 acres) within the Project Area.

The field-delineated aquatic features within the Project Area are more abundant than the features represented by the NWI mapping for the Project Area. Moreover, a number of field-delineated NWI mapped features are significantly larger than their current depictions and have more specific sinuosity to their boundaries. Lastly, some additional aquatic features also occur within the Project Area outside of boundaries indicated by the NWI mapping.

Review of the NYSDEC ERM indicated one NYSDEC freshwater wetland and its 100-foot adjacent area mapped within the Project Area, which are regulated under Article 24 of the ECL (see Figure 3). Table 1 below provides a summary of the NYSDEC-regulated wetlands mapped within the Project Area.

Table 1. NYSDEC-Mapped Freshwater Wetlands

NYSDEC Wetland ID	Wetland Class (I, II, III, or IV)[1]	Total Wetland Area (Acres)	Wetland Area within the Project Area (Acres)
SS-6	III	36.4	16.4

[1]The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest quality.

Based on NYSDEC stream classification mapping, two mapped streams are within the Project Area. State-protected streams are protected per Article 15 of the ECL (see Section 2.2). Table 2

below provides a detailed summary of the NYSDEC-classified priority (protected and unprotected) streams within the Project Area.

Table 2. NYSDEC-Mapped Streams within the Project Area

NYSDEC Stream Name and Regulatory ID Number	NYS Major Drainage Basin	USGS Sub-basin HUC 8 and Name	NYSDEC Classification[1] and Standard[2]	Cumulative Linear Feet within the Project Area
West Creek, Upper, and tribs	Mohawk River	02020005 (Mohawk River)	C	2,428
Flat Creek and tribs	Mohawk River	02020004 (Schoharie Creek)	C	7,496

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

3.5 Physiography and Soil Characteristics

3.5.1 Physiography and Topography

The Project Area is located within the Glaciated Allegheny Plateau Physiographic Province of New York State (New York State Department of Transportation, 2013). This Physiographic Province is defined by a plateau with a rugged relief from ancient erosion by water and ice. This severe dissection from erosion created numerous steep valleys and troughs sometimes containing lakes, such as the Finger Lakes, or streams.

The landforms of the Project Area are irregular plains, hills, escarpments, and drainage channels. As shown on the USGS Sharon Springs NY 7.5-minute quadrangle, (USGS, 2016), the Project Area is predominately defined by a rolling landscape. The Project Area's lowest elevation is approximately 1,260 feet AMSL at the northeastern corner. There are several drumlins in the Project Area, ranging in elevation from approximately 1,400 to 1,600 feet AMSL. Swales and benches define much of the terrain between the drumlins. The Project Area's highest elevation is approximately 1,660 feet near the southwestern corner of the Project Area.

3.5.2 Site Soils

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

A total of 24 soil map units were identified within the Project Area. Soil map units represent a type of soil, a combination of soils, or miscellaneous land types. Soil map units are usually named for the predominant soil series or land types within the map unit. Due to limitations imposed by the small scale of the soil survey mapping, it is not uncommon to identify wetlands within areas not mapped as hydric soil, while areas mapped as hydric often do not support wetlands. This concept is emphasized by the NRCS:

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

Soil drainage in the Project Area is mostly well drained, with approximately 63.2 percent well drained, 17.1 percent somewhat poorly drained, 9.4 percent moderately well drained, 9.5 percent poorly drained, and 0.6 percent somewhat excessively drained. Additionally, soils within the Project Area have been listed mostly as prime farmland (approximately 44.9 percent) or not prime farmland (35.3 percent).

The 24 soil map units identified within the Project Area by the NRCS and outlined in Table 3. Refer to Figure 2 for graphically depicted soil map units of the Project Area. The soil series present at the Project Area are briefly described below

Soil Descriptions

The Appleton series are very deep, somewhat poorly drained soils found on low ground moraines and on foot slopes of glaciated hills, ridges, and drumlins.

The Chenango series are very deep, well and somewhat excessively drained soils found on outwash plains, kames, eskers, terraces, and alluvial fans.

