

# **Wetland and Stream Delineation Report**

**South Ripley Solar**

**Town of Ripley**

**Chautauqua County, New York**

Prepared for:



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## **1.0 INTRODUCTION**

### **1.1 PROJECT LOCATION AND DESCRIPTION**

ConnectGen LLC is proposing to construct a solar generation facility and associated necessary infrastructure (the Facility) on approximately 4,510 acres of leased private land (the Facility Area) in the Town of Ripley, Chautauqua County, New York (Figure 1). The Facility Area is roughly bounded by the New York-Pennsylvania border to the west, the Town of Ripley-Town of Mina border to the south, and the Town of Ripley-Town of Westfield border to the east/County Route 6 traverses the center of the Facility Area. The Facility will consist of arrays of photovoltaic (PV) panels and associated support structures, with a total generating capacity of up to 270 megawatts (MW). Other proposed Facility components include access roads, collection lines, battery storage, a collection substation, and potentially a new switchyard at the point of interconnect (POI) substation (Figure 2).

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained to identify and delineate all wetlands and streams within and adjacent to the proposed Facility components described above, hereafter referred to as the Study Area. The Study Area is approximately 2,705 acres in size and, and its boundaries are illustrated in Figure 3. Wetland and stream delineations took place within the Study Area from June 2020 through September 2020.

### **1.2 PURPOSE**

The purpose of this study was to delineate and describe on-site wetlands and streams that occur within the Study Area that could potentially fall under state or federal jurisdiction. Specific tasks performed for this study included: 1) review of background resource data/mapping, 2) field delineation and flagging of potential state and federal jurisdictional wetlands and streams, 3) Global Positioning System (GPS) survey of delineated wetland and stream boundaries, 4) quantification of the area of on-site wetlands and streams, and 5) description of potentially jurisdictional areas based on hydrology, vegetation, and soils data collected in the field.

This report describes the results of the wetland and stream delineations conducted by EDR. It is intended to provide the information necessary to identify jurisdictional areas and support any required permit applications to the United States Army Corps of Engineers (USACE), the New York State Department of Environmental Conservation (NYSDEC), and the New York State Office of Renewable Energy Siting (ORES) as well as other impact evaluations conducted in support of the Project (e.g., Section 94-c Application).

### **1.3 DATA SOURCES**

Materials and data supporting this investigation have been derived from a number of sources including, United States Geological Survey (USGS) topographic mapping South Ripley 7.5 minute quadrangle, United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping, NYSDEC Freshwater Wetlands mapping, the Natural Resources Conservation Service (NRCS) Web Soil Survey (Soil Survey Staff, 2020), the NRCS List of Hydric Soils of the State of New York (NRCS, 2020), the National Land Cover Dataset (NLCD) land cover and vegetation classes (Yang et al., 2018), and recent aerial photography.

Vascular plant names follow nomenclature found in the New York Flora Atlas (Weldy et al., 2020) and wetland indicator status for plant species was determined by reference to the National Wetland Plant List (Lichvar et al., 2018). Jurisdictional areas were characterized according to the wetlands and deepwater habitats classification system used in NWI mapping (Cowardin et al., 1979).

## **2.0 REGULATORY AUTHORITIES AND PERMITS**

### **2.1 WATERS OF THE UNITED STATES**

In accordance with Section 404 of the Clean Water Act (CWA), the USACE has regulatory jurisdiction over Waters of the United States (WOTUS). As defined by the USACE, WOTUS include lakes, ponds, streams (intermittent and perennial), tidal waters, and wetlands. 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*” (USEPA, 2001). Such areas are indicated by the presence of three conditions: 1) a dominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987).

The Clean Water Rule (the “2015 Rule”), effective August 28, 2015, was adopted to provide a clearer and more consistent approach to defining the scope of the CWA and WOTUS. However, in February 2017, an Executive Order was issued directing the USEPA and USACE to review and rescind or revise the 2015 Rule. On April 21, 2020, the USEPA and USACE published The Navigable Waters Protection Rule: Definition of “Waters of the United States”. As of June 22, 2020, the effective date of the Navigable Waters Protection Rule, the agencies define four categories of waters that the USACE will consider to be WOTUS. Waters and features that do not meet the characteristics of one of these four categories will not be considered jurisdictional (USACE and USEPA, 2020). The WOTUS categories defined in The Navigable Waters Protection Rule are summarized below.

The USACE will assert jurisdiction over the following waters:

- Territorial seas and traditional navigable waters,
- Perennial and intermittent tributaries that contribute surface water flow to such waters,
- Certain lakes ponds and impoundments of traditional navigable waters, and
- Wetlands adjacent to other jurisdictional waters.

Any water that does not meet the characteristics of one of the four categories listed above is not considered a WOTUS.

Additionally, the final rule has specifically clarified that WOTUS will not include any of the following eleven features:

- Groundwater, including groundwater drained through subsurface drainage systems;
- Ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools;
- Diffuse stormwater runoff and directional sheet flow over upland;
- Ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations;
- Prior converted cropland;
- Artificially irrigated areas that would revert to upland if artificial irrigation ceases;
- Artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters;
- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
- Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;
- Groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and
- Waste treatment systems.

A Section 404 permit from the USACE is required for activities that result in the placement of dredged or fill materials in WOTUS. In addition to Section 404 of the CWA, Section 10 of the Rivers and Harbor Act requires a permit from the USACE to construct any structure in or over any traditional navigable waters of the United States, as well as any proposed action that would alter or disturb these waters (such as excavation/dredging or deposition of materials). The Study Area does not include any traditional navigable waters, and therefore Section 10 is not applicable to the proposed Facility.

## **2.2 NEW YORK STATE FRESHWATER WETLANDS AND PROTECTED STREAMS**

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. The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands to allow landowners and other interested parties a means of determining where state-jurisdictional wetlands exist. To implement the policy established by this Act, regulations were promulgated by the state under 6 NYCRR Parts 663 and 664. Part 664 of the regulations designates wetlands into four class ratings, with Class I being the highest or best quality wetland, and Class IV being the lowest. In general, wetlands regulated by the state are those 12.4 acres in size or larger. Smaller wetlands can also be regulated if they are considered of unusual local importance. A 100-foot adjacent area around the delineated boundary of any state regulated wetland is also under NYSDEC jurisdiction. An Article 24 permit is required from the NYSDEC for any disturbance to a state-protected wetland or adjacent area.

Under Article 15 of the ECL (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams or other watercourse. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a stream, are considered to be part of a stream and are subject to regulation under the stream protection category of Article 15. According to 6 NYCRR Part 608.1(aa), protected streams include any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications and standards: AA, A, B, or C(T) or C(TS). 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 with the standard (T) indicate that they support trout, while those designated (TS) support trout spawning. An Article 15 permit is required from the NYSDEC for any disturbance to the bed and banks of protected streams, with special requirements applied to streams classified C(T) or higher. Where banks are not clearly defined, the NYSDEC may extend permitting jurisdiction to 50 feet beyond the stream.

In addition to the protection of waters permit required to change, modify, or disturb protected streams, Article 15 also requires a permit from the NYSDEC to construct any structure in or above any navigable waters of the state, as well as any proposed action that would alter or disturb these waters (such as excavation/dredging or deposition of materials). Within the Study Area, Twentymile Creek is a navigable waterbody.

## 3.0 REVIEW OF BACKGROUND DATA AND MAPPING

### 3.1 PHYSIOGRAPHY AND SOILS

The Study Area is located within the Allegheny Plateau physiographic province of New York State. The geography in this province consists of high rounded hills separated by narrow valleys, except for select locations in the Canaseraga Creek and Genesee River valley. Elevations within the Study Area range from approximately 1200 feet to 1600 feet above mean sea level (see Figure 4).

The Web Soil Survey of Chautauqua County, New York and Erie County, Pennsylvania (Soil Survey Staff, 2020) indicates the occurrence of 40 soil series within the Study Area (see Table 1 and Figure 5). These soils range from “very poorly drained” to “well drained”, and soil textures are predominantly silt loam. Table 1 lists the soil series found within the Study Area and their characteristics. “Hydric” and “Potentially Hydric” designations are based on information obtained on the NRCS Web Soil Survey (Survey Staff, 2020). Although soil series may be generally classified as hydric or potentially hydric in the online databases, this is for general use and does not supersede specific conditions documented in the field.

**Table 1. Study Area Soils**

Mapping Unit	Series	Slope (%)	Drainage <sup>1</sup>	Hydric <sup>2</sup>	Potentially Hydric <sup>3</sup>	Acres Within Study Area
Ad	Alden mucky silt loam	--	VPD	Yes	Yes	53.4
As	Ashville silt loam	--	PD	Yes	Yes	166.2
BsA	Busti silt loam	0 to 3	SPD	No	Yes	65.9
BsB	Busti silt loam	3 to 8	SPD	No	Yes	223.3
BsC	Busti silt loam	8 to 15	SPD	No	No	61.6
Cb	Canadaigua silt loam, loamy substratum	--	PD	Yes	Yes	6.6
Cc	Canadaigua mucky silt loam	--	VPD	Yes	Yes	57.8
ChB	Chadakoin silt loam	3 to 8	WD	No	No	21.0
ChC	Chadakoin silt loam	8 to 15	WD	No	No	32.8
ChD	Chadakoin silt loam	15 to 25	WD	No	No	42.4
ChE	Chadakoin silt loam	25 to 35	WD	No	Yes	50.1
ChF	Chadakoin silt loam	35 to 50	WD	No	Yes	11.9
CkB	Chautauqua silt loam	3 to 8	MWD	No	No	67.4
CkC	Chautauqua silt loam	8 to 15	MWD	No	No	141.1
CkD	Chautauqua silt loam	15 to 25	MWD	No	No	33.3
CnB	Chenango gravelly loam	3 to 8	WD	No	No	2.6
CnC	Chenango gravelly loam	8 to 15	WD	No	No	1.9
CoB	Chenango channery loam	3 to 8	WD	No	No	2.3
DaA	Dalton silt loam	8 to 15	SPD	No	Yes	12.1
DeC	Darien silt loam	8 to 15	SPD	No	Yes	27.7

Mapping Unit	Series	Slope (%)	Drainage <sup>1</sup>	Hydric <sup>2</sup>	Potentially Hydric <sup>3</sup>	Acres Within Study Area
ErA	Erie silt loam	0 to 3	SPD	No	Yes	122.7
ErB	Erie silt loam	3 to 8	SPD	No	Yes	696.0
ErC	Erie silt loam	8 to 15	SPD	No	Yes	15.7
Fe	Fluvaquents-Udifluvents complex	N/A	PD	No	Yes	30.7
FmA	Fremont silt loam	0 to 3	SPD	No	Yes	0.6
FmB	Fremont silt loam	3 to 8	SPD	No	Yes	3.6
Ho	Holderton silt loam	0 to 3	SPD	No	Yes	0.7
LnB	Langford silt loam	3 to 8	MWD	No	No	294.7
LnC	Langford silt loam	8 to 15	MWD	No	No	257.2
MdC	Mardin channery silt loam	8 to 15	MWD	No	No	5.4
ShB	Schuyler silt loam	3 to 8	MWD	No	No	7.1
ShC	Schuyler silt loam	8 to 15	MWD	No	No	4.4
ToF	Towerville silt loam	35 to 50	MWD	No	No	10.7
VaB	Valois gravelly silt loam	3 to 8	WD	No	No	1.7
VaC	Valois gravelly silt loam	8 to 15	WD	No	No	0.8
VIA	Volusia gravelly silt loam	0 to 3	SPD	No	Yes	0.2
VIB	Volusia gravelly silt loam	3 to 8	SPD	No	Yes	0.4
VoA	Volusia channery silt loam	0 to 3	SPD	No	Yes	108.3
VoB	Volusia channery silt loam	3 to 8	SPD	No	Yes	60.0
W	Water	--	--	No	No	2.3

<sup>1</sup>Soil drainage is represented by the following abbreviation: "WD" = well drained, "MWD" = moderately well drained, and "SPD" = somewhat poorly drained, "PD" = poorly drained, and "VPD" = very poorly drained.

<sup>2</sup>"Yes" indicates this soil is listed as containing 66% or more hydric components within the map unit as listed on the USDA Web Soil Survey.

<sup>3</sup>"Yes" indicates this soil is listed as containing 1% to 65% hydric components within the map unit as listed on the USDA Web Soil Survey.

### 3.2 HYDROLOGY

The Study Area is located partially within the approximately 866 square miles Chautauqua-Conneaut Hydrologic Unit (04120101) and approximately 1,236 square miles French Hydrologic Unit (05010004). The Chautauqua-Conneaut Unit covers approximately 1860 acres in the northern portion of the Study Area and the French Unit covers approximately 845 acres in the southern portion. The majority of the northern portion of the Study Area drains into Twentymile Creek, which flows north to Lake Erie. The southern portion of the Study Area drains south into the West Branch of French Creek, which flows southwest into Pennsylvania (NRCS, 1994). Total annual precipitation (from 2000 to 2020) averages 33.91 inches at the nearby Dunkirk-Chautauqua County Airport (NOAA, 2020). The on-site wetland delineation took place during the growing season from late June through late September. Table 2 below provides 2020 precipitation averages for the months the wetland delineation was conducted, compared to long-term monthly averages from 2000 to 2020. As indicated in this table, the summer of 2020 was drier than the long-term average.

**Table 2. Short Term and Long-Term Monthly Precipitation Averages**

Month	2020 Average (inches)	2000 to 2020 Average (inches)
June	1.82	2.77
July	3.18	3.79
August	2.42	3.50
September	1.57	3.57

Source: NOAA, 2020

### **3.3 FEDERAL AND STATE MAPPED WETLANDS AND STREAMS**

NWI mapping indicates the presence of 37 wetland communities within the Study Area, totaling 107.5 acres (see Figure 6). Forested and shrub wetland communities are the dominant community types mapped on site, totaling approximately 89.0 acres. Other NWI-mapped communities within the Study Area include emergent wetlands (2.8 acres), riverine wetlands (12.1 acres), and open water ponds (3.6 acres).

Review of NYS Freshwater Wetlands maps indicates that there are two state-regulated wetlands within the Study Area; SR-6 (Class II) and SR-8 (Class II). One additional state-regulated wetland, SR-2 (Class II), is located approximately 0.7 mile to the east of the Study Area (see Figure 6).

Based on available NYSDEC stream classification mapping, the Study Area includes Class C and C(T) streams. The only anticipated state protected stream under Article 15 of the ECL (i.e., streams classified C[T] or better) mapped within the Study Area is Twentymile Creek (see Table 5 and Figure 6).

### **3.4 MAPPED FLOODPLAINS**

According to Federal Emergency Management Agency (FEMA) map services, a flood hazard study has not been completed within the Study Area, therefore a flood map has not been published at this time (FEMA, 2021).

### **3.5 VEGETATION**

Land cover and vegetation occurring within the Study Area were evaluated using current USGS NLCD mapping (Yang et al., 2018), and further verified during the on-site field investigations. The Study Area encompasses approximately 2,705 acres and primarily consists of deciduous forest and pasture and hay fields (see Table 3). Photographs 28 through 30 of Appendix C depict representative upland land use and vegetation within the Study Area.

**Table 3. Vegetation/Land Cover Within the Study Area**

Land Cover Class	Acres	Percent Cover (%)
Pasture/Hay	1041.4	38.5
Cultivated Crops	42.0	1.6
Deciduous Forest	1178.6	43.6
Evergreen Forest	50.9	1.9
Mixed Forest	172.9	6.4
Woody Wetlands	114.8	4.2
Shrub/Scrub	2.8	0.1
Grassland/Herbaceous	35.0	1.3
Emergent Herbaceous Wetlands	12.3	0.5
Developed, High Intensity	0.2	<0.1
Developed, Low Intensity	3.4	0.1
Developed, Medium Intensity	1.4	0.1
Developed, Open Space	48.2	1.8
Barren Land (Rock/Sand/Clay)	0.2	<0.1
Open Water	0.9	<0.1
<b>Total</b>	<b>2,705</b>	<b>100.0</b>

Source: NLCD 2016 (Yang et al., 2018).

### **3.6 LAND USE**

Land use within the Study Area was determined by consulting publicly available data from the Chautauqua County Real Property Tax Department (Chautauqua County Office of Real Property Tax Services, 2019) and the classification codes of the New York State Office of Real Property Services. Within the 2,705-acre Study Area, approximately 1,233 acres (46%) are classified as residential land, approximately 889 acres (33%) are classified as vacant land, approximately 576 acres (21%) are used for agriculture, approximately 6 acres (<0.1%) are classified as public services, and less than one acre (<0.1%) is classified as community service (a cemetery).

## **4.0 ON-SITE WETLAND AND STREAM DELINEATION**

Environmental scientists from EDR and Fisher Associates conducted field delineations of wetlands and streams in the Study Area from late June through September 2020. EDR conducted one additional stream delineation site visit in November 2020. Tetra Tech, on behalf of ORES, conducted initial site visits with EDR personnel on November 24, December 9, and December 15, 2020 to review delineated wetland and stream boundaries. The review primarily focused on wetland areas greater than 12.4 acres in size, areas mapped as freshwater wetlands (Article 24 regulated), or connectivity of delineated features to mapped or potential freshwater wetlands. Obvious areas of saturation identified on aerial imagery that were not delineated as wetlands, along with general presentation of wetland boundaries were also reviewed in the field. Following these site visits, EDR environmental scientists conducted one additional site visit in January 2021 to address written comments and recommendations received from Tetra Tech. Additional information regarding personnel conducting the delineations is included in Appendix E.

#### **4.1 METHODOLOGY**

The identification of wetland boundaries was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the methodologies presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (USACE, 2012) and the *New York State Freshwater Wetland Delineation Manual* (NYSDEC, 1995). Attention was given to the identification of potential hydrologic connections between wetlands and areas that could influence their jurisdictional status.

Wetland boundaries were defined in the field with sequentially numbered pink surveyor's flagging and mapped using a GPS unit with reported sub-meter accuracy. Data were collected from sample plots in representative wetland cover types and recorded on USACE Routine Wetland Determination forms (Appendix B). The data collected at each delineated wetland included dominant vegetation, hydrology indicators, and soil characteristics.

The Regional Supplement lists the following primary indicators of wetland hydrology: (A1) surface water, (A2) high water table, (A3) saturation, (B1) water marks, (B2) sediment deposits, (B3) drift deposits, (B4) algal mat or crust, (B5) iron deposits, (B7) inundation visible on aerial imagery, (B8) sparsely vegetated concave surface, (B9) water-stained leaves, (B13) aquatic fauna, (B15) marl deposits, (C1) hydrogen sulfide odor, (C3) oxidized rhizospheres on living roots, (C4) presence of reduced iron, (C6) recent iron reduction in tilled soils, and (C7) thick muck surface. Per the Regional Supplement, the presence of any one of these "primary" indicators is sufficient evidence that wetland hydrology is present. In addition, the Regional Supplement identifies the following secondary indicators which were also used by EDR personnel to determine wetland hydrology: (B6) surface soil cracks, (B10) drainage patterns, (B16) moss trim lines, (C2) dry-season water table, (C8) crayfish burrows, (C9) saturation visible on aerial imagery, (D1) stunted or stressed plants, (D2) geomorphic position, (D3) shallow aquitard, (D4) microtopographic relief, and (D5) FAC-neutral test. In accordance with the Regional Supplement, in the absence of a primary indicator, the presence of any two of these "secondary" indicators is considered a suitable indication of wetland hydrology.

Assessment of vegetation focused on the identification of dominant plant species in four categories: trees (greater than 3 inches diameter at breast height), saplings/shrubs (less than 3.0" inches diameter at breast height and greater than 3.2 feet tall), herbs (less than 3.2 feet tall), and woody vines. Dominance was determined by visually estimating those species having the greatest absolute percent cover within each stratum. Wetland indicator status for dominant plant species was determined by reference to the National Wetland Plant List (Lichvar et al., 2018). Wetlands are indicated by a dominance of hydrophytic plant species.

Hydric soils are those that are poorly drained and are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil layer. The presence of hydric soils is indicative of the presence of wetlands (Environmental Laboratory, 1987). Hydric soil conditions were determined in the field through observation of soils composition, color, and morphology. Soils data were collected by using a Dutch auger and tiling spade to examine the soil profile. Soil colors were determined using Munsell Soil Charts (Munsell Color, 2009). Information concerning soil series, color, texture, and matrix and mottle color was recorded for each delineated wetland and used to determine whether the soils displayed hydric characteristics.

Streams were identified according to the Cowardin Classification System (1979), and stream boundaries were determined based on the presence of ordinary high water line characteristics, including 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*" (CFR, 1986). Stream boundaries were defined and mapped in the field using the same method as described above for wetlands. Stream flow regime (i.e., perennial, intermittent, or ephemeral) was determined through evaluation of hydrologic, geomorphic, and biological characteristics (NC DWQ, 2010). Data regarding stream gradient (gentle, moderate, or steep), stream bank and channel width, water depth, stream bed substrate, in-stream cover, and biological indicators were collected and recorded on stream inventory forms (Appendix B).

Photographs were taken of wetlands and streams delineated within the Study Area. Representative photographs of the wetland and stream community types found within the Study Area are included in Appendix C.

## 4.2 RESULTS

Environmental scientists from EDR and Fisher Associates identified 147 wetlands within the Study Area (see Figure 7). The data collected at each delineated wetland is summarized below in Table 4. In accordance with the Cowardin et al. (1979) classification system, the wetlands delineated within the Study Area consist of the following community types: open water (POW), palustrine emergent wetland (PEM), palustrine forested wetland (PFO), and palustrine scrub-shrub (PSS). In addition, environmental scientists identified 104 streams within the Study Area (see Figure 7). The data collected at each delineated stream is summarized below in Table 5. In accordance with the Cowardin et al. (1979) classification system, the streams delineated within the Study Area consist of the following community types: lower perennial stream (R2), upper perennial stream (R3), intermittent stream (R4), and ephemeral stream (R6).

**Table 4. Delineated Wetlands**

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
Approximate 1	42.19548	-79.76037	0.72				0.72	No	Unmapped	04120101	Yes	No	2
Approximate 2	42.19698	-79.75751	1.25				1.25	No	Unmapped	04120101	Yes	No	1, 2, 4
FA Wetland 001	42.19691	-79.75287			1.10		1.10	No	Unmapped	04120101	Yes	No	4
FA Wetland 002	42.19853	-79.74852			0.73		0.73	No	Unmapped	04120101	Yes	No	9
FA Wetland 003	42.19901	-79.74921	0.24				0.24	No	Unmapped	04120101	Yes	No	9
FA Wetland 004	42.19995	-79.74840		0.65			0.65	Yes: FA 001	Unmapped	04120101	Yes	No	9
FA Wetland 005	42.19967	-79.75084	0.79				0.79	No	Unmapped	04120101	Yes	No	9
FA Wetland 006	42.18972	-79.74826	0.70				0.70	No	Unmapped > 12.4 acres	04120101	Yes	Yes	12, 15
FA Wetland 007	42.19191	-79.74860	1.29				1.29	Yes: FA Stream 002	Unmapped > 12.4 acres	04120101	Yes	Yes	11, 15
FA Wetland 008	42.19407	-79.74832	0.99				0.99	Yes: FA Stream 003	Unmapped	04120101	Yes	No	10, 11
FA Wetland 009	42.19581	-79.75247	0.43				0.43	No	Unmapped	04120101	No	No	4, 10
FA Wetland 010	42.19451	-79.75107	1.59		1.97		3.56	No	Unmapped	04120101	Yes	No	4, 10
FA Wetland 011	42.19327	-79.75379			3.25		3.25	No	Unmapped	04120101	Yes	No	5
FA Wetland 012	42.19100	-79.75386			14.93		14.93	No	Unmapped > 12.4 acres	04120101	Yes	Yes	6, 11, 12
FA Wetland 013	42.18511	-79.75364	8.94		23.46		32.40	No	Unmapped > 12.4 acres	04120101, 05010004	Yes	Yes	6, 7, 8
FA Wetland 014	42.18898	-79.75270			0.13		0.13	No	Unmapped	04120101, 05010004	Yes	No	7
FA Wetland 015	42.19622	-79.74218	3.86	6.38	1.43		11.67	Yes: FA 004, FA 005, FA 006, FA 008	Unmapped > 12.4 acres	04120101	Yes	Yes	13, 14, 19
FA Wetland 016	42.19918	-79.74147	1.61		7.18		8.79	No	Unmapped > 12.4 acres	04120101	Yes	Yes	13, 18
FA Wetland 017	42.19762	-79.74294	0.20				0.20	No	Unmapped	04120101	Yes	No	13
FA Wetland 018	42.19946	-79.74515	0.44	0.30			0.74	No	Unmapped	04120101	Yes	No	13
FA Wetland 019	42.19689	-79.73755	1.63	3.43		0.08	5.14	Yes: FA 007, FA 008	Unmapped > 12.4 acres	04120101	Yes	Yes	19, 21, 22
FA Wetland 020	42.19610	-79.73599	1.00				1.00	No	Unmapped	04120101	Yes	No	22
FA Wetland 021	42.19517	-79.73488	1.13				1.13	No	Unmapped	04120101	Yes	No	22

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
FA Wetland 022	42.20219	-79.72590	4.52				4.52	No	Unmapped	04120101	Yes	No	35
FA Wetland 023	42.19833	-79.72865	2.57	3.16			5.73	Yes: FA 008, FA 010, FA 011	Unmapped	04120101	Yes	No	28, 29, 36
FA Wetland 024	42.20263	-79.73011	0.80				0.80	No	Unmapped	04120101	Yes	No	28
FA Wetland 025	42.18521	-79.73268	1.31		14.90		16.21	No	Class II	05010004	Yes	Yes	25, 26, 33
FA Wetland 026	42.18132	-79.72991	1.86	1.04			2.90	No	Class II	05010004	Yes	Yes	27, 34
FA Wetland 027	42.18114	-79.72598	0.10				0.10	No	Class II	05010004	Yes	Yes	38
FA Wetland 028	42.18179	-79.72533		0.45			0.45	No	Class II	05010004	Yes	Yes	38
FA Wetland 029/ Wetland 98	42.18917	-79.72664	6.63	13.59			20.22	No	Unmapped > 12.4 acres	04120101, 05010004	Yes	Yes	30, 31, 32
FA Wetland 030	42.18193	-79.72774			0.46		0.46	No	Unmapped > 12.4 acres	05010004	Yes	Yes	34
FA Wetland 031	42.19620	-79.73490				0.17	0.17	No	Unmapped	04120101	No	No	22
Wetland 01	42.18049	-79.66110	0.23				0.23	No	Unmapped	04120101	Yes	No	100
Wetland 02	42.18422	-79.66238	<0.01				<0.01	Yes: ST-01	Unmapped	04120101	Yes	No	99
Wetland 03	42.18421	-79.66417	0.18				0.18	No	Unmapped	04120101	Yes	No	99
Wetland 04	42.18498	-79.66531			0.02		0.02	Yes: ST-02	Unmapped	04120101	Yes	No	98
Wetland 046	42.17789	-79.70497	0.71				0.71	No	Unmapped	04120101	Yes	No	70
Wetland 05	42.18482	-79.66692			0.03		0.03	Yes: ST-02	Unmapped	04120101	Yes	No	92, 98
Wetland 06	42.18489	-79.67096	2.87		0.18		3.05	Yes: ST-04, ST-15, ST-26, ST-27	Unmapped	04120101	Yes	No	87, 88, 89, 92, 93, 94
Wetland 07	42.18530	-79.67292			0.01		0.01	Yes: ST-07	Unmapped	04120101	Yes	No	89
Wetland 077	42.19724	-79.66220	0.01				0.01	Yes: ST-66	Unmapped	04120101	Yes	No	95
Wetland 08	42.18434	-79.67282			0.05		0.05	Yes: ST-08	Unmapped	04120101	Yes	No	89
Wetland 09	42.18301	-79.66954			0.09		0.09	No	Unmapped	04120101	Yes	No	93
Wetland 098	42.19119	-79.71419			0.76		0.76	No	Unmapped	04120101	Yes	No	53
Wetland 099	42.19070	-79.71116	0.01				0.01	No	Unmapped	04120101	Yes	No	53
Wetland 10	42.18282	-79.66937			0.02		0.02	Yes:	Unmapped	04120101	Yes	No	93

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
								ST-10					
Wetland 11	42.18310	-79.66535	0.02				0.02	No	Unmapped	04120101	Yes	No	99
Wetland 12	42.18215	-79.66708			0.10		0.10	No	Unmapped	04120101	Yes	No	93
Wetland 13	42.18194	-79.66831			0.09		0.09	Yes: ST-10	Unmapped	04120101	Yes	No	93
Wetland 14	42.18210	-79.66882			0.03		0.03	Yes: ST-10	Unmapped	04120101	Yes	No	93
Wetland 15	42.18153	-79.66868			0.03		0.03	Yes: ST-11	Unmapped	04120101	Yes	No	94
Wetland 16	42.18132	-79.66822			0.02		0.02	Yes: ST-11	Unmapped	04120101	Yes	No	94
Wetland 17	42.18107	-79.66677	0.03				0.03	Yes: ST-11	Unmapped	04120101	Yes	No	94
Wetland 18	42.18093	-79.66556	0.03				0.03	Yes: ST-11	Unmapped	04120101	Yes	No	94
Wetland 19	42.18007	-79.66687	0.04				0.04	No	Unmapped	04120101	Yes	No	94
Wetland 20	42.18358	-79.70243	<0.01				<0.01	No	Unmapped	05010004	Yes	No	68
Wetland 21	42.17527	-79.69454	6.73	1.35	1.59	0.44	10.11	Yes: ST-81	Unmapped	04120101, 05010004	Yes	No	71, 72, 79, 80
Wetland 22	42.18217	-79.69649	0.76	0.12			0.88	No	Unmapped	05010004	Yes	No	78
Wetland 23	42.18264	-79.68891			23.93		23.93	Yes: ST-12	Class II	04120101	Yes	Yes	81, 82
Wetland 24	42.18377	-79.69393			0.69		0.69	Yes: ST-13	Unmapped	04120101	Yes	No	78, 81
Wetland 25	42.17613	-79.67829	0.04				0.04	No	Unmapped	04120101	Yes	No	84
Wetland 26	42.17517	-79.67725	0.66				0.66	Yes: ST-55	Unmapped	04120101	Yes	No	84, 85
Wetland 27	42.18653	-79.67139	0.49				0.49	Yes: ST-31	Unmapped	04120101	Yes	No	88, 89, 92
Wetland 28	42.19793	-79.76167	0.13				0.13	No	Unmapped	04120101	Yes	No	1
Wetland 29	42.19927	-79.76080	0.06				0.06	No	Unmapped	04120101	Yes	No	1
Wetland 30	42.19809	-79.75855	0.09				0.09	No	Unmapped	04120101	Yes	No	1, 3
Wetland 31	42.19999	-79.75706		1.34			1.34	No	Unmapped	04120101	Yes	No	1, 3
Wetland 32	42.19877	-79.75641	0.08				0.08	No	Unmapped	04120101	Yes	No	3
Wetland 33/ Wetland 34	42.19619	-79.75718			6.10		6.10	No	Unmapped	04120101	Yes	No	2, 4

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
Wetland 35	42.19529	-79.75467	0.09		1.70		1.79	No	Unmapped	04120101	Yes	No	4
Wetland 36	42.18651	-79.66572	0.04	0.15		0.45	0.64	No	Unmapped	04120101	Yes	No	98
Wetland 37	42.19138	-79.66655		0.10	1.03		1.13	Yes: ST-20	Unmapped	04120101	Yes	No	90, 91, 97
Wetland 38	42.18586	-79.68411	11.17				11.17	No	Unmapped > 12.4 acres	04120101	Yes	Yes	83
Wetland 39	42.18438	-79.67635			0.21		0.21	Yes: ST-08	Unmapped	04120101	Yes	No	86, 89
Wetland 40	42.19571	-79.66474	0.01		0.03		0.04	Yes: ST-22	Unmapped	04120101	Yes	No	95
Wetland 41	42.19456	-79.66728	0.03				0.03	Yes: ST-23	Unmapped	04120101	Yes	No	90
Wetland 42	42.19434	-79.65962	0.08				0.08	Yes: ST-22	Unmapped	04120101	Yes	No	103
Wetland 43	42.19421	-79.65890	0.19				0.19	Yes: ST-22	Unmapped	04120101	Yes	No	103
Wetland 44	42.19358	-79.65891	0.22				0.22	Yes: ST-22	Unmapped	04120101	Yes	No	103
Wetland 45	42.18939	-79.67187			0.25		0.25	Yes: ST-28	Unmapped	04120101	Yes	No	88
Wetland 46	42.18195	-79.70852	9.04	20.62	61.77	2.70	94.13	Yes: ST-34, ST-35	Class II	05010004	Yes	Yes	33, 37, 38, 45, 46, 47, 54, 55, 56, 63, 64, 65, 66, 68
Wetland 47	42.17752	-79.70477				0.27	0.27	No	Unmapped	05010004	Yes	No	70
Wetland 49	42.18064	-79.70689	0.10				0.10	No	Unmapped	05010004	Yes	No	64, 69
Wetland 50	42.17620	-79.70447	0.02				0.02	No	Unmapped	05010004	Yes	No	70
Wetland 51	42.18867	-79.71787	3.99		0.80		4.79	Yes: ST-37	Class II	04120101, 05010004	Yes	Yes	43, 44
Wetland 52	42.19628	-79.71813	1.79	3.26	0.16		5.21	Yes: ST-39, ST-40, ST-41, ST-42, ST-59	Unmapped	04120101	Yes	No	39, 40, 41, 42, 51, 52
Wetland 53	42.17734	-79.70949	0.17				0.17	No	Class II	05010004	Yes	Yes	65
Wetland 54	42.19876	-79.71692		0.08			0.08	No	Unmapped	04120101	Yes	No	41, 51
Wetland 55	42.20547	-79.71990			0.01		0.01	No	Unmapped	04120101	Yes	No	39
Wetland 56	42.17386	-79.67594	0.43	0.29	0.20		0.92	Yes:	Unmapped	04120101	Yes	No	84, 85

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
								ST-55					
Wetland 57	42.17473	-79.67491	0.19		0.23		0.42	No	Unmapped	04120101	Yes	No	85
Wetland 58	42.17580	-79.67413	0.07				0.07	No	Unmapped	04120101	Yes	No	85
Wetland 59	42.20429	-79.71645	0.11		0.20		0.31	Yes: ST-50	Unmapped	04120101	Yes	No	48, 49, 50, 51
Wetland 60	42.20609	-79.71605			0.03		0.03	Yes: ST-50	Unmapped	04120101	Yes	No	48, 49
Wetland 61	42.20783	-79.71578			0.18		0.18	No	Unmapped	04120101	Yes	No	48
Wetland 62	42.20810	-79.71696	0.06				0.06	Yes: ST-51	Unmapped	04120101	Yes	No	48
Wetland 63	42.20682	-79.71454	0.05		0.03		0.08	Yes: ST-52	Unmapped	04120101	Yes	No	48, 49
Wetland 64	42.20737	-79.71067			0.10		0.10	Yes: ST-54	Unmapped	04120101	Yes	No	57
Wetland 65	42.20124	-79.71678	0.11				0.11	No	Unmapped	04120101	Yes	No	50
Wetland 66	42.20104	-79.71715	0.03				0.03	No	Unmapped	04120101	Yes	No	40, 50
Wetland 67	42.20478	-79.72015	0.06				0.06	Yes: ST-47	Unmapped	04120101	Yes	No	39
Wetland 68	42.20519	-79.71985	0.06				0.06	Yes: ST-48	Unmapped	04120101	Yes	No	39
Wetland 69	42.20497	-79.72113			0.19		0.19	No	Unmapped	04120101	Yes	No	39
Wetland 70	42.20434	-79.72119			0.06		0.06	Yes: ST-48	Unmapped	04120101	Yes	No	39
Wetland 71	42.20401	-79.72018			0.02		0.02	Yes: ST-46	Unmapped	04120101	Yes	No	39
Wetland 72	42.20245	-79.72071	0.45				0.45	Yes: ST-44, ST-45, ST-57	Unmapped	04120101	Yes	No	39, 40
Wetland 73	42.20437	-79.71919	0.17				0.17	No	Unmapped	04120101	Yes	No	39
Wetland 74	42.19878	-79.70835	0.76				0.76	Yes: ST-68	Unmapped	04120101	Yes	No	60, 61
Wetland 75	42.20396	-79.71003	0.02				0.02	Yes: ST-60	Unmapped	04120101	Yes	No	58
Wetland 76	42.20469	-79.70892	0.11				0.11	Yes: ST-61	Unmapped	04120101	Yes	No	58
Wetland 77	42.20431	-79.70909	0.07		0.30		0.37	Yes: ST-61	Unmapped	04120101	Yes	No	58
Wetland 78	42.19706	-79.66184	0.01				0.01	Yes: ST-66	Unmapped	04120101	Yes	No	95

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
Wetland 79	42.19875	-79.65873	0.20				0.20	Yes: ST-67, ST-068	Unmapped	04120101	Yes	No	104
Wetland 80	42.19841	-79.65695	0.16				0.16	No	Unmapped	04120101	Yes	No	104
Wetland 81	42.19883	-79.65648	1.12	1.35			2.47	Yes: ST-67	Unmapped	04120101	Yes	No	104, 105
Wetland 82	42.19603	-79.65520	1.57			0.39	1.96	No	Unmapped	04120101	Yes	No	105
Wetland 83	42.19866	-79.65220	4.17	13.06			17.23	No	Unmapped > 12.4 acres	04120101	Yes	Yes	105, 106, 107
Wetland 84	42.20142	-79.71005	0.40	2.22			2.62	Yes: ST-68	Unmapped	04120101	Yes	No	59, 60
Wetland 85	42.19580	-79.71056	0.72				0.72	No	Unmapped	04120101	Yes	No	61
Wetland 86	42.19042	-79.70750	0.33		2.59		2.92	Yes: ST-70, ST-71	Class II	04120101	Yes	Yes	62
Wetland 87	42.19123	-79.70971	0.03 <sup>9</sup>		0.14		0.17	Yes: ST-70	Class II	04120101	Yes	Yes	62
Wetland 88	42.19123	-79.71216			0.02		0.02	No	Unmapped	04120101	Yes	No	53
Wetland 89	42.19079	-79.71252	0.70		0.05		0.75	Yes: ST-72, ST-82	Unmapped	04120101	Yes	No	53
Wetland 90	42.18937	-79.70224	0.76				0.76	No	Unmapped	05010004	Yes	No	67
Wetland 91	42.18841	-79.70065	0.04				0.04	Yes: ST-73	Unmapped	05010004	Yes	No	67
Wetland 92	42.19487	-79.69826			0.35		0.35	No	Unmapped	04120101	Yes	No	74
Wetland 93	42.18653	-79.69613	0.16				0.16	Yes: ST-74	Unmapped	04120101	Yes	No	77
Wetland 94	42.18946	-79.69727	0.42		0.07		0.49	No	Unmapped	05010004	Yes	No	76
Wetland 95	42.18961	-79.69680			0.18		0.18	No	Unmapped	04120101, 05010004	Yes	No	76
Wetland 96	42.17512	-79.69963	6.27	1.59	0.43		8.29	No	Unmapped	05010004	Yes	No	72, 73
Wetland 97	42.19430	-79.73282	2.77			0.57	3.34	No	Unmapped	04120101	Yes	No	22, 23
Wetland 99	42.19070	-79.71116		0.19			0.19	No	Unmapped	04120101	Yes	No	30
Wetland 100	42.18874	-79.73337			0.56		0.56	No	Unmapped	04120101, 05010004	Yes	No	24, 25
Wetland 101	42.18978	-79.73290			0.85		0.85	No	Unmapped	05010004	Yes	No	24
Wetland 102	42.19211	-79.73361	1.41			0.85	2.26	No	Unmapped	04120101	Yes	No	23, 24
Wetland 103	42.18695	-79.74489			0.05		0.05	Yes: ST-75	Unmapped	05010004	Yes	No	17

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type <sup>2</sup>					Stream(s) Present <sup>3</sup>	NYSDEC Class	HUC 8	Anticipated Federal Jurisdiction <sup>4</sup>	State Jurisdiction <sup>5</sup>	Appendix A: Figure 7 Sheet Number(s)
			PEM	PSS	PFO	POW	Total						
Wetland 104	42.18944	-79.74434	1.49	0.25	1.75		3.49	No	Unmapped	04120101	Yes	No	15, 16
Wetland 105	42.19134	-79.74419	0.91	1.49		0.17	2.57	Yes: ST-76	Unmapped	04120101	Yes	No	15
Wetland 106	42.19241	-79.74602		1.20			1.20	No	Unmapped > 12.4 acres	04120101	Yes	Yes	15
Wetland 107	42.18539	42.18539			1.46		1.46	No	Unmapped	05010004	Yes	No	17
Wetland 108	42.18342	-79.73308	1.50		3.31		4.81	No	Class II	05010004	Yes	Yes	26, 27
Wetland 109	42.18364	-79.73777			1.08		1.08	No	Unmapped	05010004	Yes	No	20, 26
Wetland 110	42.18365	-79.74044	0.33				0.33	Yes: ST-77	Unmapped	05010004	Yes	No	20
Wetland 111	42.17632	-79.66388	0.38				0.38	Yes: ST-79	Unmapped	04120101	Yes	No	101, 102
Wetland 112	42.17798	-79.66403		1.00			1.00	No	Unmapped	04120101	Yes	No	101
Wetland 113	42.19569	-79.76066		0.27			0.27	ST-80	Unmapped	04120101	Yes	No	2

<sup>1</sup> Field ID assigned by Fisher Associates or EDR field staff. Note that wetlands Approximate 1 and Approximate 2 were estimated to occur on the existing transmission line corridor, based on visual observation from adjacent properties because access to the corridor could not be obtained for this study.

<sup>2</sup> Wetland community types are based upon the Cowardin et al. (1979) classification system: POW = open water, PEM = palustrine emergent wetland, PFO = palustrine forested wetland, and PSS = palustrine scrub-shrub.