The Darien series are very deep, somewhat poorly drained soils found on till plains, drumlins, and moraines. The potential for surface runoff ranges from low to very high. Permeability is moderately slow in the subsoil and slow in the substratum.

The Farmington series are shallow, well drained and somewhat excessively drained soils found on nearly level to very steep glaciated uplands. The potential for surface runoff is high or very high.

The Honeoye series are very deep, well drained soils found on nearly level to very steep till plains, hills, ridges, and drumlins. The potential for surface runoff is very low to high.

The Ilion series are deep or very deep, poorly drained soils found on nearly level or gently sloping depressions in upland till plains. Permeability is moderate or moderately slow above the subsoil and very slow in the lower subsoil and substratum.

The Lima series are very deep, moderately well drained soils found on nearly level to moderately steep till plains. The potential for surface runoff is very low to very high.

The Lyons series are very deep, poorly and very poorly drained soils on upland till plains in depressions and low areas in the landscape. They are sometimes found in seeps on gently sloping landscapes.

The Madalin series are very deep, poorly drained soils on lake plains and depressions in uplands. They are formed in water-deposited materials.

The Mohawk series are very deep, well drained soils found on glaciated upland summits through upper toeslopes. The potential for surface runoff is medium to high.

The Nunda series are very deep and deep, moderately well drained soils found on upland till plains. Permeability is moderate in the surface and upper part of the subsoil, moderately slow in the lower part of the subsoil and slow or very slow in the substratum.

The Tunkahannock series are very deep, well to somewhat excessively drained soils found on nearly level to very steep glacial outwash terraces, kames, and valley trains. Permeability is moderately rapid in the solum and rapid in the substratum.

Hydric Soil

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

Of the Project soils, six of the soils mapped within the Project Area contain higher percentages (33 percent or more) of mapping units with hydric soil inclusions (see Figure 2). These higher rating percentages indicate the potential presence of a wetland feature on site. Hydric Soil Rating indicates the percentage of map units that meet the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor non-hydric components in the higher positions on the landform, and map units that are made up dominantly of non-hydric soils may have small areas of minor hydric components in the lower positions on the landform. As such, each map unit is rated based on its respective components

and the percentage of each component within the map unit. Although a soil series will be given a general hydric soil rating on the Web Soil Survey, this rating is for reference only and does not supersede site-specific conditions documented in the field that constitute hydric soil presence in located wetlands.

Table 3. Mapped Soils within the Project Area

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Area	Percent of Project Area
Al	Alluvial land	0 to 3	Poorly drained	55	24.7	1.9
DaB	Darien channery silt loam	2 to 8	Somewhat poorly drained	15	5.3	0.4
DdB	Darien silt loam, gently undulating	2 to 8	Somewhat poorly drained	10	10.1	0.8
DdD	Darien silt loam, undulating	15 to 25	Somewhat poorly drained	15	30.0	2.3
DeB	Darien silt loam	2 to 8	Somewhat poorly drained	15	139.3	10.6
DuC3	Darien silt loam, undulating, eroded	8 to 15	Somewhat poorly drained	10	38.8	3.0
FaB	Farmington very rocky silt loam	0 to 10	Somewhat excessively drained	0	4.0	0.3
FaF	Farmington very rocky silt loam	10 to 70	Somewhat excessively drained	0	4.2	0.3
HfB	Honeoye-Farmington complex	2 to 10	Well drained	0	413.1	31.5

Table 3. Mapped Soils within the Project Area

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Area	Percent of Project Area
HfC	Honeoye-Farmington complex	10 to 20	Well drained	0	77.7	5.9
IaB	Ilion and Appleton soils	3 to 8	Poorly drained	46	32.2	2.5
IlA	Ilion and Lyons soils	0 to 3	Poorly drained	93	0.3	0.1
IlC	Ilion and Lyons silt loams	3 to 15	Poorly drained	85	27.6	2.1
LdB	Lakemont and Madalin silty clay loams	2 to 6	Poorly drained	85	5.6	0.4
Ma	Madalin silt loam, over till	0 to 2	Poorly drained	85	34.8	2.6
MhC	Mohawk and Honeoye soils	10 to 20	Well drained	0	23.7	1.8
MhC3	Mohawk and Honeoye soils, eroded	10 to 20	Well drained	0	98.0	7.5
MhD	Mohawk and Honeoye soils	20 to 30	Well drained	0	46.1	3.5
MlB	Mohawk and Lima soils	2 to 10	Well drained	2	148.2	11.3
MlB3	Mohawk and Lima silt loams, eroded	2 to 10	Well drained	2	20.1	1.5