<sup>3</sup> Delineation IDs in this column indicate the stream ID assigned by Fisher Associates or EDR staff in the field.

<sup>4</sup> Based on visual observation of hydrologic connectivity in the field and review of available spatial data. Final jurisdictional determination to be made by the USACE.

<sup>5</sup> Based on the Final ORES Wetland Jurisdictional Determination letter dated April 19, 2021 (Appendix F). See Sections 2.2, 3.3, and 5.0 for additional information.

<sup>6</sup> The PEM portion of Wetland 87 (0.03 acre) was not identified by ORES as a state jurisdictional wetland. Please see Figure 7 for locations of state jurisdictional wetlands.

**Table 5. Delineated Streams**

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
FA Ditch 001	42.19926	-79.72602				920.6	920.6	Unnamed	Unmapped	04120101	—	1	No	No	35, 36
FA Stream 001	42.19971	-79.74880				182.9	182.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	9
FA Stream 002	42.1923	-79.7477			494.7		494.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	11, 15
FA Stream 003	42.19417	-79.74795				383.9	383.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	10
FA Stream 004	42.1953	-79.7435		361.9			361.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	14
FA Stream 005	42.1956	-79.7409		505.3			505.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	19
FA Stream 007	42.1955	-79.7386			480.4		480.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	19
FA Stream 008	42.1966	-79.7384		1807.0	2534.0		4341.0	UNT to Twentymile Creek	Class C	04120101	E96-7-1	2	Yes	No	14, 19, 21, 28, 29
FA Stream 009	42.1950	-79.7380				115.3	115.3	Unnamed	Unmapped	04120101	—	1	No	No	19
FA Stream 010	42.1982	-79.7298				186.6	186.6	UNT to Twentymile Creek	Unmapped	04120101	E96-7-1	1	No	No	29
FA Stream 011	42.1995	-79.7296			229.7		229.7	UNT to Twentymile Creek	Unmapped	04120101	E96-7-1	1	Yes	No	29
FA Stream 012	42.2023	-79.7317			457.1		457.1	UNT to Twentymile Creek	Class C	04120101	E96-7	1	Yes	No	28

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-01	42.18423	-79.66214				167.6	167.6	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	99
ST-02 <sup>9</sup>	42.1843	-79.6645		869.6	641.4	195.8	1706.8	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	Yes	92, 93, 98, 99
ST-03	42.18503	-79.66513				91.0	91.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	98
ST-031	42.19510	-79.66355				119.8	119.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	96
ST-04	42.1853	-79.6713	5266.1				5266.1	Twentymile Creek	Class C(t)	04120101	E-96	2	Yes	Yes	87, 88, 89, 92, 93, 94
ST-068	42.19832	-79.65876				123.7	123.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	104
ST-07	42.1854	-79.6729			95.1		95.1	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	89
ST-075	42.19504	-79.69588			27.5		27.5	UNT to Twentymile Creek	Class C	04120101	—	1	Yes	No	74
ST-078	42.19120	-79.69583			29.2		29.2	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	75
ST-08 <sup>9</sup>	42.1847	-79.6728	454.2	678.7	1445.0	567.5	3145.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	Yes	86, 89
ST-080	42.19610	-79.76111				589.1	589.1	UNT to Sixteenmile Creek (PA)	Unmapped	04120101	—	1	No	No	2
ST-09	42.1844	-79.6709			102.4		102.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	92, 93
ST-10	42.18256	-79.66930				515.9	515.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	93

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-11	42.1812	-79.6677			1410.3		1410.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	93, 94
ST-12	42.1836	-79.6904			1356.8	116.7	1473.5	UNT to Twentymile Creek	Unmapped	04120101	E-96-15a	1	Yes	No	81, 82
ST-13	42.1840	-79.6942			28.8		28.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	78
ST-14	42.18233	-79.68582			145.9	145.9	145.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	82
ST-15	42.18700	-79.67215			54.8	54.8	54.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	89
ST-16	42.18998	-79.67198			263.6	263.6	263.6	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	87, 88
ST-17	42.19871	-79.75980			520.7	520.7	520.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	3, 1
ST-18	42.18519	-79.67048			406.9	406.9	406.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	92
ST-19	42.18479	-79.66896			312.8	312.8	312.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	92
ST-20 <sup>9</sup>	42.1915	-79.6667		1089.2	1974.2		3063.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	Yes	87, 90, 91, 97
ST-21	42.18604	-79.67503			458.5	458.5	458.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	86, 89
ST-22	42.1945	-79.6627		2638.6			2638.6	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	95, 96, 103
ST-23	42.1942	-79.6668		857.3	55.1		912.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	90, 96

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-24	42.1951	-79.6703		88.7			88.7	UNT to Twentymile Creek	Unmapped	04120101	E-96-18	1	Yes	No	90
ST-25	42.1913	-79.6726		213.5			213.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	87
ST-26	42.1909	-79.6731			74.7		74.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	87
ST-27	42.19010	-79.67300				257.1	257.1	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	87, 88
ST-28	42.18887	-79.67177				329.8	329.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	88
ST-29	42.1888	-79.6728			33.5		33.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	88
ST-30	42.1932	-79.6631			261.5		261.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	96
ST-31	42.1875	-79.6715			272.6	42.2	314.8	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	88
ST-32	42.18783	-79.67122				121.5	121.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	88
ST-33	42.18399	-79.70389				764.2	764.2	UNT to West Branch French Creek	Unmapped	05010004	—	1	No	No	68
ST-34	42.17381	-79.70824				496.0	496.0	UNT to West Branch French Creek	Unmapped	05010004	—	1	No	No	66
ST-35	42.17404	-79.70832				97.1	97.1	UNT to West Branch French Creek	Unmapped	05010004	—	1	No	No	66
ST-36	42.1797	-79.7074			526.7	1220.6	1747.3	UNT to West Branch French Creek	Unmapped	05010004	—	1	Yes	No	64, 69

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-37	42.1887	-79.7180			266.1		266.1	UNT to West Branch French Creek	Unmapped	05010004	—	1	Yes	No	44
ST-38	42.19573	-79.71472			58.0	58.0	58.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	52
ST-39	42.1967	-79.7153		4838.4		88.2	4926.6	UNT to Twentymile Creek	Class C	04120101	E96-7-2	3	Yes	No	39, 40, 41, 51, 52
ST-40	42.1966	-79.7179		1714.2	92.0	18.6	1824.7	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	42, 52
ST-41	42.1952	-79.7207		426.7		426.7	426.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	42
ST-42	42.19537	-79.71759			281.8	281.8	281.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	42
ST-43	42.20039	-79.71852			93.4	93.4	93.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	40, 41
ST-44	42.2034	-79.7206		736.6	114.3	850.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	39, 40	
ST-45	42.20367	-79.72114			686.3	686.3	686.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	39
ST-46	42.20404	-79.71992			108.2	108.2	108.2	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	39
ST-47	42.20474	-79.71996			167.6	167.6	167.6	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	39
ST-48	42.20491	-79.72043			866.1	866.1	866.1	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	39
ST-49	42.2054	-79.7212		321.4		321.4	321.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	39

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-50	42.2055	-79.7156		3627.6	1059.8	184.4	4871.8	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	48, 49, 50, 51
ST-51	42.2084	-79.7172			161.0	26.8	187.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	48
ST-52	42.2068	-79.7142		1109.0			1109.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	48, 49
ST-53	42.20568	-79.71080				162.0	162.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	58
ST-54	42.2083	-79.7103			426.4	185.1	611.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	57
ST-55 <sup>9</sup>	42.1739	-79.6741		1843.9	242.4		2086.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	Yes	84, 85
ST-56	42.20422	-79.72084				71.3	71.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	39
ST-57	42.2056	-79.7215			72.9	276.7	349.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	39, 40
ST-58	42.2016	-79.7197			432.0		432.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	40
ST-59	42.2013	-79.7195			416.4		416.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	40
ST-60	42.20406	-79.70990				96.4	96.4	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	58
ST-61	42.2051	-79.7092			512.5	92.2	604.7	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	58, 59
ST-62	42.19528	-79.66365				68.6	68.6	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	95, 96

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-63	42.19533	-79.66372				87.8	87.8	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	95, 96
ST-64	42.19540	-79.66372				112.9	112.9	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	95
ST-65	42.1970	-79.6622			375.5		375.5	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	95
ST-66	42.19729	-79.66245				223.3	223.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	95
ST-67	42.1988	-79.6581			389.5		389.5	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	104
ST-68	42.1999	-79.7086			543.5	364.5	908.0	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	59, 60
ST-69	42.1910	-79.7106		1109.7			1109.7	UNT to Twentymile Creek	Unmapped	04120101	E96-7-2	3	Yes	No	53
ST-70	42.1907	-79.7093			1065.2		1065.2	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	53, 62
ST-71	42.19109	-79.70921				528.3	528.3	UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	62
ST-72	42.1913	-79.7129			408.9		408.9	UNT to Twentymile Creek	Unmapped	04120101	—	2	Yes	No	53
ST-73	42.18859	-79.70139				523.2	523.2	UNT to West Branch French Creek	Unmapped	05010004	—	1	No	No	67
ST-74	42.1932	-79.6966		3204.0			3204.0	UNT to Twentymile Creek	Class C	04120101	E-96-15a	2	Yes	No	74, 75, 76, 77
ST-75	42.1866	-79.7439			623.5		623.5	UNT to West Branch French Creek	Unmapped	05010004	—	1	Yes	No	17

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)
			R2	R3	R4	R6	Total								
ST-76	42.1903	-79.7462			283.5	333.5	617.1	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	15, 74, 75
ST-77	42.18355	-79.74107		678.3		59.2	737.4	UNT to West Branch French Creek	Class C	05010004	Pa 84-5	1	Yes	No	20, 74, 75
ST-78	42.1912	-79.6943		869.9			869.9	Twentymile Creek	Class C(t)	04120101	E-96	2	Yes	Yes	102
ST-79	42.17563	-79.66354			508.1	508.1		UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	75, 76, 102
ST-80	42.19159	-79.69670			232.5	232.5		UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	75
ST-81	42.1750	-79.6943		663.1			663.1	UNT to Twentymile Creek	Unmapped	04120101	—	1	Yes	No	80
ST-82	42.19116	-79.71283			80.7	80.7		UNT to Twentymile Creek	Unmapped	04120101	—	1	No	No	53
ST-1001	42.18176	-79.71795			397.0		397.0	UNT to French Creek	Class C	05010004	Pa 84-5-1	1	Yes	No	46
ST-1002	42.18341	-79.70716			303.0		303.0	UNT to French Creek	Class C	05010004	Pa 84-5-1	1	Yes	No	68, 63
TT Ditch 001	42.19596	-79.7365			310.0	310.0		Unnamed	Unmapped	04120101	—	1	No	No	22
TT Ditch 002	42.19594	-79.7362			760.0	760.0		Unnamed	Unmapped	04120101	—	1	No	No	22
TT Ditch 003	42.19456	-79.7498			176.0	176.0		Unnamed	Unmapped	04120101	—	1	No	No	10
TT Ditch 004	42.19478	-79.7490			882.0	882.0		Unnamed	Unmapped	04120101	—	1	No	No	10
TT Stream 001	42.18742	-79.7521			154.0		154.0	Unnamed	Unmapped	04120101	—	1	No	No	7

<sup>1</sup> Delineation ID assigned by Fisher Associates or EDR field staff. Due to their location within wetland SR-8, streams ST-1001 and ST-1002 were only delineated approximately 100-feet to either side of proposed Project components that cross these streams. Therefore, only those portions that were digitized are included in the streams calculations.

<sup>2</sup> Stream type is based upon the Cowardin et al. (1979) classification system: R2 = lower perennial stream, R3 = upper perennial stream, R4 = intermittent stream, R6 = ephemeral stream

<sup>3</sup> UNT = Unnamed Tributary

<sup>4</sup> Based on existing NYSDEC stream mapping.

Delineation ID <sup>1</sup>	Latitude of Centroid	Longitude of Centroid	Linear Feet of Stream Within Study Area by Type <sup>2</sup>					Stream Name <sup>3</sup>	NYSDEC Stream Class <sup>4</sup>	HUC 8	Waterbody Index Number (WIN) <sup>5</sup>	Stream Order <sup>6</sup>	Anticipated Federal Jurisdiction <sup>7</sup>	State Jurisdiction <sup>8</sup>	Appendix A: Figure 7 Sheet Number(s)										
			R2	R3	R4	R6	Total																		
<sup>5</sup> See 6 NYCRR Parts 800-941																									
<sup>6</sup> Stream order was determined using Strahler methods																									
<sup>7</sup> Based on delineation of streams classified as R2 = lower perennial stream, R3 = upper perennial stream, R4 = intermittent stream. Final jurisdictional determination to be made by the USACE																									
<sup>8</sup> Based on Final ORES Surface Waters Jurisdictional Determination letter dated April 19, 2021 (Appendix F). See Sections 2.2, 3.3, and 5.0 for additional information.																									
<sup>9</sup> Only the perennial features of Stream ST-55 are identified by ORES as state jurisdictional. See Figure 7 for additional information.																									

Descriptions of the delineated wetlands and streams within the Study Area are provided below in Sections 4.2.1 and 4.2.2, respectively. Representative photographs of the wetland and stream community types found within the study are included in Appendix C. The presumed jurisdictional status of all wetlands and streams within the Study Area is discussed in Section 5.0.

#### **4.2.1    Wetlands**

##### **4.2.1.1    Wetland Descriptions**

Within the Study Area, EDR and Fisher Associates identified 147 wetlands totaling 382.0 acres. Descriptions of each wetland community type are presented below. Data were collected from sample plots in all delineated wetlands and recorded on USACE Routine Wetland Determination forms (Appendix B). The data collected at each delineated wetland included dominant vegetation, hydrology indicators, and soil characteristics, which are presented below for each wetland community type. Note that many wetlands identified contained more than one community type. For all delineated wetlands within the Study Area, Table 4 indicates the area occupied by each community type.

*Emergent Wetlands (PEM) – (Photos 1 through 3 in Appendix C).*

A total of 98 wetlands identified within the Study Area contained areas dominated by palustrine emergent vegetation. These wetlands were typically located in depressional areas within or adjacent to active agricultural fields or within the floodplains of streams. The emergent wetlands on site were characterized by the dominance of erect rooted herbaceous wetland plants, including reed canary grass (*Phalaris arundinacea*), needle spike rush (*Eleocharis acicularis*), broad-leaved cattail (*Typha latifolia*), tussock sedge (*Carex stricta*), sweet-scented Joe-Pye weed (*Eutrochium purpureum*), water sedge (*Carex aquatilis*), forget-me-not (*Myosotis scorpioides*), common reed (*Phragmites australis*), American golden-saxifrage (*Chrysosplenium americanum*), sallow sedge (*Carex lurida*), fox sedge (*Carex vulpinoidea*), spotted jewelweed (*Impatiens capensis*), marsh purslane (*Ludwigia palustris*), creeping Jenny (*Lysimachia nummularia*), soft rush (*Juncus effusus*), and sensitive fern (*Onoclea sensibilis*). Indicators of wetland hydrology in the emergent wetlands included standing surface water (A1), a high water table (A2), saturation (A3), water marks (B1), sediment deposits (B2), drift deposits (B3), inundation visible on aerial imagery (B7), water-stained leaves (B9), and hydrogen sulfide odor (C1), oxidized rhizospheres on living roots (C3), and presence of reduced iron (C4). Hydric soil indicators observed within the emergent wetlands included a depleted matrix (F3), depleted below surface (A11), depleted dark surface (F7), sandy redox (S5), sandy mucky mineral soil (S1), and hydrogen sulfide odor (A4). Soils typically had a black to dark gray (10YR 2/1, 10YR 2/2, 10YR 3/1, 10YR 3/2, 10YR 4/1, 10 YR 4/2, 10 YR 5/1, 10 YR 6/1) matrix and dark brown to brownish yellow (7.5YR 3/4, 7.5YR 4/6, 10YR 4/6, 10YR 5/6, 10YR 5/8, 10YR 6/8) redox concentrations. The texture of soils in the emergent wetlands was generally characterized as clay loam, loam, or clay. The transitional zone between emergent wetlands and upland fields was

typically dictated by site topography. With the increase in elevation, soils were no longer saturated and changed from black and dark grey colors to browns that did not exhibit oxidized rhizospheres or a high water table. Plant communities generally transitioned from being dominated by wetland species such as soft rush or sensitive fern to upland species such as red clover (*Trifolium pratense*), timothy grass (*Phleum pratense*), Canada goldenrod (*Solidago canadensis*), and common plantain (*Plantago major*).

#### *Forested Wetland (PFO) – (Photos 4 through 6 in Appendix C)*

In total, 63 of the wetlands identified within the Study Area were characterized by areas of broad-leaved deciduous forest vegetation. These wetlands were most often encountered in lowlands where water from surrounding higher elevation areas accumulates. Forested wetlands are characterized by the dominance of tree species greater than 20 feet tall. Dominant overstory species included yellow birch (*Betula alleghaniensis*), green ash (*Fraxinus pennsylvanica*), and red maple (*Acer rubrum*). Common shrub and sapling species in these wetlands included pussy willow (*Salix discolor*), gray dogwood (*Cornus racemosa*), and green ash. Herbaceous species in the forested wetlands included spotted jewelweed, sensitive fern, creeping Jenny, forget me not, cinnamon fern (*Osmunda cinnamomeum*), smooth goldenrod (*Solidago gigantea*), and American golden-saxifrage. Indicators of wetland hydrology included standing surface water (A1), a high water table (A2), saturation (A3), water-stained leaves (B9), hydrogen sulfide odor (C1), and oxidized rhizospheres on living roots (C3). Hydric soil indicators within these wetlands included a histosol (A1), hydrogen sulfide odor (A4), depleted below dark surface (A11), thick dark surface (A12), depleted matrix (F3), and a redox dark surface (F6). Soils typically had a black to grayish brown (10YR 2/1, 10YR 3/1, 10YR 3/2, 10YR 4/1, 10YR 5/2) matrix color and yellowish-red, strong brown, or brownish yellow (5YR 5/8, 10YR 5/6, 10YR 5/8, 10YR 6/8) redox concentrations. Texture of the forested wetland soils were generally characterized as clay loam, loam, and mucky loam. The wetland-upland transition was relatively abrupt, and generally followed site topography. Where not adjacent to active agricultural fields, adjacent uplands generally consisted of deciduous forest with an overstory dominated by eastern hemlock (*Tsuga canadensis*), white ash (*Fraxinus americana*), sugar maple (*Acer saccharum*), yellow birch, eastern hop-hornbeam (*Ostrya virginiana*), and American beech (*Fagus grandifolia*); a shrub layer dominated by hawthorn (*Crataegus x haemacarpa*), northern spicebush (*Lindera benzoin*), and white ash and American beech saplings; and a ground layer of Allegheny blackberry (*Rubus allegheniensis*), little hop clover (*Trifolium dubium*), Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*), sugar maple seedlings, and evergreen wood fern (*Dryopteris intermedia*).

#### *Scrub-Shrub Wetlands (PSS) – (Photos 7 through 9 in Appendix C)*

Twenty-seven wetlands within the Study Area included areas dominated by broad-leaved deciduous scrub-shrub vegetation. Scrub-shrub wetlands are characterized by dense stands of shrubs and saplings less than 20 feet tall. These wetlands were most often encountered where tree clearing within wetlands has removed the forest overstory or

in fallow fields that have become successional shrubland. Dominant shrub species included willows (*S. discolor*, *S. bebbiana*, *S. eriocephala*), silky dogwood (*Cornus amomum*), arrowwood (*Viburnum dentatum*), and green ash. Common herbaceous species in scrub-shrub wetlands included reed canary grass, sensitive fern, spotted jewelweed, sweet-scented Joe-Pye weed, cinnamon fern, and rice cutgrass (*Leersia oryzoides*). Evidence of wetland hydrology included standing surface water (A1), high water table (A2), saturation (A3), water-stained leaves (B9), hydrogen sulfide odor (C1), oxidized rhizospheres on living roots (C3), and presence of reduced iron (C4) in the soil. Hydric soil indicators within these scrub-shrub wetlands included a hydrogen sulfide odor (A4), depleted matrix (F3), and redox dark surface (F6). Soils generally exhibited a very dark gray to grayish brown (5YR 3/1, 10YR 2/1, 10YR 3/1, 10YR 4/2, 10YR 5/2) matrix and yellowish red to yellowish brown (5YR 4/6, 7.5YR 5/6, 7.5YR 5/8, 10YR 5/6, 10YR 5/8) redox concentrations. The texture of soils within the scrub-shrub wetlands was generally characterized as clay loam. Transitional zones were often associated with an abrupt change in vegetative cover to either a maintained area or forest cover. Adjacent shrub dominated uplands typically contained quaking aspen (*Populus tremuloides*), American witch-hazel (*Hamamelis virginiana*), multiflora rose (*Rosa multiflora*), Canada goldenrod, red clover, common plantain, and common velvet grass (*Holcus lanatus*).

#### Open Water (POW) – (Photos 10 through 12 in Appendix C)

Ten wetlands within the Study Area appeared to be man-made farm ponds, or other open water wetlands characterized by sparsely vegetated standing water. Dominant species along the edges of these open water areas included soft rush, fox sedge, Canada goldenrod, willow, reed canary grass, narrowleaf cattail, common boneset (*Eupatorium perfoliatum*), and rice cutgrass. Indicators of wetland hydrology in these wetlands included standing surface water (A1), high water table (A2), saturation (A3), water marks (B1), sediment deposits (B2), inundation visible on aerial imagery (B7), water-stained leaves (B9), drainage patterns (B10), aquatic fauna (B13), hydrogen sulfide odor (C1), and oxidized rhizospheres on living roots (C3). The soils within these open water wetlands exhibited a histosol (A1), hydrogen sulfide odor (A4), depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) with a black to gray (5YR 2.5/1, 10YR 2/1, 10YR 3/1, 10YR 3/2, 10YR 4/1, 10YR 6/1,) matrix and yellowish red to yellowish brown (5YR 4/6, 7.5YR 4/6, 10YR 5/8) redox concentrations. The texture of soils within the open water wetlands was characterized as clay loam, clay, and loam. The wetland-upland transitions were typically abrupt, and clearly defined by the banks of the ponds. Adjacent uplands generally consisted of pastureland, disturbed/developed land, and/or successional communities, with dominant plants including Canada goldenrod, white clover (*Trifolium repens*), Kentucky blue grass (*Poa pratensis*), silver-leaf cinquefoil (*Potentilla argentea*), and meadow hawkweed (*Hieracium caespitosum*).

#### **4.2.2 Streams**

Within the Study Area, EDR and Fisher Associates identified 129 lower perennial, upper perennial, intermittent, and ephemeral stream segments totaling approximately 75,325 linear feet. Most of the streams within the Study Area are headwater tributaries of larger systems flowing through the lowlands and eventually draining to either Twentymile Creek or French Creek. Data regarding stream gradient (gentle, moderate, or steep), stream bank and channel width, water depth, stream bed substrate, in-stream cover, and biological indicators were collected and recorded on stream inventory forms (Appendix B). Representative photographs of the stream community types found within the Study Area are included in Appendix C. The characteristics of the delineated streams are summarized below by stream type. Note that many streams identified contained multiple flow regime classifications along their length (see Table 5).

##### *Ephemeral Streams (R6) – (Photos 13 through 15 in Appendix C)*

The 63 ephemeral stream reaches delineated within the Study Area had bank widths of up to 5 feet, and channel widths up to 3 feet. At the time of delineation all but one of these streams were dry. Ephemeral streams within the Study Area had gradients that ranged from gentle to steep, and were characterized by undercut banks, overhanging vegetation, and woody debris. Substrate in these streams generally consisted of boulders, cobbles, gravel, sand, silt, and clay. Streams were classified as ephemeral due to a variety of reasons (see data sheets in Appendix B), but they often lacked water and had little to no biological indicators.

Included among these ephemeral streams are five drainage ditches delineated in the Study Area that are classified as ephemeral non-jurisdictional drainage features, because they flow in direct response to precipitation events (Photos 25 through 27 in Appendix C). Drainage ditches on site had well defined banks with uniform widths and depths due to human excavation. Geomorphic and hydrologic indicators typically associated with streams such as sinuosity, in channel structures, floodplains, alluvial deposits, baseflow, and organic debris lines were not present.

##### *Intermittent Streams (R4) – (Photos 16 through 18 in Appendix C)*

The 44 intermittent stream reaches delineated within the Study Area had bank widths ranging from 1 to 12 feet, and channel widths up to 6 feet. At the time of delineation these streams had water depths ranging from 0 to 4 inches. Intermittent streams within the Study Area had gradients that ranged from gentle to steep, and were characterized by undercut banks, overhanging vegetation, woody debris, and deep pools. Substrate in these streams generally consisted of bedrock, boulders, cobbles, gravel, sand, silt, and clay. Although water was flowing in some of these streams at the time of the delineation, such observations were often made after a recent rainfall. Streams were classified as intermittent due to a variety of reasons, but they often lacked prolonged baseflow, had weak sinuosity, and had few or no biological indicators (see data sheets in Appendix B for additional information).

*Upper Perennial Streams (R3) – (Photos 19 through 21 in Appendix C)*

EDR delineated 20 stream reaches characterized as upper perennial within the Study Area. These streams had bank widths ranging from 2 to 40 feet, and channel widths ranging from 1 to 5 feet. At the time of delineation these streams had water depths ranging from 0 to 18 inches, and were characterized by a gentle to moderate gradient, undercut banks, overhanging vegetation, woody debris and deep pools within the channel. Substrate consisted of bedrock, boulders, cobbles, gravel, sand, silt, and clay. The larger particle sizes of the stream substrate materials were in stark contrast to the finer-textured clayey loam soils in the adjacent uplands. Observed biological indicators of perennial streams included minnows, crayfish, a diverse macroinvertebrate community, and benthic algae.

*Lower Perennial Streams (R2) – (Photos 22 through 24 in Appendix C)*

EDR delineated two stream reaches with lower perennial characteristics within the Study Area, one of which corresponds with Twentymile Creek (as shown on the NYSDEC stream mapping) and the other which is an unnamed tributary to Twentymile Creek. The delineated stream corresponding to Twentymile Creek had bank widths ranging from 20 to 30 feet and channel widths ranging from 10 to 20 feet. The other delineated perennial stream had a bank width of 5 feet and a channel width of 2 feet. At the time of delineation these streams had water depths ranging from 1-6 inches, and were characterized by a gentle to moderate gradient, undercut banks, overhanging vegetation, woody debris and deep pools within the channel. Substrate consisted of bedrock, cobbles, gravel, sand, silt, and clay. These streams had moderate to strong sinuosity and exhibited robust floodplain systems. Biological indicators observed within lower perennial streams included minnows, crayfish, benthic algae, and diverse macroinvertebrate communities.

## **5.0 CONCLUSIONS**

A total of 147 wetlands were delineated within the Study Area. These wetlands were identified based on the dominance of hydrophytic vegetation, the presence of hydric soils, and indicators of wetland hydrology. The delineated areas include open water, emergent, scrub-shrub, and forested wetland communities, and total approximately 382 acres. A total of 129 stream segments were also identified within the Study Area. The delineated streams include ephemeral, intermittent, and perennial water courses. A total of approximately 75,325 linear feet (14.3 miles) of stream channels were delineated within the Study Area.

It is assumed that all but two of the wetlands delineated within the Study Area could be considered federally jurisdictional WOTUS under Section 404 of the Clean Water Act and the Navigable Waters Rule. Of the two wetlands, FA Wetland 009 appears to be a man-made ditch through upland and FA Wetland 031 appears to be an isolated pond, both of which are considered non-jurisdictional under the Navigable Waters Rule. Similarly, all of the delineated perennial and intermittent streams within the Study Area are also considered to be jurisdictional under Section 404. Delineated ephemeral streams are assumed to be non-jurisdictional under Section 404 because these drainages do

not exhibit the characteristics of jurisdictional wetlands or streams as defined by the Navigable Waters Rule. In addition, there are no traditional navigable waters on site, so none of the delineated WOTUS would be considered jurisdictional under Section 10 of the Rivers and Harbors Act. Wetlands and streams considered to be non-jurisdictional are indicated in Figure 7. However, final federal jurisdictional determinations for all wetlands and streams delineated within the Study Area must be made by USACE.

In accordance with the Section 94-c regulations, a copy of the draft Wetland and Stream Delineation Report and associated GIS shapefiles was provided to the New York State Office of Renewable Energy Siting (ORES) on January 22, 2021. The final ORES Jurisdictional Determination letters were received on April 19, 2021 (see Appendix F).

ORES identified 24 of the delineated wetlands to be state jurisdictional pursuant to Article 24 of the ECL due to their occurrence within, or hydrologic connection to mapped NYSDEC Freshwater Wetlands or due to their size exceeding 12.4 acres or hydrologic connection to wetlands exceeding 12.4 acres (FA Wetland 006, FA Wetland 007, FA Wetland 012, FA Wetland 013, FA Wetland 015, FA Wetland 016, FA Wetland 019, Wetland 025, FA Wetland 026, FA Wetland 027, FA Wetland 028, FA Wetland 029, FA Wetland 030, Wetland 23, Wetland 38, Wetland 46, Wetland 51, Wetland 53, Wetland 83, Wetland 86, Wetland 87<sup>1</sup>, Wetland 98, Wetland 106, and Wetland 108). In addition, ORES determined six delineated streams (ST-02, ST-04, ST-08, ST-20, ST-55, and ST-78)<sup>2</sup> are protected under Article 15 of the ECL. See Figure 7 for locations of state jurisdictional wetlands and streams.

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<sup>1</sup> Only the delineated PFO portion of Wetland 87 was determined to be state jurisdictional.

<sup>2</sup> Not all delineated features of each stream were determined to be state jurisdictional.

## 6.0 REFERENCES

- Chautauqua County Office of Real Property Tax Services. 2019. *Chautauqua County Tax Parcels* [shapefile]. Available at: <http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1300> (Accessed October 25, 2020).
- Code of Federal Regulations (CFR). 1986. *Navigation and Navigable Waters: Definition of Navigable Waters of the United States*. 33 CFR 329.11. Available at: <https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=2fcc86a0ae4919652ccaf4d67829679d&rqn=div5&view=text&node=33:3.0.1.1.35&idno=33> (Accessed August 2020).
- Cowardin, L.M., V. Carter, F.C. Goblet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. U.S. Fish and Wildlife Service. Washington, D.C.
- Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers: Waterways Experiment Station. Vicksburg, MS.
- Federal Emergency Management Agency (FEMA). 2021. *FEMA Flood Map Service Center*. Available at: <https://msc.fema.gov/portal/home> (Accessed January 2021).
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2018. *The National Wetland Plant List: New York State; 2018 Wetland Ratings*. Phytoneuron 2016-30: 1-17. Available at: [http://wetland-plants.usace.army.mil/nwpl\\_static/v34/home/home.html](http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html) (Accessed September 2020).
- Munsell Color. 2009. Munsell Soil Color Book. X-Rite, Incorporated. Grand Rapids, MI.
- National Oceanic and Atmospheric Administration (NOAA). 2020. *Temperature and Precipitation Summary for Dunkirk Chautauqua County Airport, Chautauqua, NY, 2000-2020*. NOAA Regional Climate Center. Available at: <http://agacis.rcc-acis.org/> (Accessed September 2020).
- Natural Resources Conservation Service (NRCS). 1994. *Soil Survey of Chautauqua County, New York*. United States Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Available at: [https://www.nrcs.usda.gov/internet/FSE\\_MANUSCRIPTS/new\\_york/NY013/0/chautauqua.pdf](https://www.nrcs.usda.gov/internet/FSE_MANUSCRIPTS/new_york/NY013/0/chautauqua.pdf) (Accessed November 2020).
- NRCS. 2020. *New York Portion of the 2020 National Hydric Soil List*. Available at: [https://efotg.sc.egov.usda.gov/references/Public/IL/State\\_List\\_NRCS\\_Hydric\\_Soils\\_Report\\_Dynamic\\_Data.html](https://efotg.sc.egov.usda.gov/references/Public/IL/State_List_NRCS_Hydric_Soils_Report_Dynamic_Data.html) (Accessed September 2020).
- New York State Department of Environmental Conservation (NYSDEC). 1995. *New York State Freshwater Wetland Delineation Manual*. July 1995.
- North Carolina Division of Water Quality (NC DWQ). 2010. *Methodology for Identification of Intermittent and Perennial Streams and their Origins*. Version 4.11. Department of Environment and Natural Resources. Raleigh, NC.
- Soil Survey Staff. 2020. *Web Soil Survey*. Natural Resources Conservation Service, United States Department of Agriculture Available at: <http://websoilsurvey.nrcs.usda.gov/> (Accessed August 2020).
- United States Army Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. Version 2.0. ERDC/EL TR-12-1. Vicksburg, MS.

USACE and U.S. Environmental Protection Agency (USEPA). 2020. *The Navigable Waters Protection Rule: Definition of "Waters of the United States"*. Pre-Publication Notice. Available at: <https://www.epa.gov/nwpr/final-rule-navigable-waters-protection-rule> (Accessed June 2020).

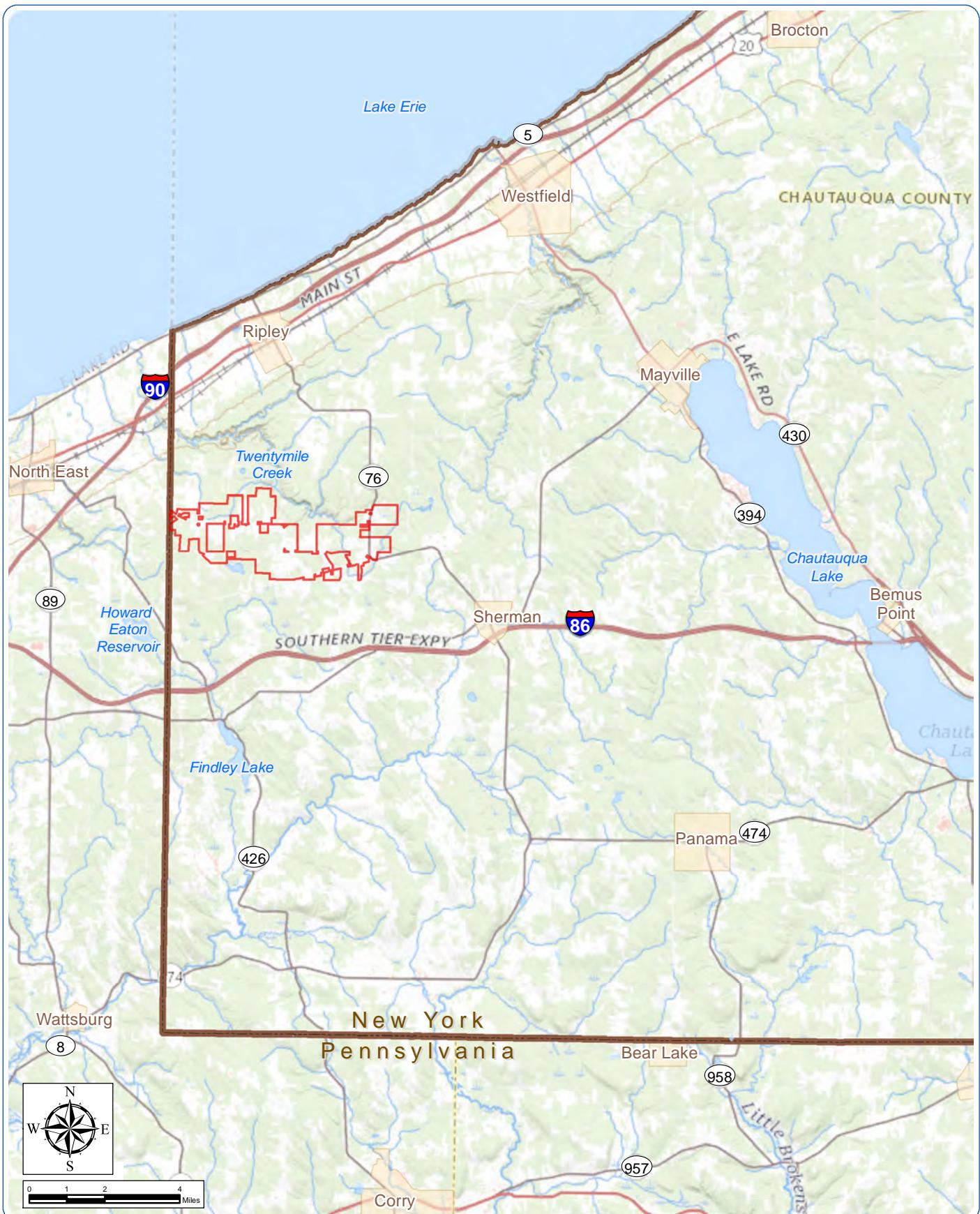
United States Environmental Protection Agency (USEPA). 2001. Interagency Memorandum from Gary S. Guzy (General Counsel for the U.S. Environmental Protection Agency) and Robert M. Anderson (Chief Counsel for the U.S. Army Corps of Engineers). Re: *Supreme Court Ruling Concerning CWA Jurisdiction over Isolated Waters*.

Weldy, T., D. Werier, and A. Nelson. 2020. *New York Flora Atlas*. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute, University of South Florida]. New York Flora Association. Albany, NY. Available at: <http://newyork.plantatlas.usf.edu/> (Last updated July 16, 2020; Accessed September 2020).

Yang, L., S. Jin, P. Danielson, C.G. Homer, L. Gass, S.M. Bender, A. Case, C. Costello, J.A. Dewitz, J.A. Fry, M. Funk, B.J. Granneman, G.C. Liknes, M.B. Rigge, and G. Xian. 2018. *A New Generation of the United States National Land Cover Database—Requirements, Research Priorities, Design, and Implementation Strategies*. Journal of Photogrammetry and Remote Sensing 146: 108-123. Available at: <https://doi.org/10.1016/j.isprsjprs.2018.09.006> (Accessed December 2019).

## **APPENDIX A**

### Figures



## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 1: Regional Project Location

Facility Area

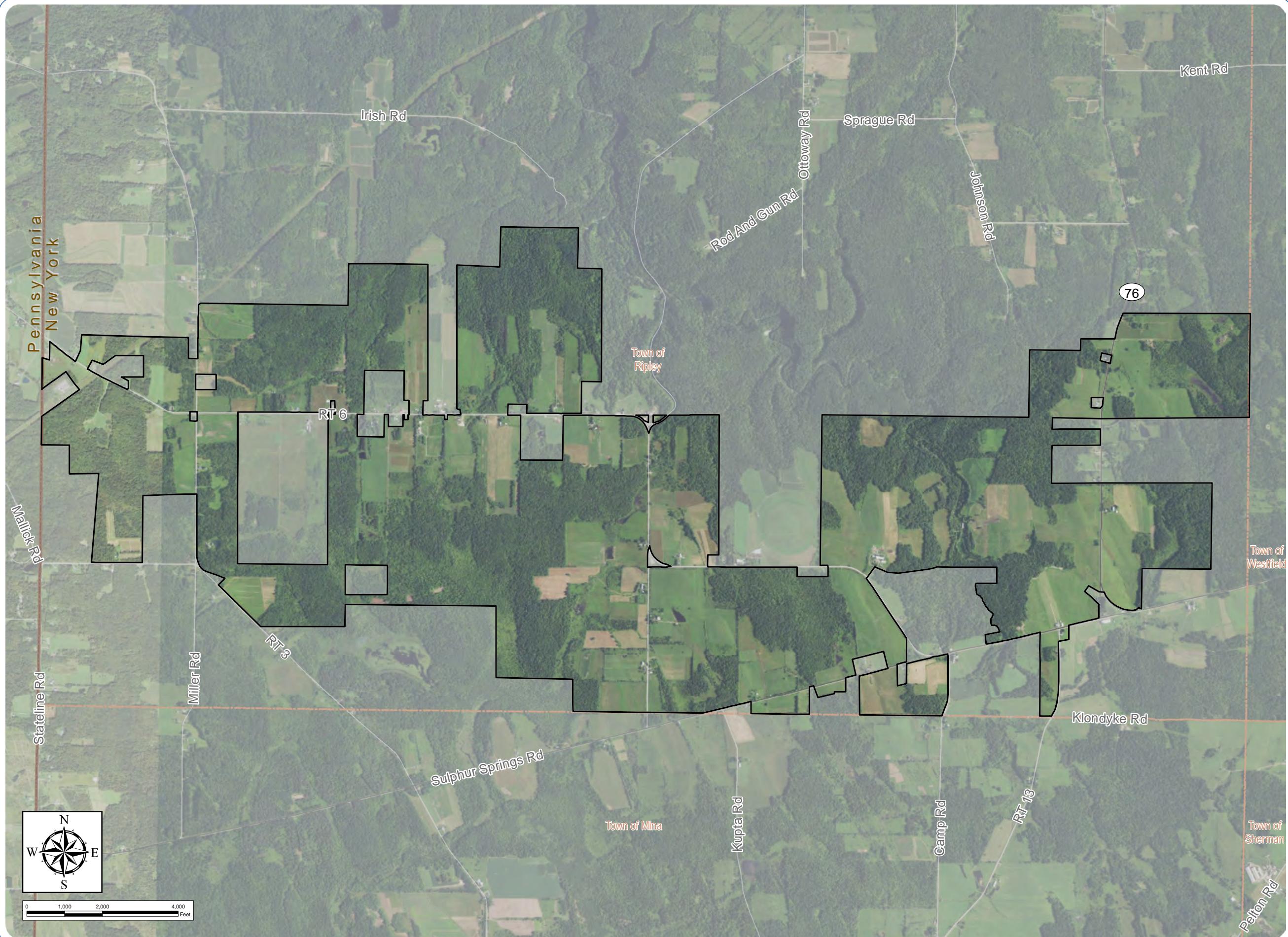
Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo" map service.  
2. This map was generated in ArcMap on November 3, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 2: Facility Area