Table 3. Mapped Soils within the Project Area

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Area	Percent of Project Area
NdB	Nunda channery silt loam	3 to 10	Moderately well drained	0	7.4	0.6
NdC	Nunda channery silt loam	10 to 20	Moderately well drained	0	50.1	3.8
NdC3	Nunda channery silt loam, eroded	10 to 20	Moderately well drained	0	65.1	5.0
ThC	Tunkhannock and Chenango gravelly silt loams	5 to 15	Well drained	0	2.9	0.2

4.0 DELINEATION METHODOLOGY

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

4.1 Hydrology

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

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

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

4.2 Vegetation

Hydrophytic vegetation is defined in the 1987 Manual as:

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

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

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

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

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

It should be noted that where the wetland boundary results of this approach differ meaningfully from the approach outlined within the *New York State Freshwater Wetland Delineation Manual* (Browne et al., 1995), the difference is described within this report if needed to address NYSDEC Article 24 jurisdiction. Though not common, two wetland boundaries, a state and a federal boundary, may arise from subtle differences in the definition of vegetative strata, sampling technique, and wetland indicators between the USACE and the NYSDEC. See Section 5.0 for more detail.

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

4.3 Soils

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

Hydric soil indicators applicable to the Project Area were determined using the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific*

Basin (NRCS, 2006) (MLRA Handbook). Per the MLRA Handbook, the Project Area is within Major Land Resource Area 101 (Ontario-Erie Plain and Finger Lakes Region) of Land Resource Region (LRR) L (Lake State Fruit, Truck Crop, and Dairy Region). Hydric soil indicators that do not apply to this MLRA were not considered.

4.4 Streams

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

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

5.0 RESULTS

5.1 General Overview

The Project Area contains primarily agricultural land and upland forests. The estimated average diameter at breast height (DBH) of the trees ranged from 3 to 18 inches, with a few trees attaining DBH measurements of over 24 inches. Trees in the uplands include sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), bitternut hickory (*Carya cordiformis*), American beech (*Fagus grandifolia*), white ash (*Fraxinus americana*), eastern hop-hornbeam (*Ostrya virginiana*), American basswood (*Tilia americana*), eastern hemlock (*Tsuga canadensis*), and eastern white pine (*Pinus strobus*).

TRC identified and delineated 41 wetlands and 26 streams within the Project Area on July 10 – 12, 2017; May 18–24, 2018; August 9, 2018; and April 29–May 2, 2019 (see Figure 4 and Figure 5). Approximately 6.2 percent (81.46 acres) of the approximately 1,313-acre Project Area is classified as wetland. Tables 4 and 5 below detail the wetlands and streams delineated at the Project Area.

5.2 Delineated Wetlands

Palustrine Emergent wetlands (PEM) – A total of 25 wetlands delineated within the Project Area contain characteristics representative of the emergent wetland classification. Emergent wetlands are dominated by an herbaceous layer of hydrophytic (water-tolerant) plant species. Emergent wetlands typically contain deep, nutrient rich soils that remain heavily saturated or even inundated throughout the year.

Emergent wetlands encountered in the Project Area were typically dominated by reed canary grass (*Phalaris arundinacea*), field horsetail (*Equisetum arvense*), sensitive fern (*Onoclea sensibilis*), broad-leaf cat-tail (*Typha latifolia*), fowl blue grass (*Poa palustris*), and spotted touch-me-not (*Impatiens capensis*). Evidence of wetland hydrology for these wetlands included surface water, saturation, a high water table, drainage patterns, geomorphic position, microtopographic relief, and passing, the FAC-neutral test. Hydric soil indicators adhered to descriptions and guidelines outlined in Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.1 (NRCS, 2017). Although hydric soils indications were variable, emergent wetlands within the Project Area typically displayed black to dark brown (10YR 2/1 – 10YR 3/2) silty loam soils. Variations of characteristics in the soil matrices generally demonstrated Depleted Matrix (F3), Redox Dark Surface (F6), and Depleted Below Dark Surface (A11) hydric soil indicators.