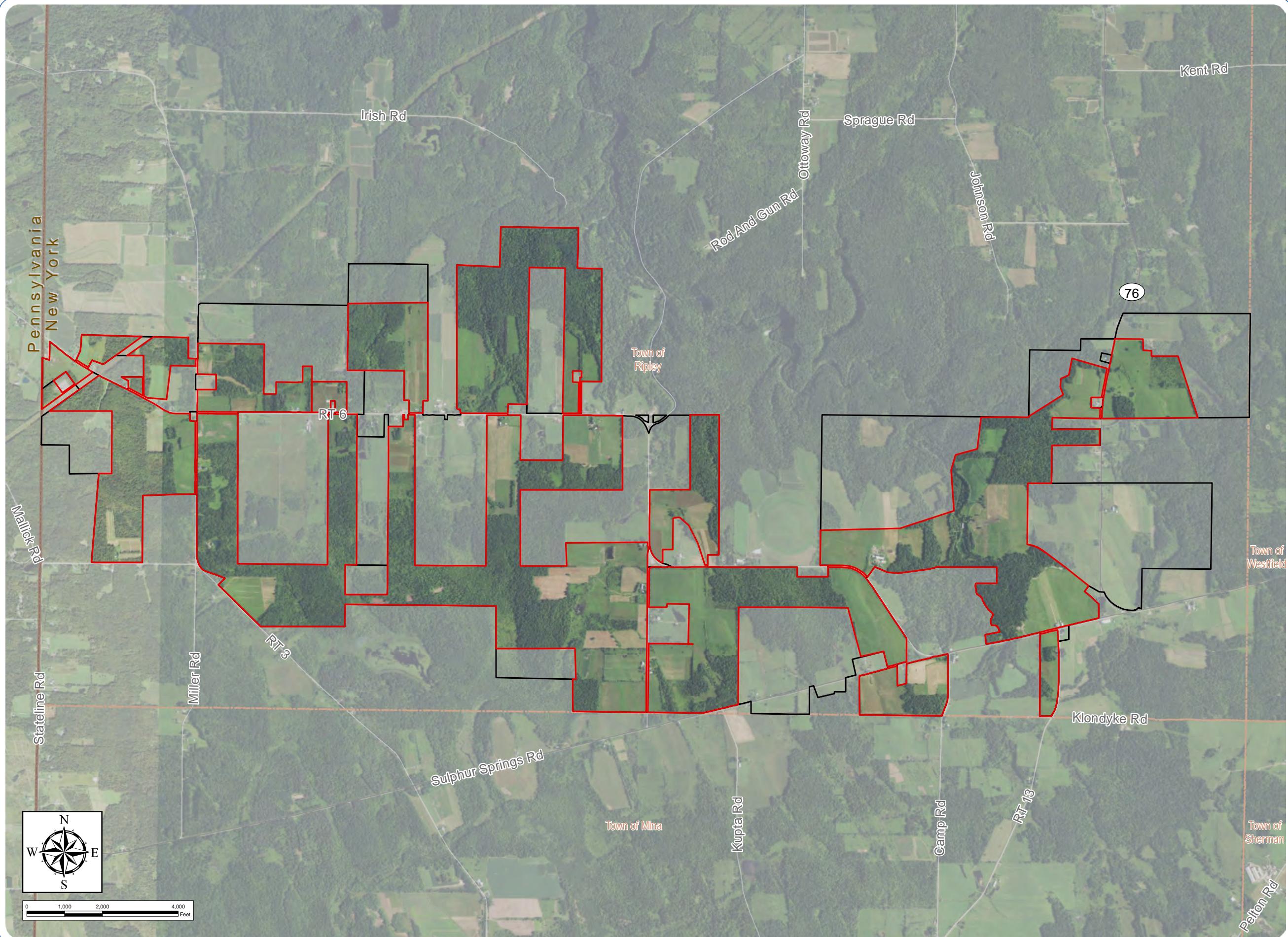
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## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

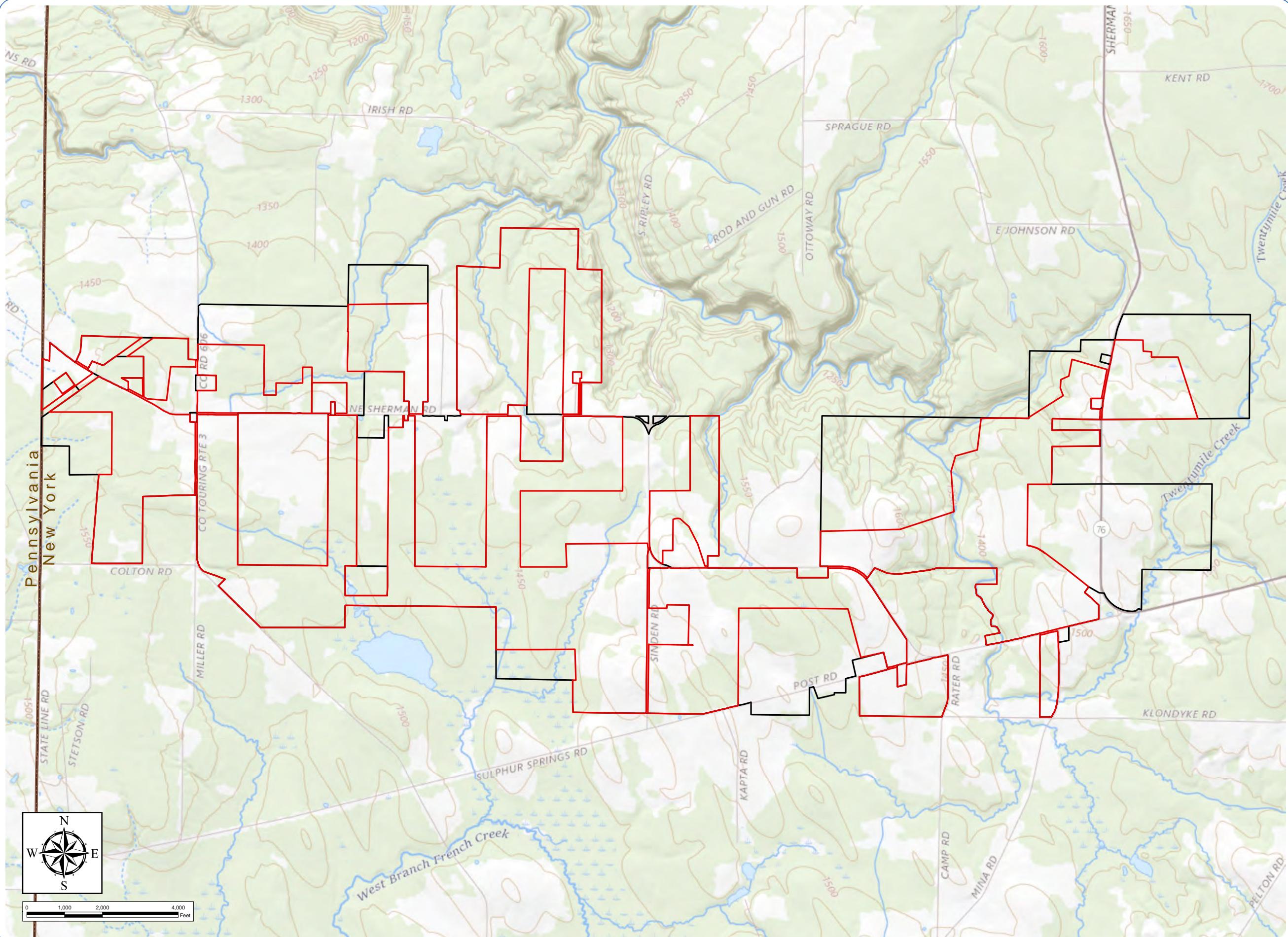
Figure 3: Delineation Study Area



## South Ripley Solar Project

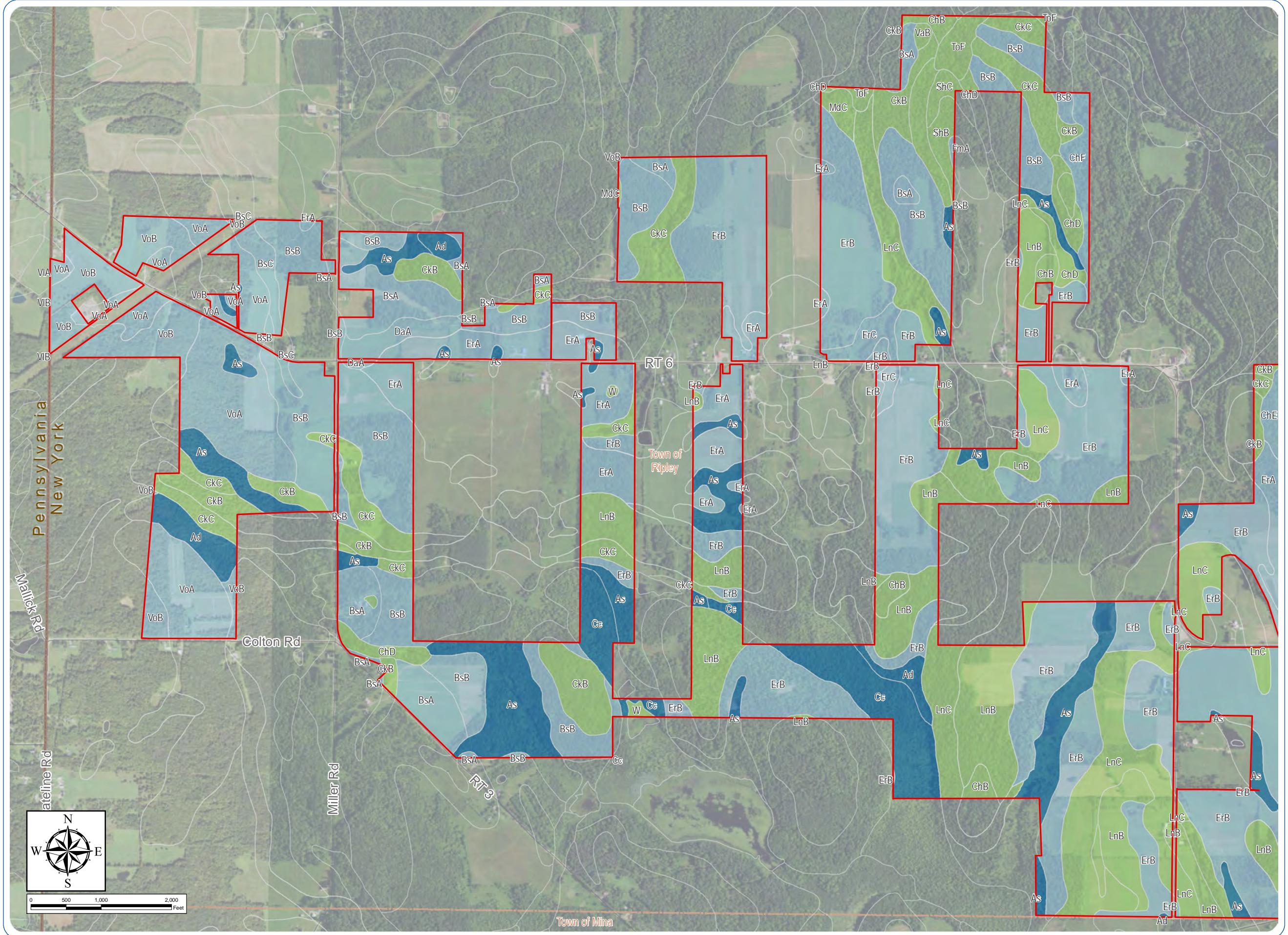
Town of Ripley, Chautauqua County, New York

Figure 4: Delineation Study Area Topography



Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo" map service. 2. This map was generated in ArcMap on November 6, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.





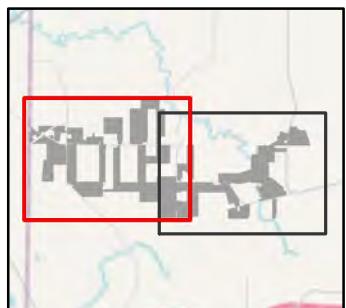
# South Ripley Solar Project

## Town of Ripley, Chautauqua County, New York

Figure 5: Study Area Soils

The legend consists of six entries, each with a colored or outlined square followed by a label:

- Hydric: A solid blue square.
- Potentially Hydric: A light blue square.
- Not Hydric: A solid green square.
- Delineation Study Area: An empty red square.
- Town Boundary: An orange dashed square.
- State Boundary: A black double-lined square.



Sheet 1 of 2

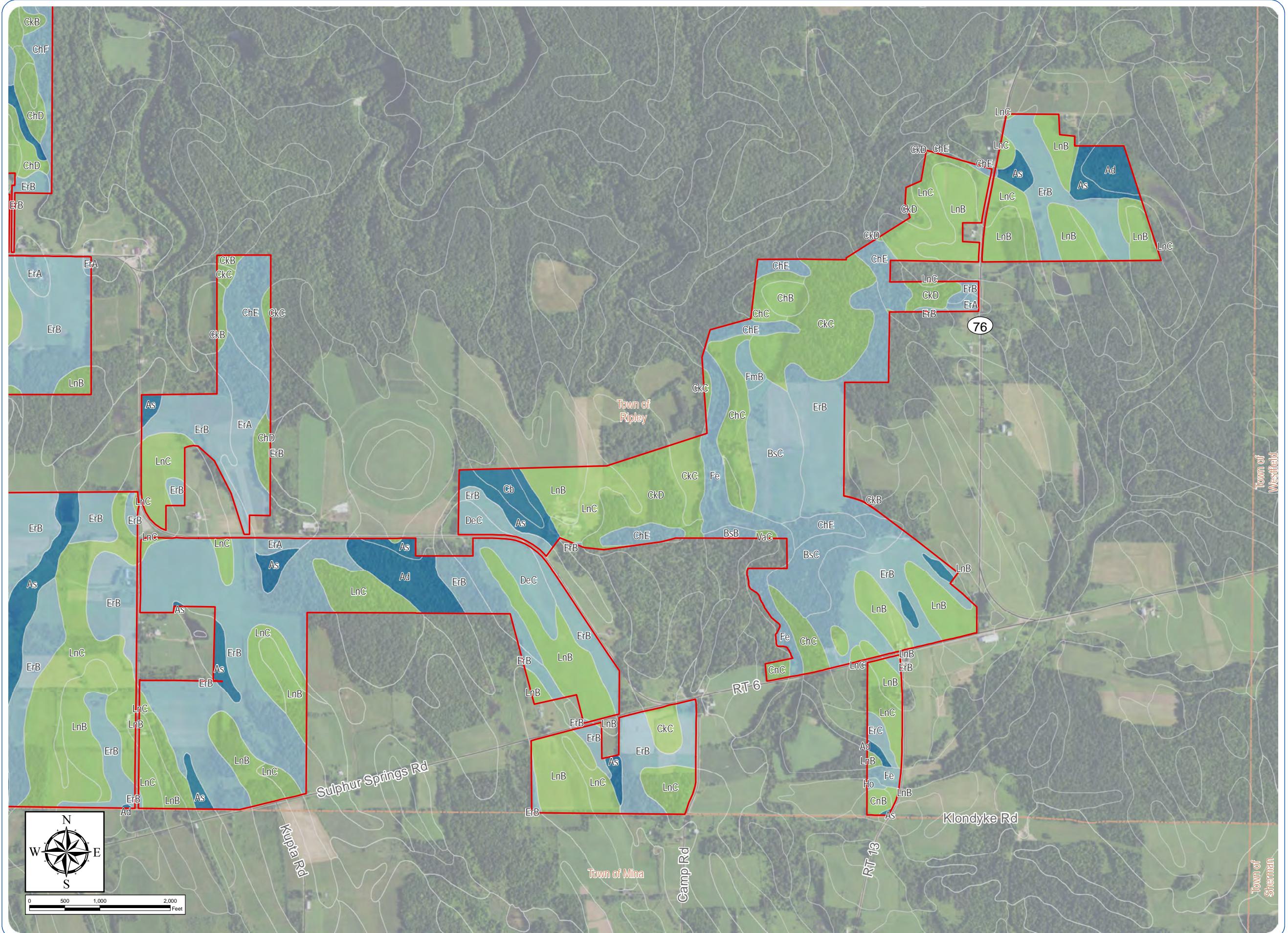
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## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

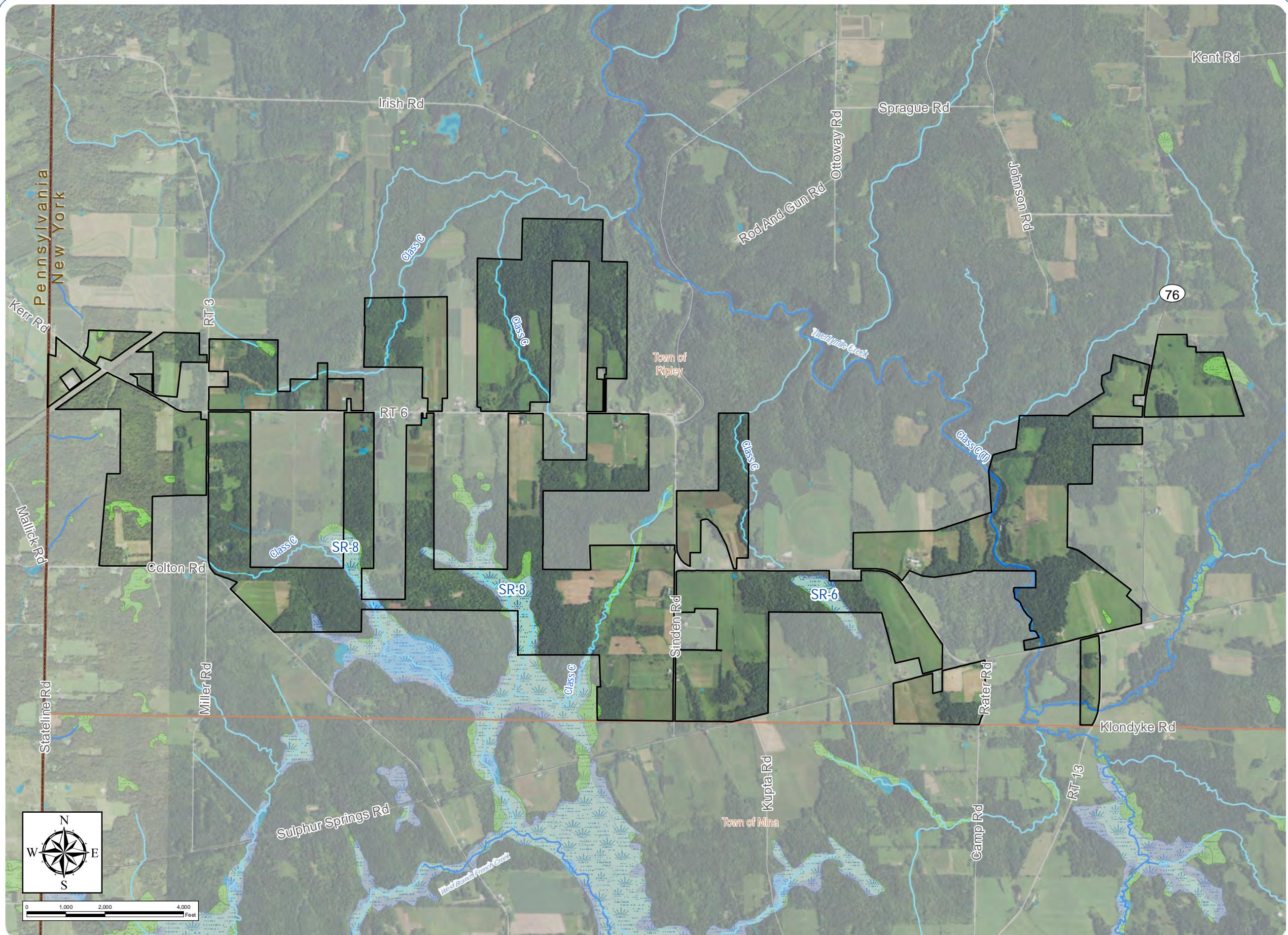
Figure 5: Study Area Soils



## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 6: Mapped Wetlands and Streams

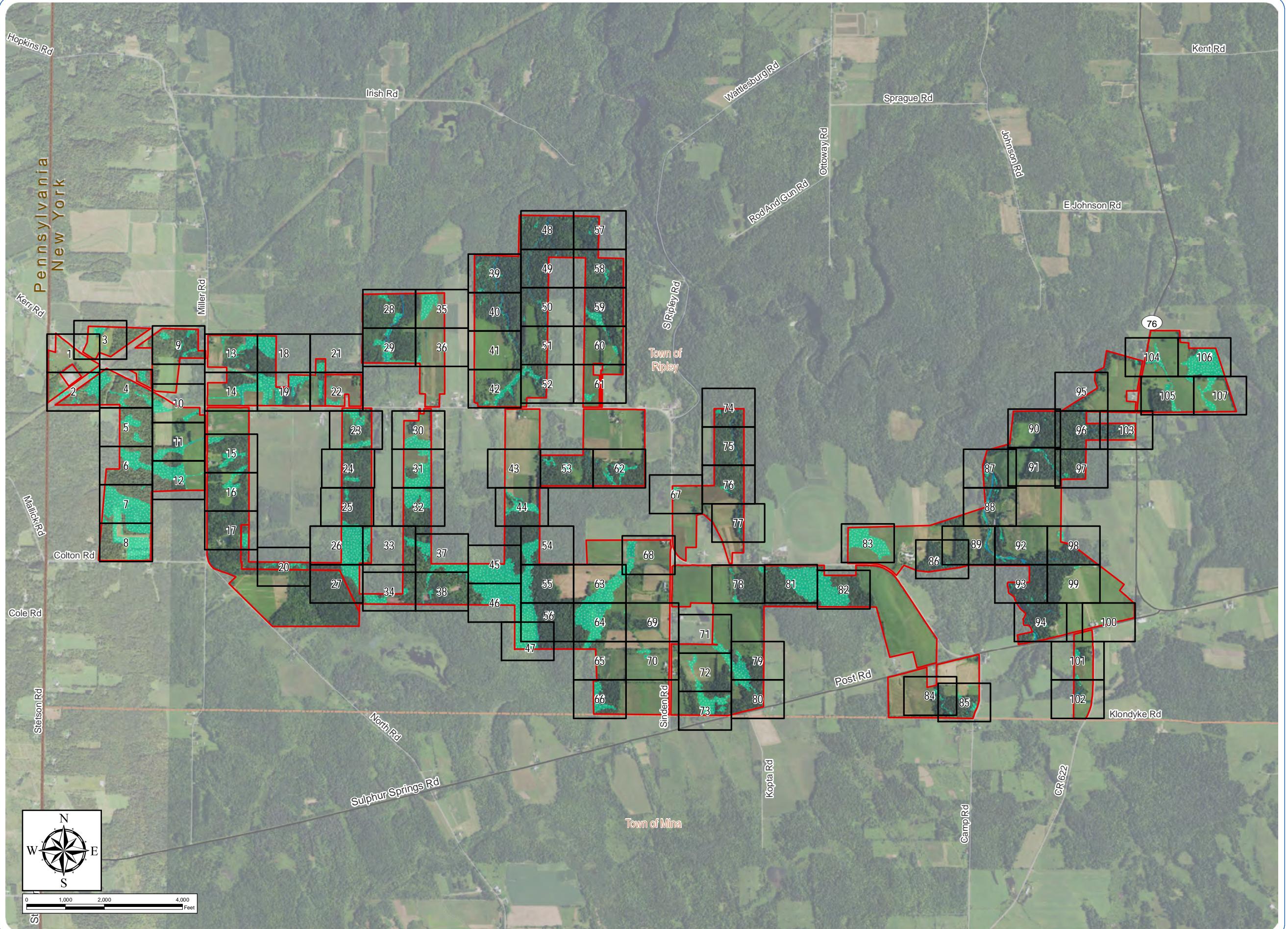


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams Index Map

- Approximate Stream
- Delineated Stream
- Delineated Wetland
- Delineation Study Area
- Town Boundary
- State Boundary



Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on January 19, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



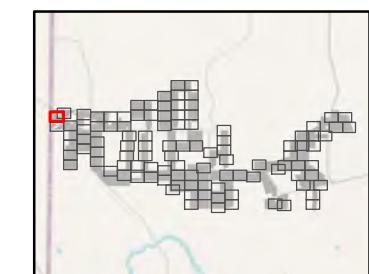
See Sheet 3

## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

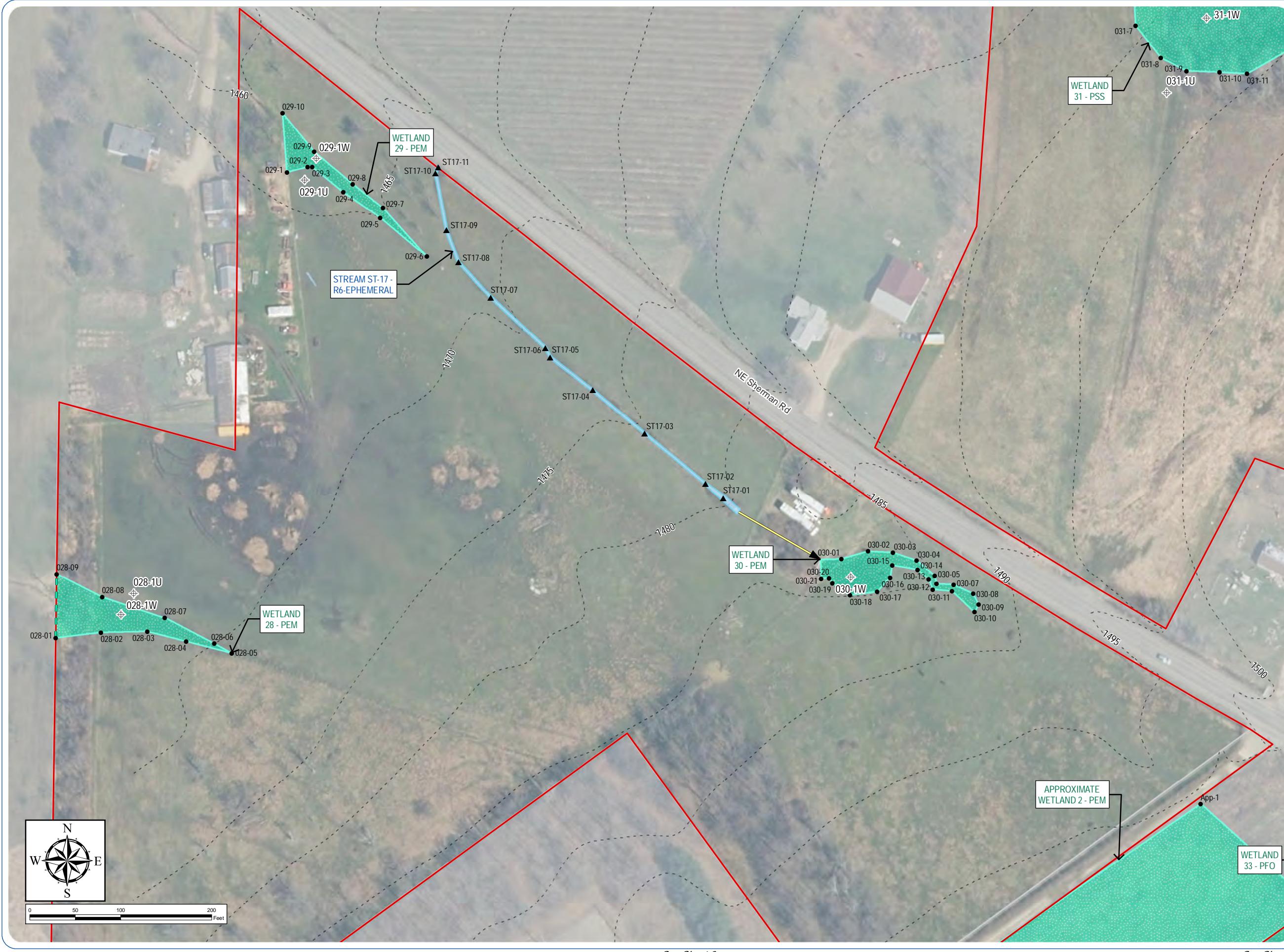
Figure 7: Delineated Wetlands and Streams

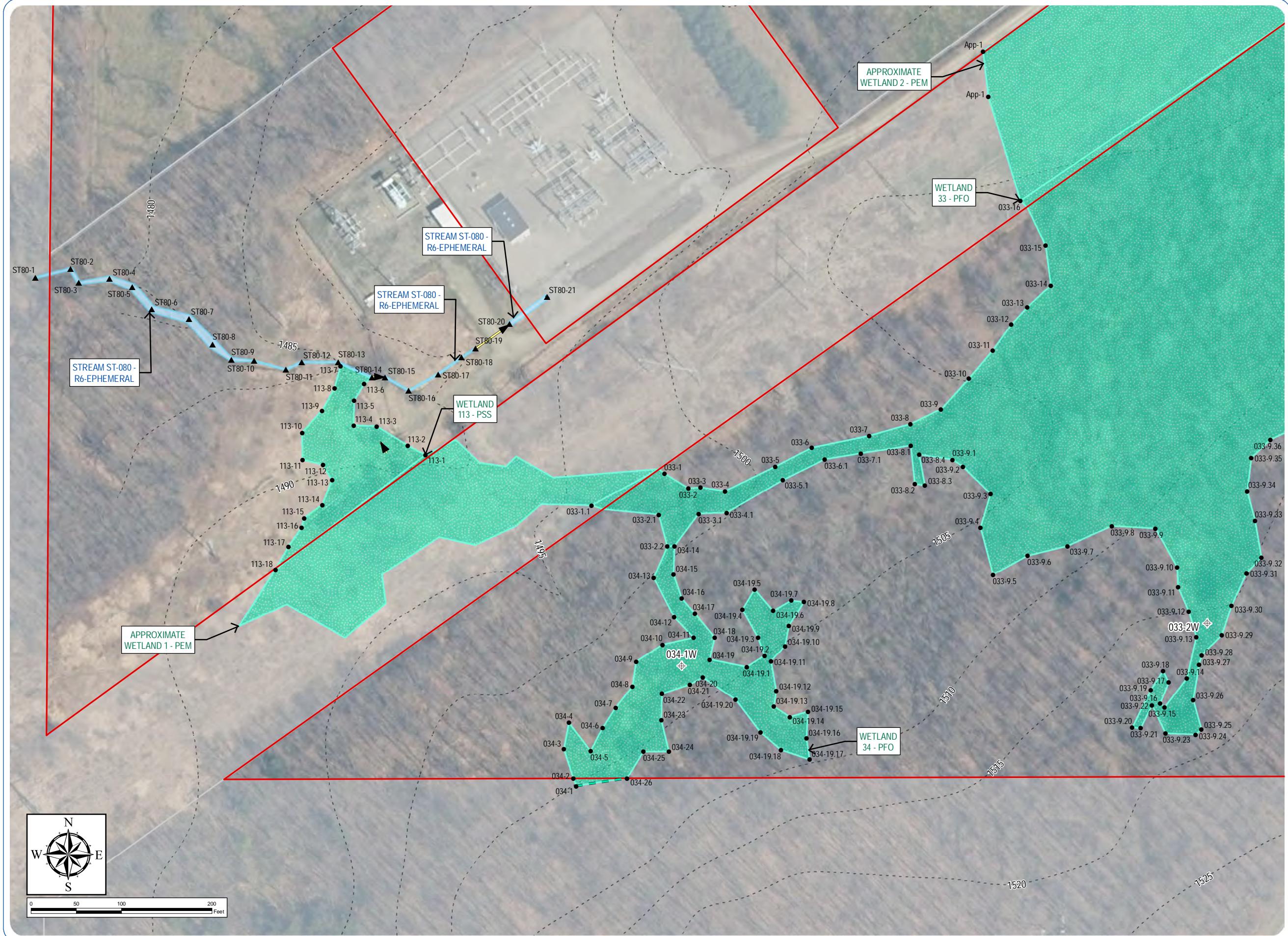
- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Wetland
- Stream Continues
- Wetland Continues
- - - 5ft Contour
- Culvert
- Delineated Stream Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 1 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



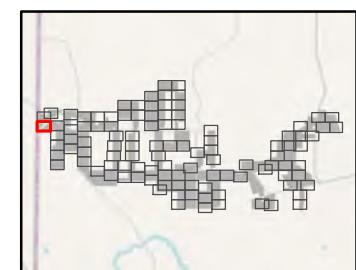


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- ◆ Datapoint Wetland
- Stream Continues
- Wetland Continues
- - - 5ft Contour
- Culvert
- Delineated Stream Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 2 of 107

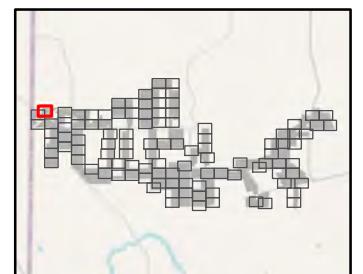
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# South Ripley Solar Project

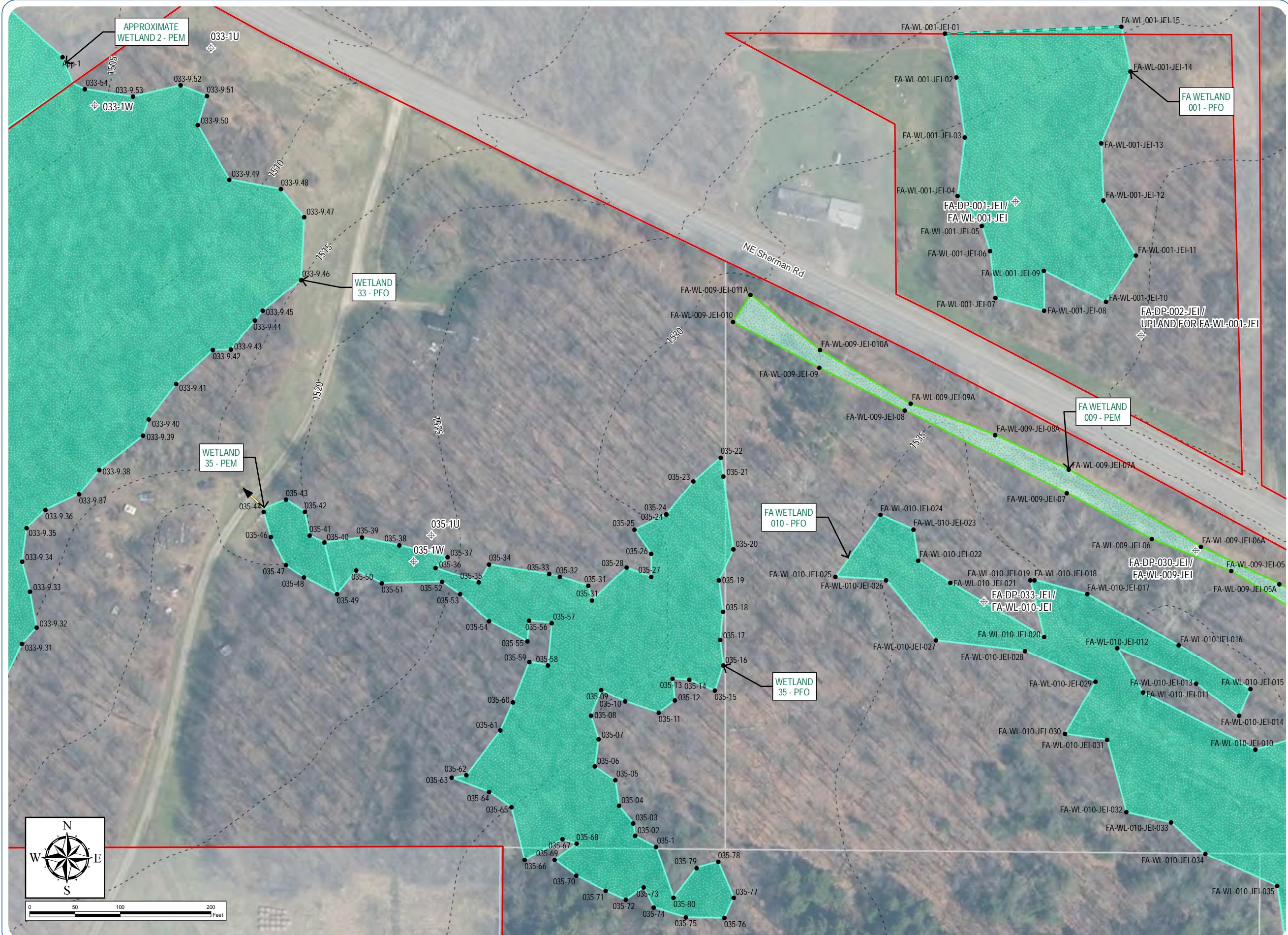
Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams



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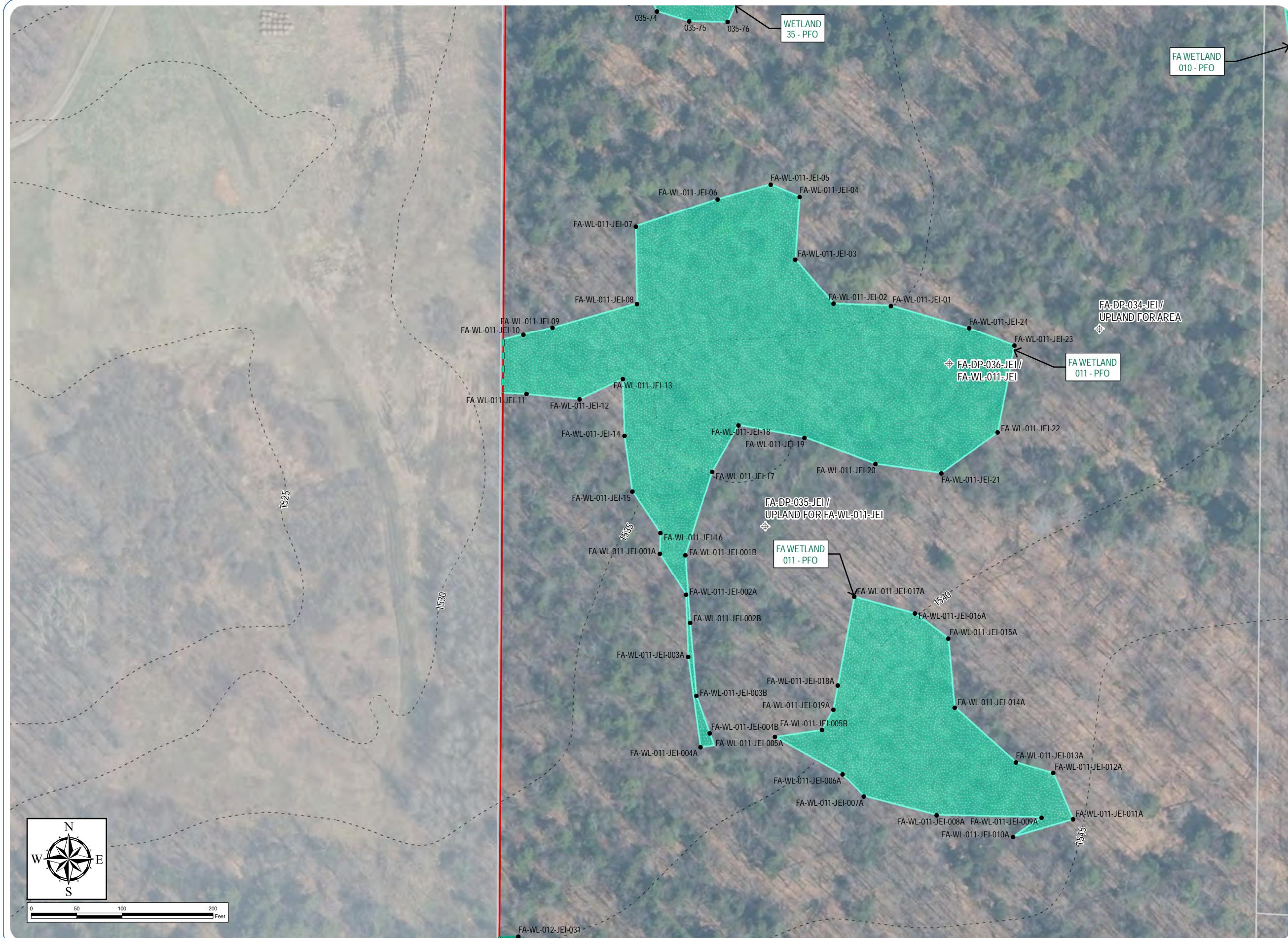