Palustrine Scrub-shrub wetlands (PSS) – A total of 12 wetlands delineated within the Project Area contained characteristics representative of a scrub-shrub wetland community. Scrub-shrub wetlands are dominated by woody shrub vegetation that stand less than 20 feet tall. Shrub species dominating the wetland could include true shrubs, a mixture of young trees and shrubs, or trees that are small or stunted due to stressors from explicit environmental conditions.

Scrub-shrub wetlands encountered in the Project Area were typically dominated by European buckthorn (*Rhamnus cathartica*), silky dogwood (*Cornus amomum*), and willow species (*Salix* spp.). Herbaceous vegetation in these areas were dominated by sensitive fern, spotted touch-me-not, field horsetail, fowl manna grass (*Glyceria striata*), and various sedges (*Carex* spp.). Evidence of wetland hydrology for these wetlands included surface water, saturation, a high water table, hydrogen sulfide odor, water marks, aquatic fauna, drainage patterns, geomorphic position, micro-topographic relief, and the FAC-neutral test. Scrub-shrub wetlands within the Project Area typically displayed black to dark gray (10YR 2/1 – 10YR 4/1) silty loam soils. Variations of characteristics in the soil matrices generally demonstrated Depleted Matrix (F3), Redox Dark Surface (F6), Depleted Below Dark Surface (A11), Loamy Gleyed Matrix (F2), and Hydrogen Sulfide (A4) hydric soil indicators.

Palustrine Forested wetlands (PFO) – A total of 12 wetlands delineated within the Project Area contained characteristics representative of forested wetland. Forested wetlands are sometimes referred to as swamps and are dominated by tree species 20 feet or taller with an understory of shrub and herbaceous species. Understory vegetation presence readily varies, as the upper canopy of tree species may block sufficient light for extensive vegetative growth in the understory.

Coniferous swamps, lowland hardwood swamps, and floodplain forests are common types of forested wetlands. Soils in forested wetlands are typically inundated or saturated early spring into summer. Some forested wetlands may dry up entirely, which reveal water stain marks along the trunks of exposed tree species and also shallow, buttressed root systems indicative of periods of heavy inundation events.

Forested wetlands encountered in the Project Area were typically dominated by green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), red maple (*Acer rubrum),* sugar maple (*Acer saccharum*), white willow (*Salix alba*), and American basswood (*Tilia americana*). Understory vegetation typically included saplings of the aforementioned species or shrub species, such as silky dogwood, European buckthorn, common winterberry (*Ilex verticillata*), intermediate serviceberry (*Amelanchier intermedia*), and nanny-berry (*Viburnum lentago).* Herbaceous species included sensitive fern, spotted touch-me-not, fowl manna grass, field horsetail, late goldenrod (*Solidago gigantea*), flat-top goldenrod (*Euthamia graminifolia*), and various sedges. Evidence of wetland hydrology for these wetlands included saturation, a high water table, aquatic fauna, drainage patterns, hydrogen sulfide odor, geomorphic position, microtopographic relief. Forested wetlands within the Project Area typically displayed black to dark brown (10YR 2/1 – 10YR 3/2) silty loam soils. Variations of characteristics in the soil matrices generally demonstrated Depleted Below Dark Surface (A11), Depleted Matrix (F3), Redox Dark Surface (F6), and Hydrogen Sulfide (A4) hydric soil indicators.

Palustrine Unconsolidated Bottom (PUB) – A total of seven wetlands delineated within the Project Area contained characteristics representative of unconsolidated bottom wetlands. Unconsolidated bottom wetlands are characterized by surface water and have less than 30 percent vegetative cover and at least 25 percent cover of particles less than stones. As these are bodies of standing water, evidence of wetland hydrology was decisively present with standing water ranging from approximately 2–4 feet in depth. Evidence of wetland hydrology included surface water, high water table, saturation, algal mat or crust, inundation visible on aerial imagery, aquatic fauna, geomorphic position, and FAC-neutral test. Dominant herbaceous species included reed canary grass and rice cut grass (*Leersia oryzoides*). Unconsolidated bottom wetlands had gray (10YR 5/2) silt soils. Variations in the soil matrices demonstrated Depleted Matrix (F3) hydric soil indicators.

Palustrine Aquatic Bottom (PAB) – A total of two wetlands delineated within the Project Area contained characteristics representative of aquatic bottom wetlands. Aquatic bottom wetlands are characterized by surface water and have at least 30 percent vegetative cover. Vegetation consists of submerged or floating-leaved rooted vascular plants and free-floating vascular plants. Evidence of wetland hydrology included surface water, high water table, saturation, aquatic fauna, geomorphic position, and FAC-neutral test. Dominant herbaceous species included curly-leaf pondweed (*Potamogeton crispus*), reed canary grass, and field horsetail (*Equisetum arvense*). Aquatic bottom wetlands within the Project Area typically displayed very dark gray to greenish gray (10YR 3/1 – 5BG 6/1) silty loam soils. Variations of characteristics in the soil matrices generally demonstrated Depleted Below Dark Surface (A11), Loamy Gleyed Matrix (F2), and Depleted Matrix (F3) hydric soil indicators

Table 4. Delineated Wetlands within the Project Area

Wetland Field Designation	Cover Type Classification[1] and Acreage					Total Wetland Acreage within Project Area	NWI Cover Type[2]	NYSDEC Wetland ID	NYSDEC Wetland Class[3]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PAB	PUB								
W-AJF-01	-	0.04	-	-	-	0.04	None	None	None	USACE	None	42.77296	-74.543502
W-AJF-02	-	-	0.06	-	-	0.06	None	None	None	USACE	None	42.77532	-74.559036
W-AJF-03	-	0.06	-	-	-	0.06	None	None	None	USACE	None	42.77505	-74.559155
W-AJF-04	-	-	0.68	-	-	0.68	None	None	None	USACE	None	42.77485	-74.557952
W-AJF-05	1.19	-	-	-	-	1.19	None	None	None	USACE	None	42.76879	-74.561448
W-AJF-06	-	0.14	-	0.81	-	0.95	PUS	None	None	USACE	None	42.78555	-74.560898
W-AJF-07	0.15	-	-	-	0.57	0.72	PUS	None	None	USACE	None	42.78402	-74.563957
W-AJF-08	3.37	13.73	5.84	-	0.73	23.67	PUS	SS-6	III	USACE/ NYSDEC	100-ft	42.77958	-74.564506
W-AJF-09	-	0.70	-	-	-	0.70	None	None	None	USACE	None	42.78243	-74.557017
W-AJF-10	1.51	-	-	-	-	1.51	None	None	None	USACE	None	42.78364	-74.560351
W-AJF-11	2.13	-	0.07	-	-	2.20	R5UBH	None	None	USACE	None	42.78463	-74.55682
W-AJF-12	-	-	0.06	-	-	0.06	None	None	None	USACE	None	42.78568	-74.560057
W-AJF-13	0.02	-	-	-	-	0.02	None	None	None	USACE*	None	42.78524	-74.564589
W-AJF-14	0.12	-	-	-	-	0.12	None	None	None	USACE*	None	42.78443	-74.565833
W-AJF-15	0.20	-	-	-	-	0.20	None	SS-6	III	USACE/ NYSDEC	100-ft	42.78240	-74.569535
W-AJF-16	<0.01	-	-	-	-	<0.01	None	None	None	USACE	None	42.79566	-74.570779
W-AJF-17	0.03	-	8.88	0.30	-	9.21	None	SS-1	III	USACE/ NYSDE	100-ft	42.79415	-74.565691