See Sheet 2

See Sheet 4

See Sheet 10



See Sheet 6

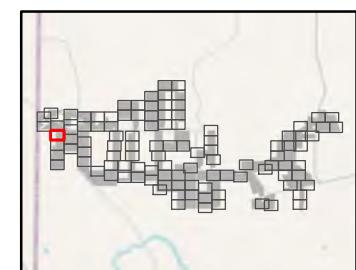
See Sheet 11

## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

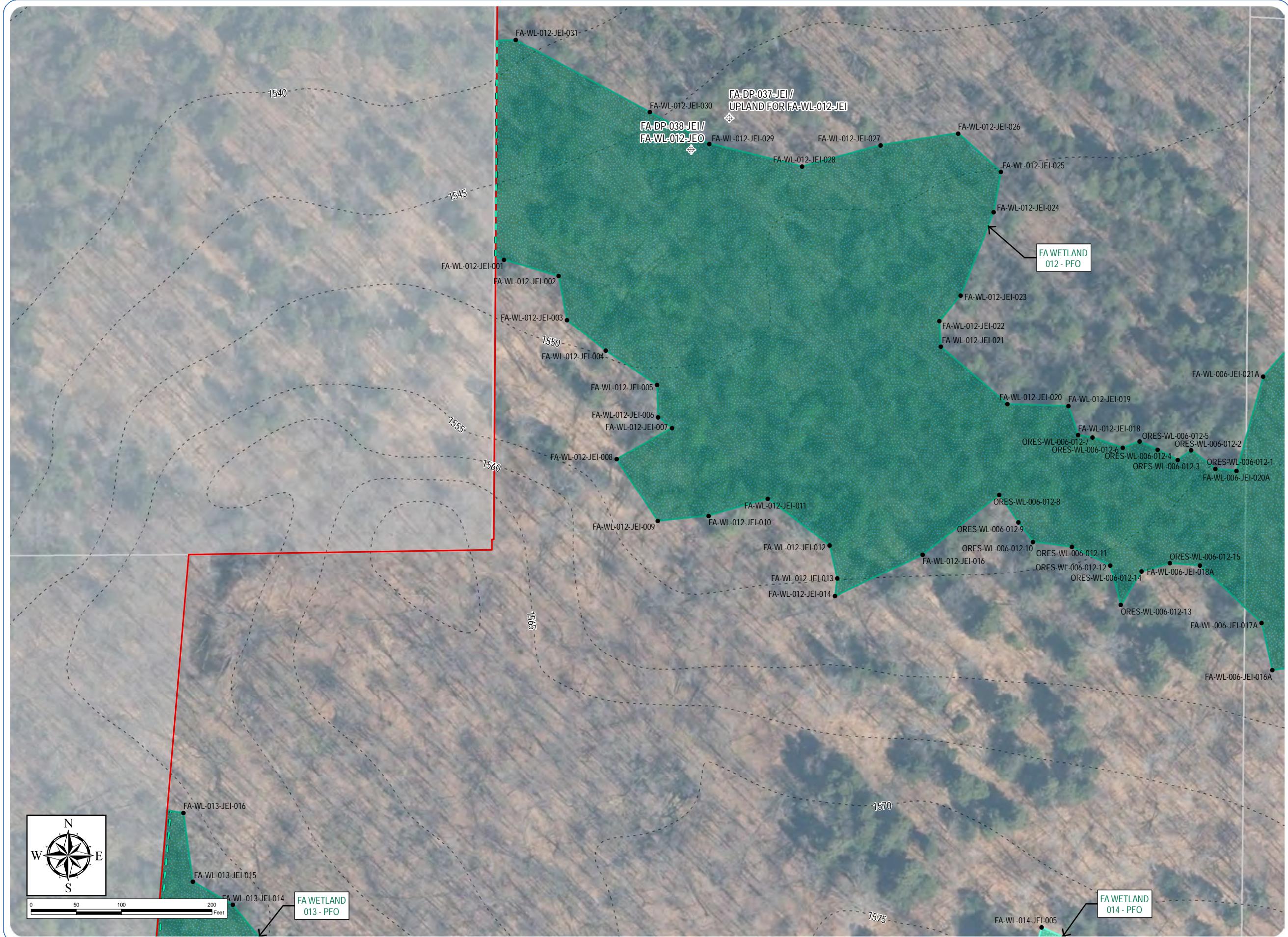
- Wetland Flag
- ◊ Datapoint Wetland
- ▬ Wetland Continues
- - - 5ft Contour
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- ▬ Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



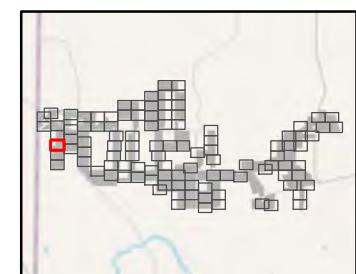


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- Wetland Flag
- ◊ Datapoint Wetland
- ▬ Wetland Continues
- - - 5ft Contour
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- ▬ Parcel Boundary
- ▬ Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 6

See Sheet 12

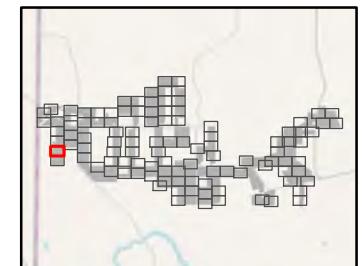


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- ◆ Datapoint Wetland
- Stream Continues
- Wetland Continues
- - - 5ft Contour
- Delineated Stream Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 7 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



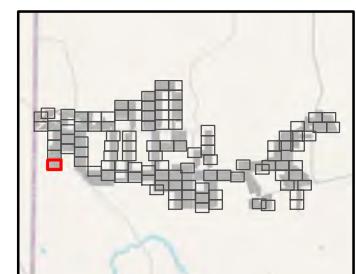


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- Wetland Flag
- ◊ Datapoint Wetland
- Wetland Continues
- - - 5ft Contour
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Red Box = Delineation Study Area



Sheet 8 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

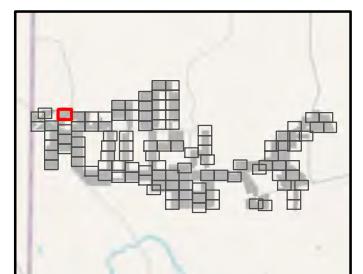
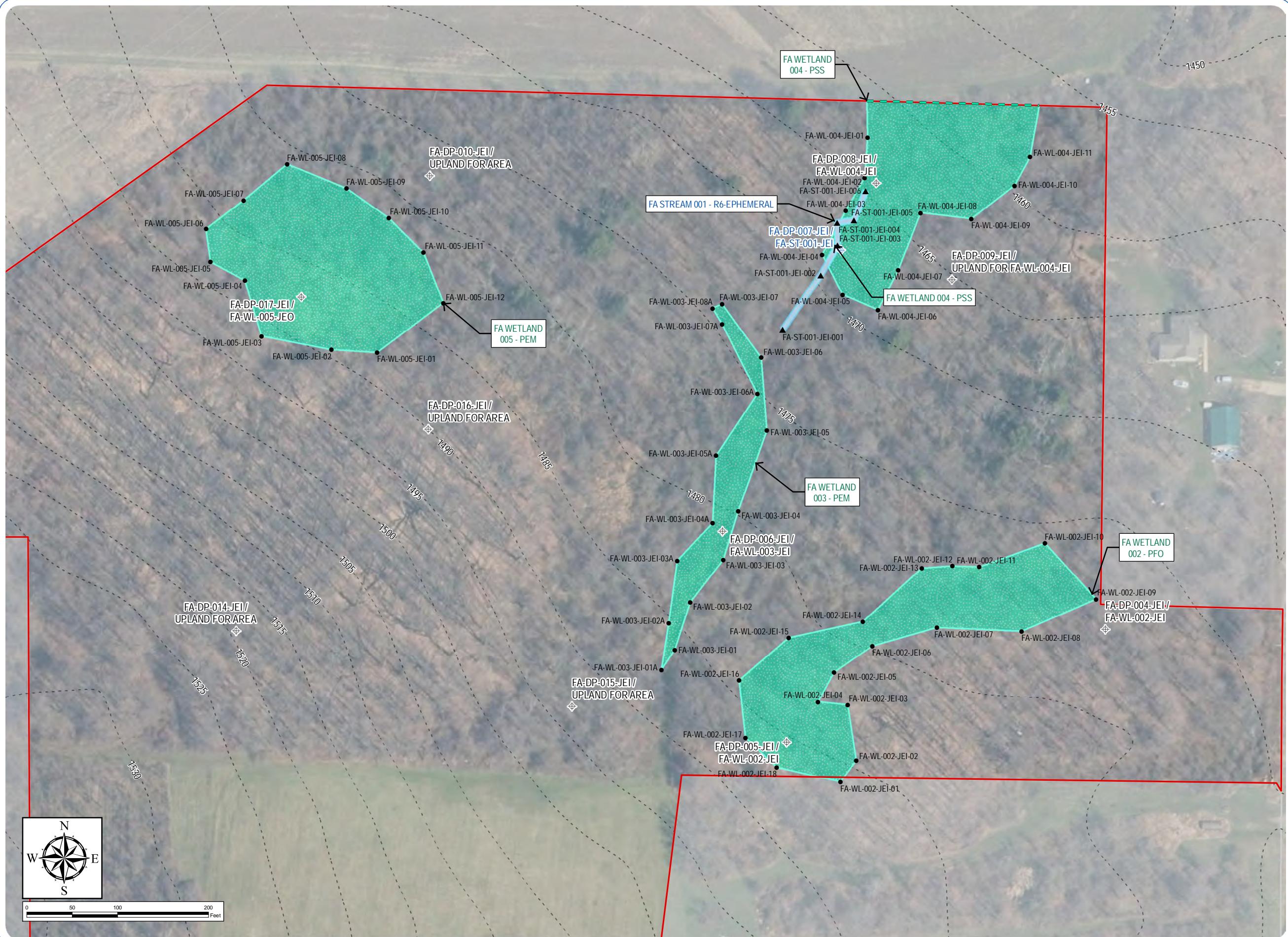


# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

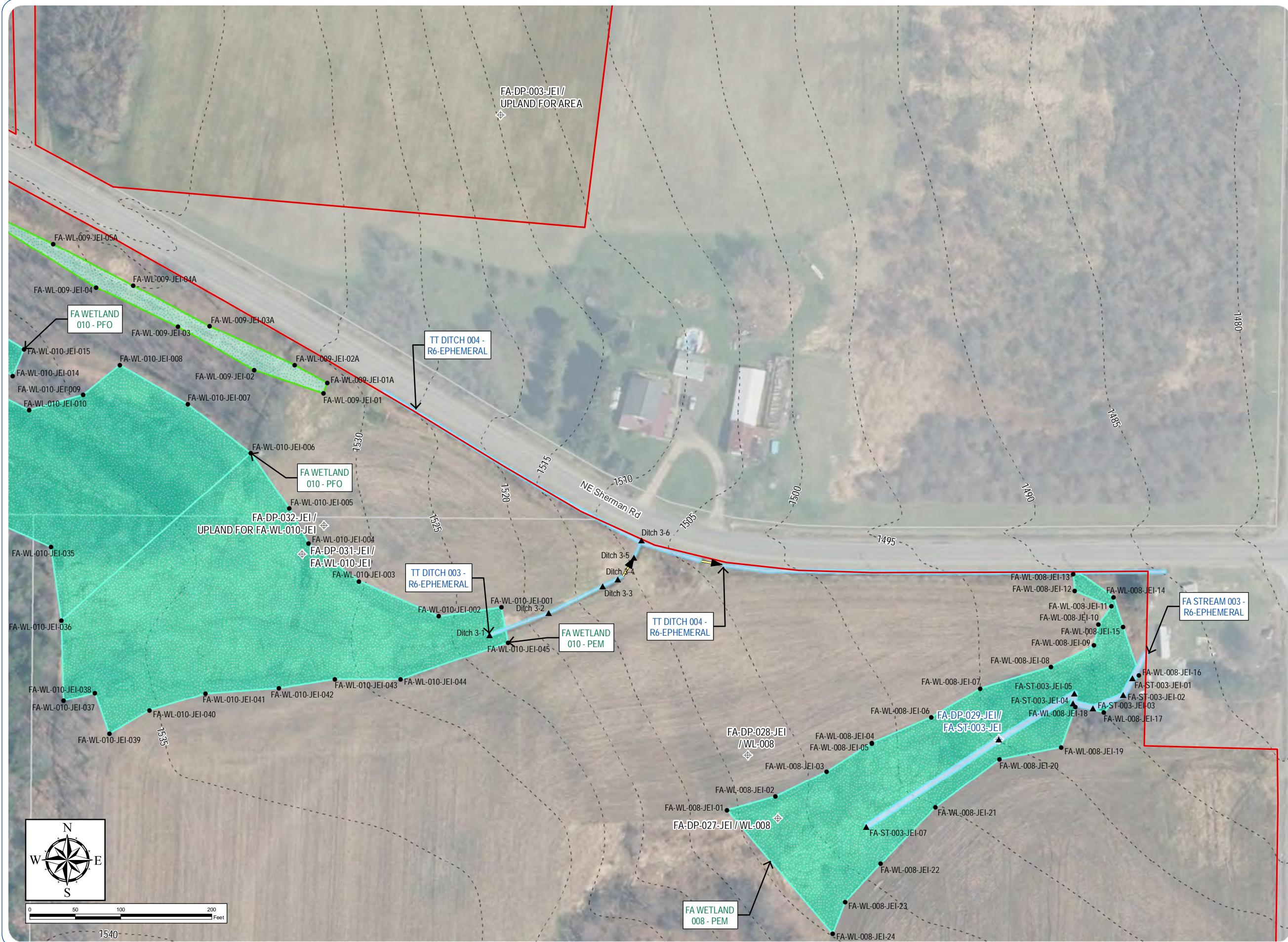
- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Stream
- ◊ Datapoint Wetland
- - - Wetland Continues
- - - 5ft Contour
- Delineated Stream Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 9 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



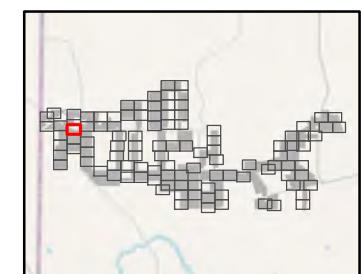


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

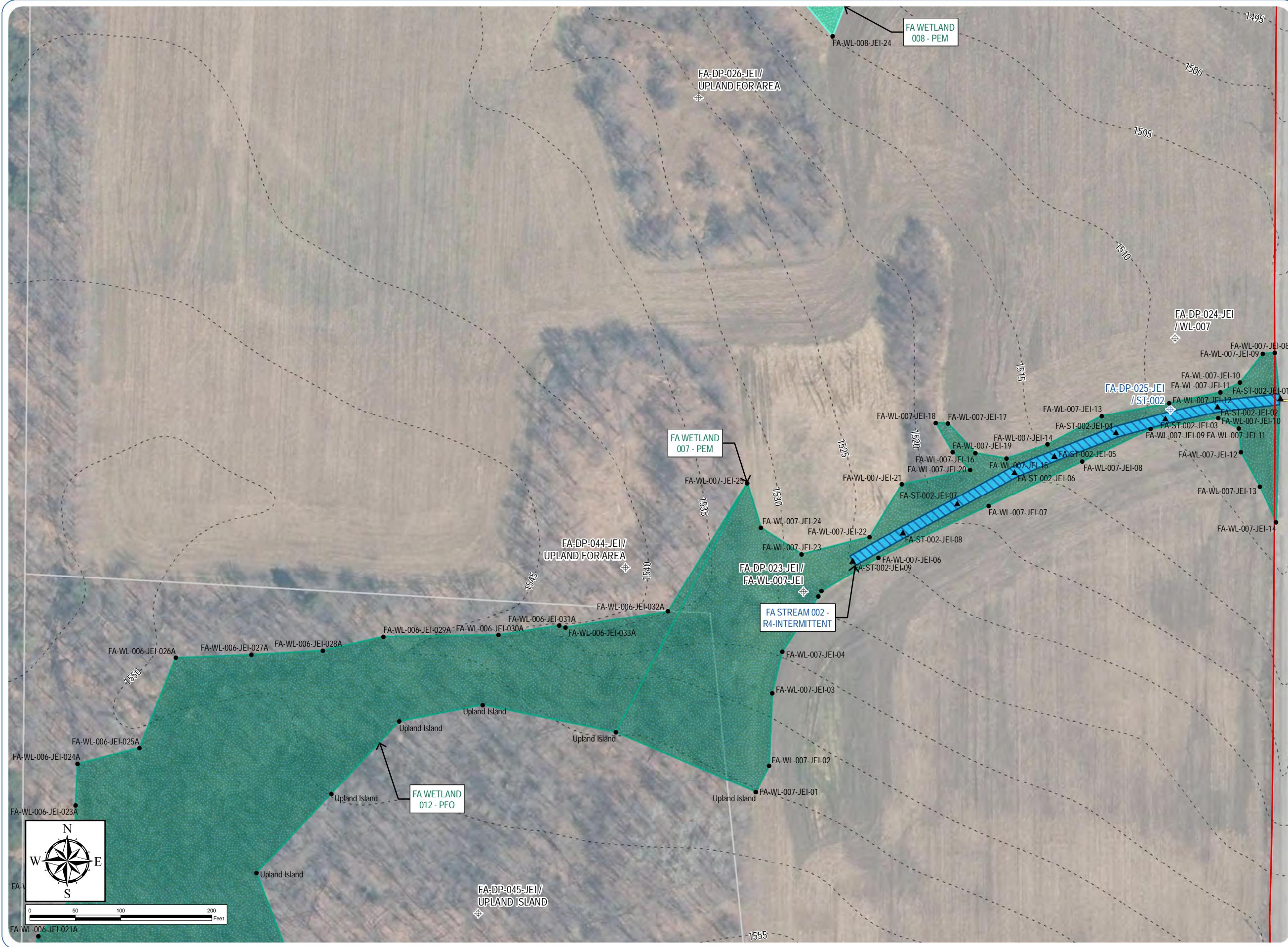
- ▲ Stream Flag
- Wetland Flag
- ⊕ Datapoint Stream
- ◊ Datapoint Wetland
- - - 5ft Contour
- Culvert
- Delineated Stream Non-Jurisdictional
- Delineated Wetland Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



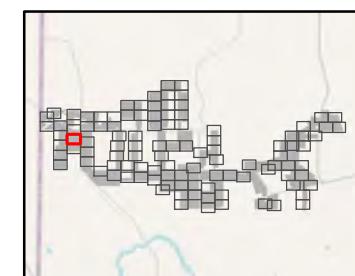


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Stream
- ◊ Datapoint Wetland
- - - 5ft Contour
- Culvert
- Delineated Stream w/ Federal Jurisdiction
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Red Box = Delineation Study Area



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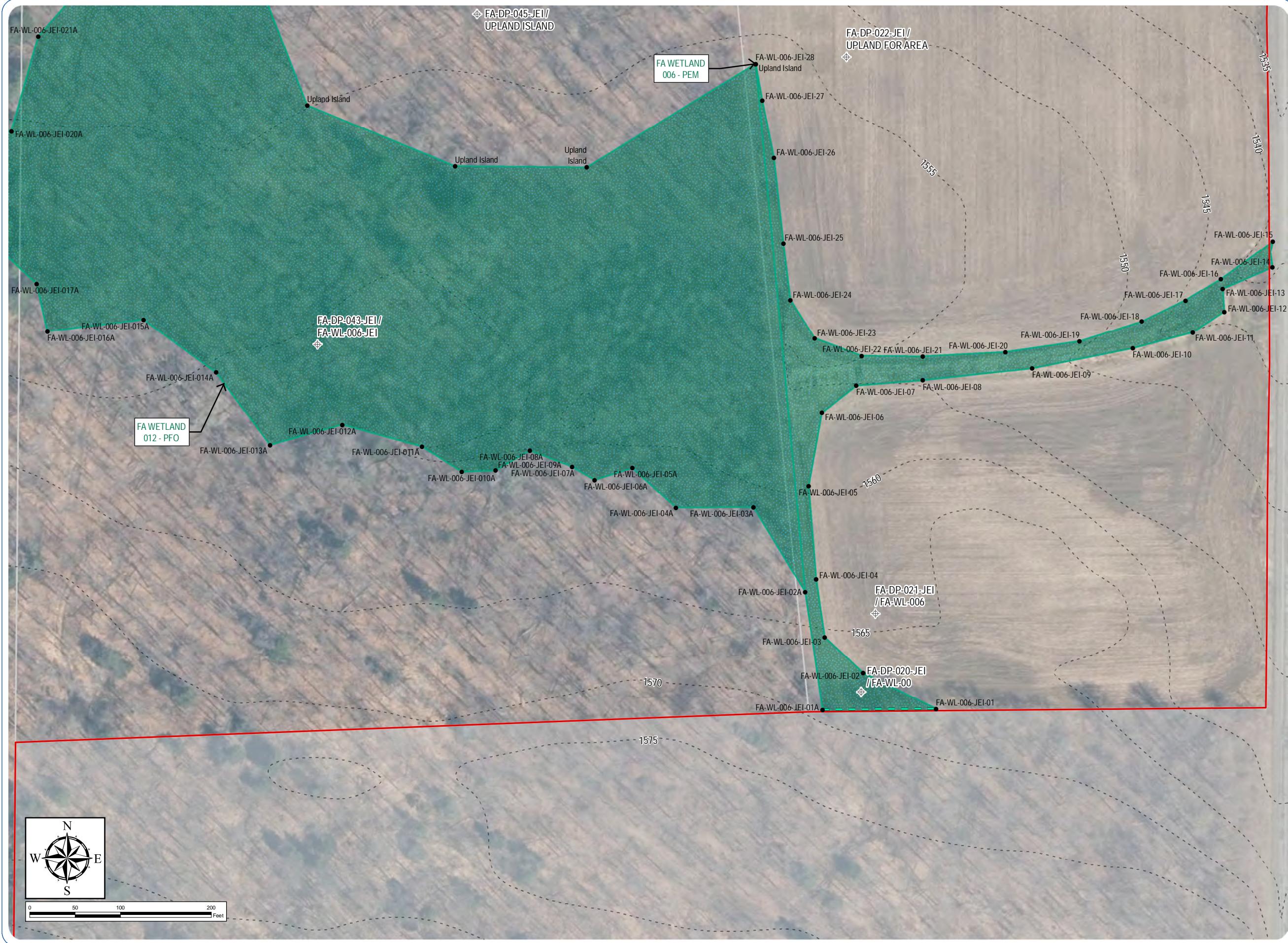
Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