Table 4. Delineated Wetlands within the Project Area

Wetland Field Designation	Cover Type Classification[1] and Acreage					Total Wetland Acreage within Project Area	NWI Cover Type[2]	NYSDEC Wetland ID	NYSDEC Wetland Class[3]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PAB	PUB								
W-ARS-01	0.33	-	-	-	-	0.33	None	None	None	USACE*	None	42.77179	-74.550568
W-ARS-02	-	4.57	-	-	-	4.57	PFO	None	None	USACE	None	42.76501	-74.575445
W-ARS-03	-	0.53	-	-	-	0.53	None	None	None	USACE*	None	42.76276	-74.583697
W-ARS-04	0.18	-	-	-	-	0.18	None	None	None	USACE*	None	42.76384	-74.585012
W-ARS-05	0.04	-	-	-	-	0.04	None	None	None	USACE*	None	42.76651	-74.587186
W-ARS-06	-	-	0.02	-	-	0.02	None	None	None	USACE	None	42.76651	-74.587959
W-ARS-07	4.28	-	1.37	-	3.56	9.22	None	None	None	USACE	None	42.76878	-74.586548
W-ARS-08	-	-	0.09	-	-	0.09	None	None	None	USACE*	None	42.76683	-74.578274
W-ARS-09	-	-	-	-	0.14	0.14	None	None	None	USACE*	None	42.76614	-74.583727
W-CTL-01	1.44	-	1.83	-	-	3.27	None	SS-6	III	USACE/ NYSDEC	100-ft	42.77760	-74.558350
W-CTL-02	-	4.82	5.88	-	-	10.70	None	None	None	USACE	None	42.77678	-74.552410
W-DJL-01	0.03	0.77	-	-	-	0.79	None	None	None	USACE*	None	42.79211	-74.568983
W-JJB-01	-	0.18	-	-	-	0.18	None	None	None	USACE	None	42.77330	-74.543923
W-JJB-03	-	3.74	-	-	-	3.74	None	None	None	USACE	None	42.77558	-74.545362
W-JJB-04	1.95	-	-	-	0.34	2.29	PUS	None	None	USACE	None	42.77673	-74.578880
W-JJB-06	0.04	-	-	-	0.40	0.44	None	None	None	USACE*	None	42.77214	-74.582430
W-JJB-07	0.62	-	-	-	-	0.62	None	None	None	USACE	None	42.77779	-74.584352
W-JJB-08	1.41	0.52	-	-	-	1.92	None	None	None	USACE	None	42.77455	-74.579637
W-MJR-18	-	-	-	-	0.40	0.40	None	None	None	USACE*	None	42.79424	-74.570272
W-MJR-19	0.03	-	-	-	-	0.03	None	None	None	USACE	None	42.79336	-74.563214

Table 4. Delineated Wetlands within the Project Area

Wetland Field Designation	Cover Type Classification[1] and Acreage					Total Wetland Acreage within Project Area	NWI Cover Type[2]	NYSDEC Wetland ID	NYSDEC Wetland Class[3]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PAB	PUB								
W-MJR-20	0.03	-	-	-	-	0.03	None	None	None	USACE*	None	42.79361	-74.563683
W-MJR-21	0.27	-	0.19	-	-	0.45	None	None	None	USACE*	None	42.79294	-74.564564
W-MJR-22	0.02	-	-	-	-	0.02	None	None	None	USACE*	None	42.79095	-74.565867
W-MJR-23	0.05	-	-	-	-	0.05	None	None	None	USACE*	None	42.79304	-74.570841
Total Wetland Acreage Delineated:						**81.46**							

[1]PEM – palustrine emergent; PSS – palustrine scrub-shrub; PFO – palustrine forested; PUB – palustrine unconsolidated bottom
[2]PUS – palustrine unconsolidated shore, PFO – palustrine forested
[3]The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings (I–IV), with Class I being the highest or best quality wetland and Class IV being the lowest quality.
*Waters are within 4,000 feet of a tributary; therefore, a significant nexus determination would be required to determine whether it is USACE jurisdictional or not.

5.3 Delineated Streams

Streams (*RUP, RIN, REPH*) – A total of 28 streams were delineated within the Project Area (see Table 5). Classification of streams were dependent on a temporal description of their usual level of flow regimes. Perennial streams (*RUP*) tend to flow all year, except during severe drought conditions. Perennial streams can flow below the water table and receive groundwater flow sources from springs or groundwater seepages on slopes. Intermittent streams (*RIN*) flow only during certain times of the year from alternating springs, snow melts, or from runoff from seasonal precipitation events. Intermittent streams can flow above or below the water table. Ephemeral streams (*REPH*) flow sporadically and are entirely dependent on transient precipitation from storm events or from periodic snow melts. These streams tend to flow above the water table and are often found as drainage features adjacent to, or within, the headwaters of a more major stream system.

Streams encountered in the Project Area were mostly ephemeral and occurred in agricultural communities along moderate gradients (2–4 percent). They generally contained channel substrates of silt, clay, cobble, and gravel with probed stream depths in the range of <1–6 inches. Most streams were determined to be only utilized as drainage features and lacked substantial features to permit the prevalence of aquatic ecologies. Only one stream within the Project Area was determined to contain significant aquatic habitat to establish and support fish and wildlife populations, S-CL-03.

Table 5. Delineated Streams within the Project Area

Stream Field Designation	Flow Regime Classification	Linear Feet within Project Area	NYSDEC Stream Name and Regulatory ID Number	NYSDEC Classification[1] and Standard[2]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
S-AJF-01	Intermittent	1,532	None	None	USACE	None	42.774869	-74.560079
S-AJF-02	Ephemeral	370	None	None	USACE	None	42.774711	-74.558844
S-AJF-03	Ephemeral	543	None	None	USACE	None	42.775462	-74.555761
S-AJF-04	Perennial	146	None	None	USACE	None	42.785401	-74.56167
S-AJF-05	Intermittent	142	None	None	USACE	None	42.783907	-74.564652
S-AJF-06	Ephemeral	230	None	None	USACE	None	42.783859	-74.563361
S-AJF-07	Ephemeral	131	None	None	USACE	None	42.784762	-74.561699
S-AJF-08	Intermittent	148	None	None	USACE	None	42.783420	-74.56164
S-AJF-09	Perennial	331	Flat Creek and tribs 876-259	C	USACE	None	42.785666	-74.559825
S-AJF-10	Perennial	803	Flat Creek and tribs 876-259	C	USACE	None	42.784695	-74.561542
S-AJF-11	Intermittent	272	None	None	USACE*	None	42.785215	-74.564292
S-ARS-01	Ephemeral	227	None	None	USACE	None	42.761365	-74.587043
S-ARS-02	Ephemeral	762	None	None	USACE	None	42.762727	-74.586812
S-ARS-03	Intermittent	1,772	West Creek, Upper, and tribs 879-38	C	USACE	None	42.768601	-74.587493
S-ARS-04	Ephemeral/ Intermittent	1,823	None	None	USACE*	None	42.766992	-74.582431
S-CL-01	Intermittent	605	Flat Creek and tribs 876-259	C	USACE	None	42.777899	-74.565863
S-CL-02	Ephemeral	346	None	None	USACE	None	42.777529	-74.564641
S-CL-03	Perennial	5,387	Flat Creek and tribs 876-259	C	USACE	None	42.777784	-74.559121
S-CL-04	Ephemeral	364	None	None	USACE	None	42.778116	-74.557273

Table 5. Delineated Streams within the Project Area

Stream Field Designation	Flow Regime Classification	Linear Feet within Project Area	NYSDEC Stream Name and Regulatory ID Number	NYSDEC Classification[1] and Standard[2]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
S-CL-05	Ephemeral	77	None	None	USACE	None	42.776213	-74.551917
S-CL-06	Ephemeral	179	None	None	USACE	None	42.776972	-74.555242
S-CL-07	Ephemeral	379	None	None	USACE*	None	42.779279	-74.550244
S-JJB-01	Perennial	388	Flat Creek and tribs 876-259	C	USACE	None	42.776595	-74.549125
S-JJB-02	Ephemeral	966	None	None	USACE	None	42.771775	-74.584870
S-MJR-01	Intermittent	411	None	None	USACE	None	42.793660	-74.566761
S-MJR-02	Intermittent	77	None	None	USACE*	None	42.792819	-74.564224
S-MJR-03	Ephemeral	139	None	None	USACE*	None	42.792849	-74.568933
S-MJR-04	Ephemeral	216	None	None	USACE*	None	42.793243	-74.570663
Total Stream Length Delineated:		**18,767**						

[1]A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Waters with a classification of D are generally suitable for fishing and non-contact recreation.
[2] Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning.
*Waters are within 4,000 feet of a tributary; therefore, a significant nexus determination would be required to determine whether it is USACE jurisdictional or not.

Representative photographs taken of each delineated wetland community and stream within the Project Area are provided in Appendix B. Completed USACE Routine Wetland Determination Forms and TRC Stream Inventory Data Forms are provided in Appendix C.

6.0 CONCLUSIONS

TRC identified and delineated a total of 41 wetlands (81.46 acres) in the Project Area, comprising 12 wetlands with PFO characteristics (24.97 acres), 12 wetlands with PSS characteristics (29.80 acres), 25 wetlands with PEM characteristics (19.45 acres), 7 wetlands with PUB characteristics (6.14 acres), and 2 wetland with PAB characteristics (1.11 acres). Some of the 41 wetlands have multiple cover types. TRC assumes that 26 of the delineated wetlands will likely be under USACE jurisdiction, as they are hydrologically connected to WOTUS. There are no buffers or setbacks associated with USACE-regulated wetlands. Two wetlands, TRC-delineated emergent/scrub-shrub/forested/unconsolidated bottom wetland W-AJF-08 and emergent/forested wetland W-CL-01, are considered NYSDEC freshwater wetland SS-6 and therefore fall under state jurisdiction pursuant to Article 24 of the ECL. The eastern part of wetland W-AJF-08 extends beyond the NYSDEC freshwater wetland checkzone for NYSDEC freshwater wetland SS-6, and therefore would require a map amendment by the NYSDEC to fall under state jurisdiction pursuant to Article 24 of the ECL. One wetland, emergent wetland W-AJF-15, is likely considered to be NYSDEC freshwater wetland SS-6, and therefore is likely to fall under state jurisdiction pursuant to Article 24 of the ECL. One wetland, emergent/forested/aquatic bottom wetland W-AJF-17, is likely considered to be NYSDEC freshwater wetland SS-1, and therefore is likely to fall under state jurisdiction pursuant to Article 24 of the ECL. One wetland, forested wetland W-CL-02, has the potential to fall under state jurisdiction pursuant to Article 24 of the ECL; however, it would require the NYSDEC to make a map amendment to NYSDEC freshwater wetland SS-6. Of the delineated wetlands, 15 do not have a direct physical connection to WOTUS, but are within 4,000 feet of a tributary and as such would require a significant nexus determination to determine if they are jurisdictional under the USACE.

TRC identified and delineated a total of 28 streams in the Project Area, including 5 perennial streams, 9 intermittent streams, and 15 ephemeral streams. Some streams can vary in classification based on location. Twenty-two of the delineated streams will likely be under USACE jurisdiction, as they are physically connected by surface water connections to WOTUS. Six of the delineated streams do not have a direct physical connection to WOTUS, but are within 4,000 feet of a tributary and as such would require a significant nexus determination to determine if they are jurisdictional under the USACE. Four streams (S-AJF-5, S-AJF-10, S-CL-02, and S-CL-03) coincide with tributaries of Flat Creek, which are listed by the NYSDEC as Class C streams, and are therefore not protected waters per Article 15 of the ECL (Protection of Waters). One stream, S-ARS-03, coincides with an unnamed tributary of West Creek, which is listed by the NYSDEC as a Class C stream, and is therefore not a protected water per Article 15 of the ECL.

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

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APPENDIX A
Figures

APPENDIX B
Photograph Log

APPENDIX C
USACE Routine Wetland Determination Forms
&
TRC Stream Inventory Data Forms