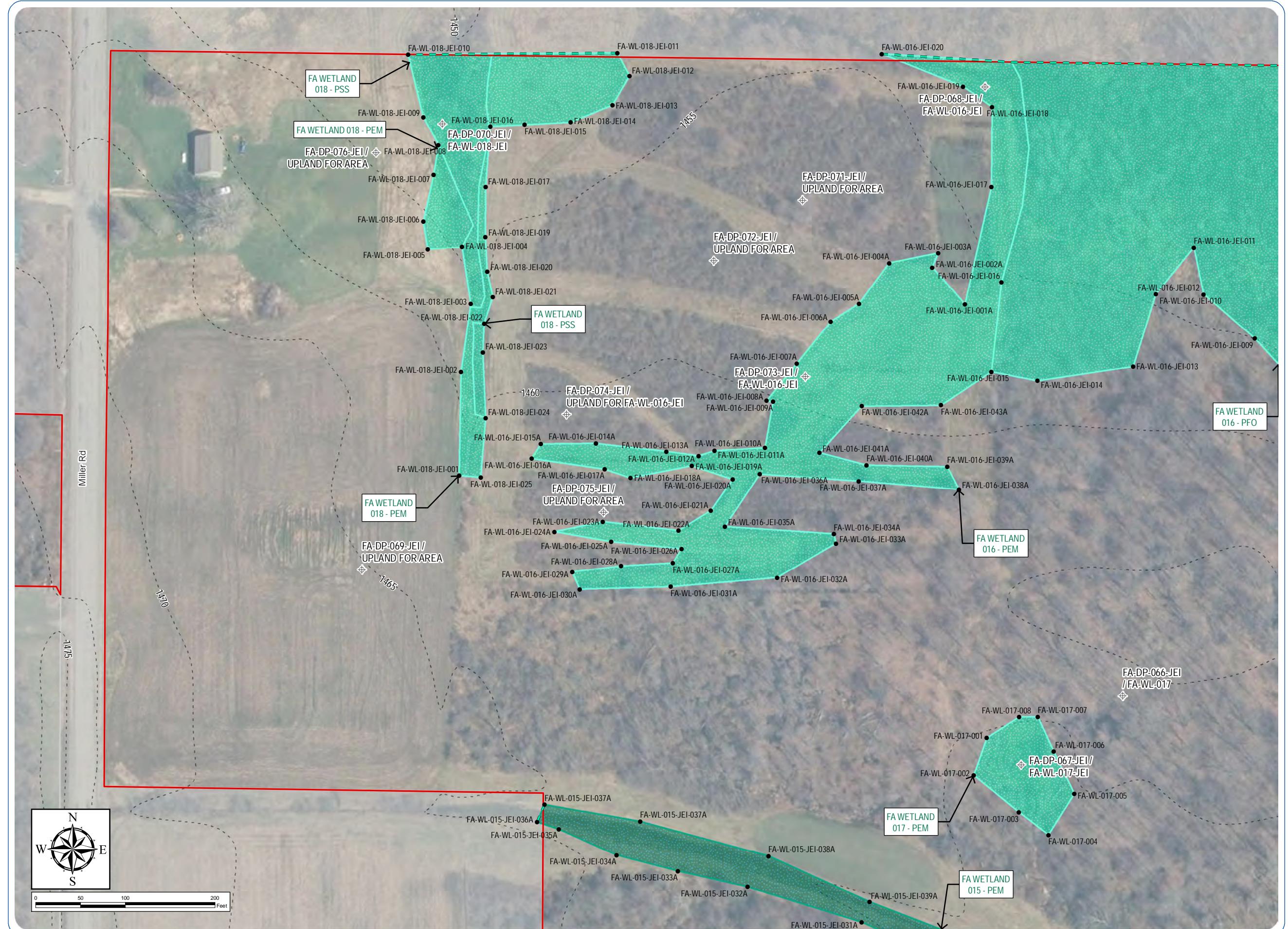


See Sheet 6

See Sheet 11

See Sheet 15



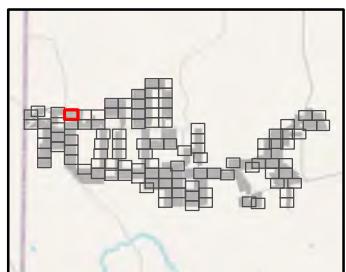


# South Ripley Solar Project

## Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- Wetland Flag
  - Datapoint Wetland
  - Wetland Continues
  - 5ft Contour
  - Delineated Wetland w/  
Federal Jurisdiction
  - Delineated Wetland w/  
State & Federal Jurisdiction
  - Parcel Boundary
  - Delineation Study Area



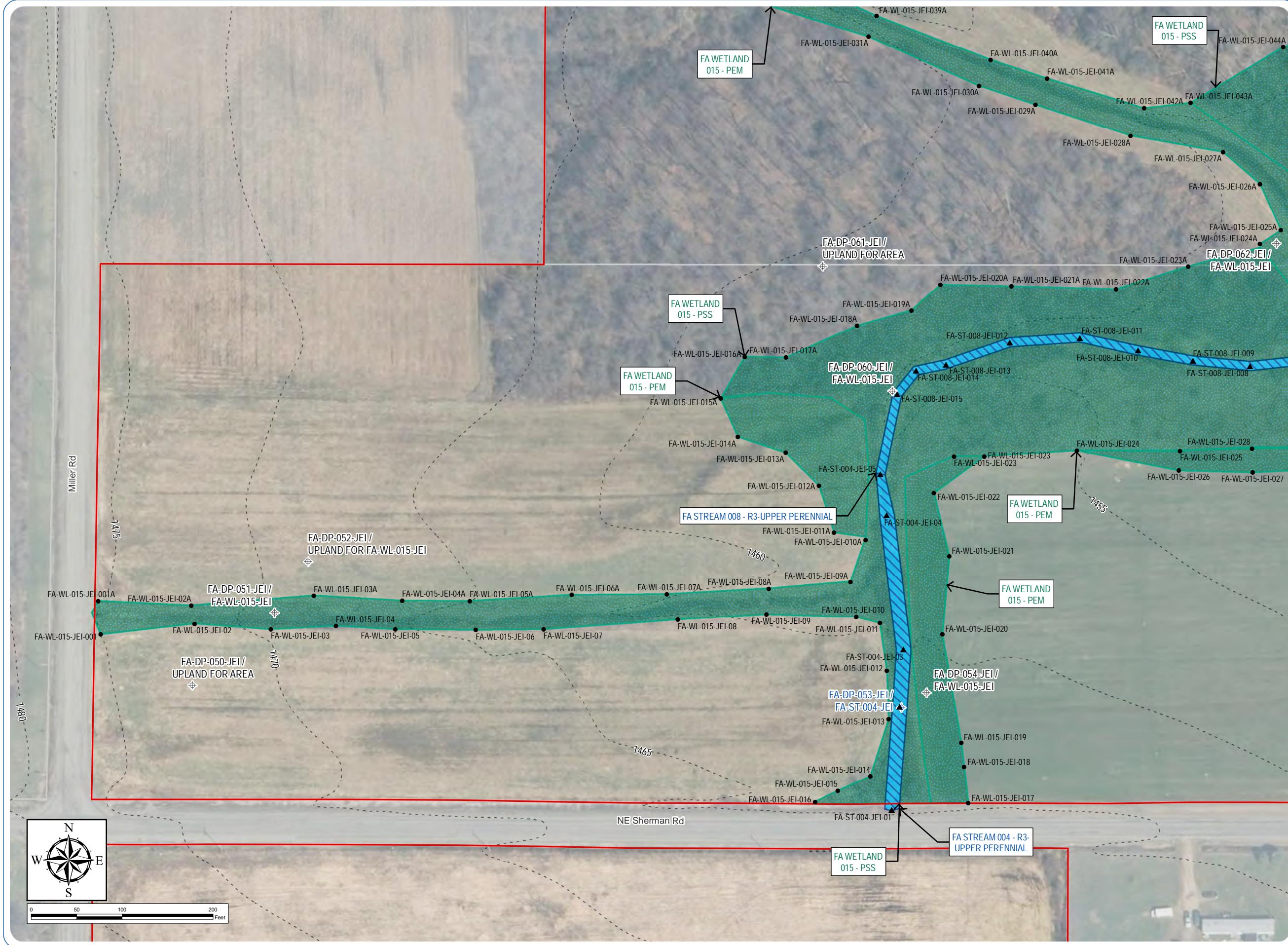
Sheet 13 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 13

See Sheet 18

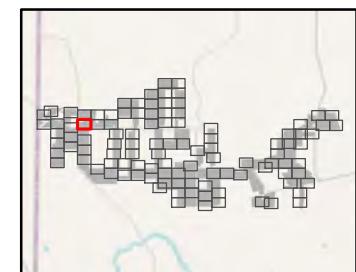


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

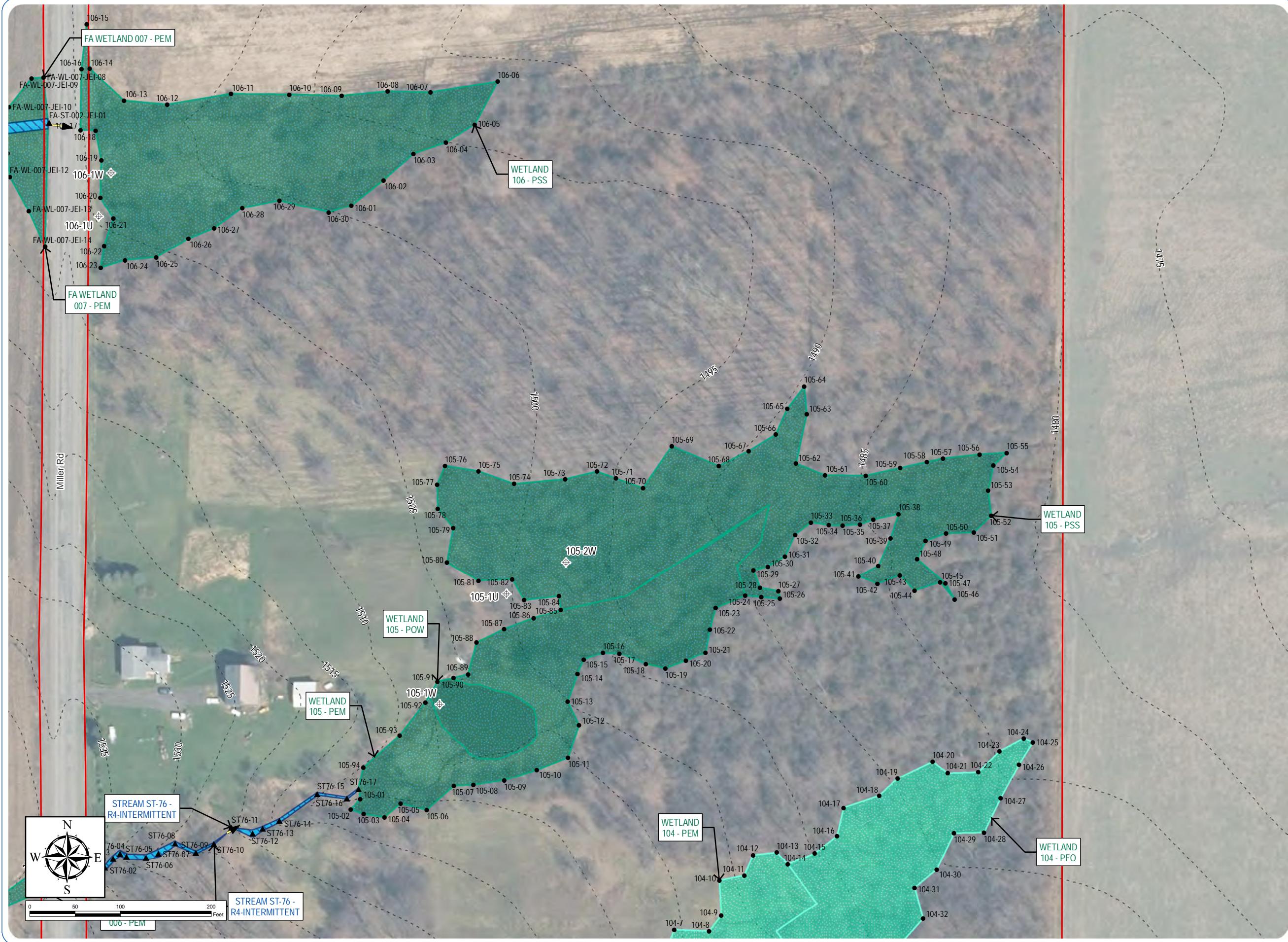
- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Stream
- ◇ Datapoint Wetland
- - - 5ft Contour
- Delineated Stream w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

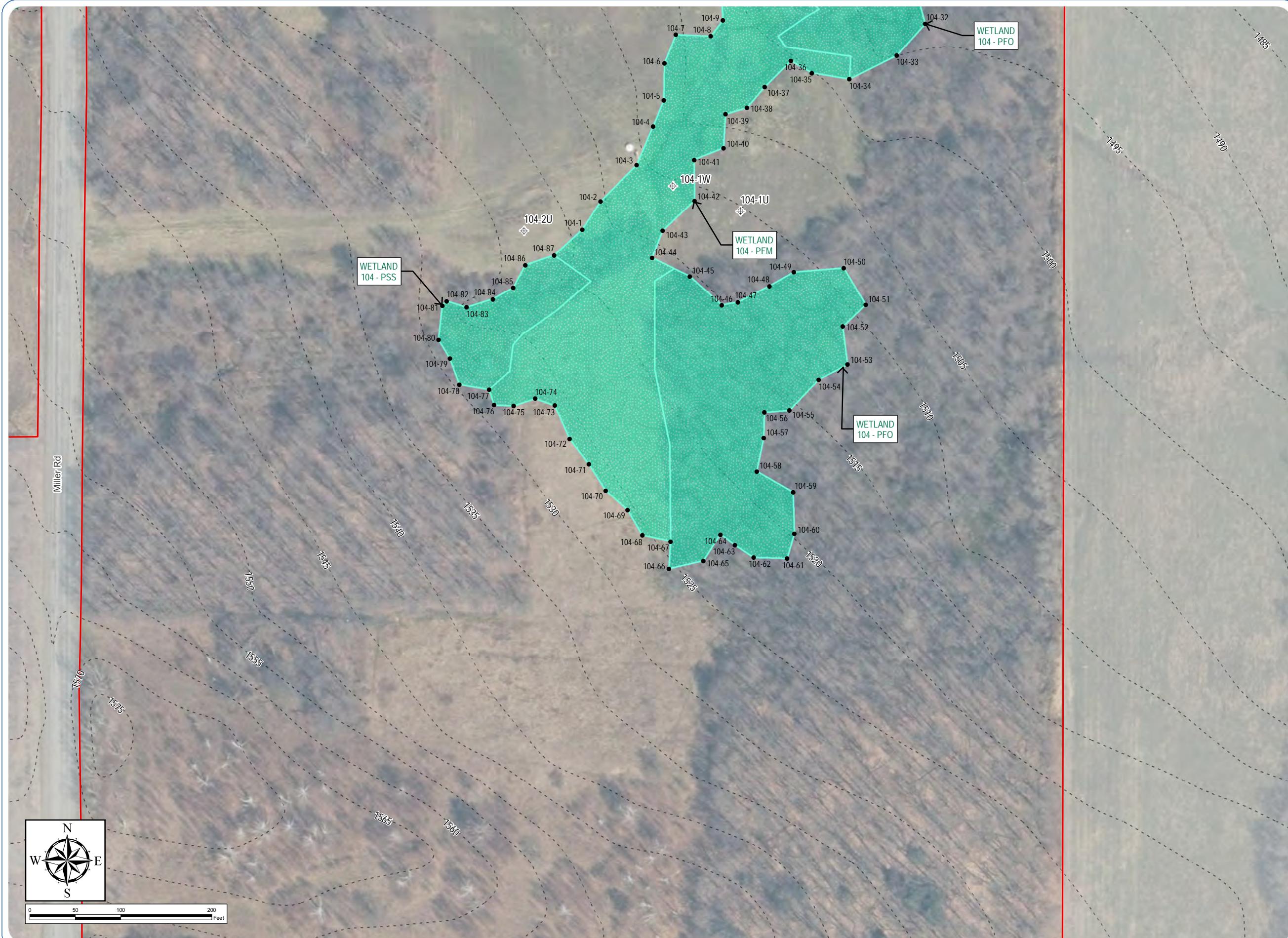




See Sheet 12

See Sheet 15

See Sheet 17

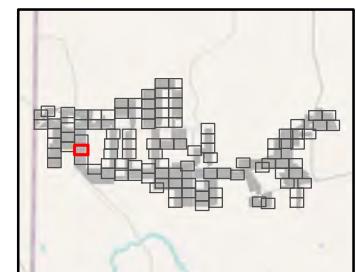


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

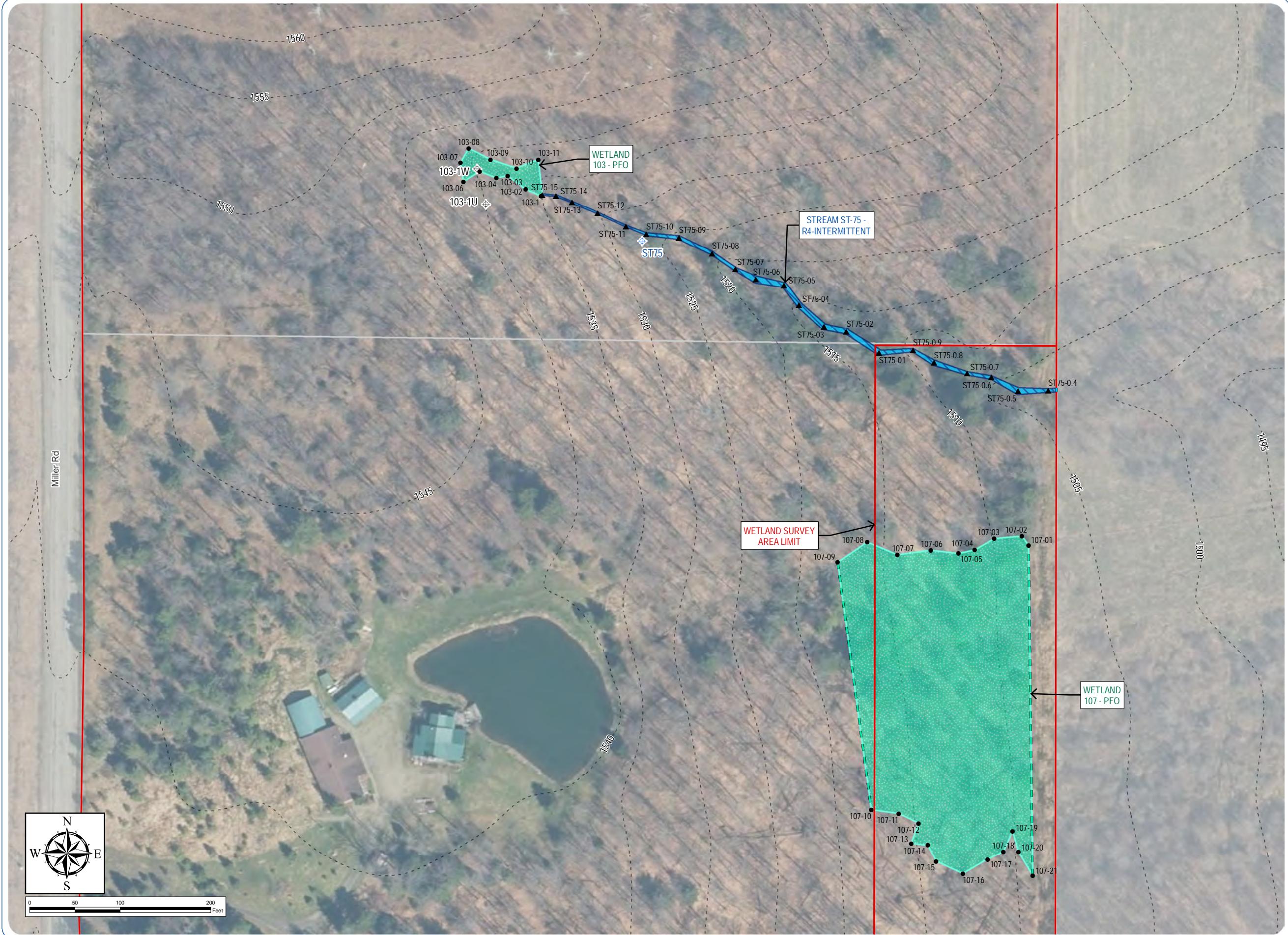
- Wetland Flag
- ◊ Datapoint Wetland
- - - 5ft Contour
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 16 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



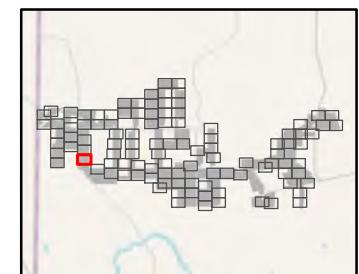


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Stream
- ◊ Datapoint Wetland
- - - Stream Continues
- - - Wetland Continues
- - - 5ft Contour
- Delineated Stream w/ Federal Jurisdiction
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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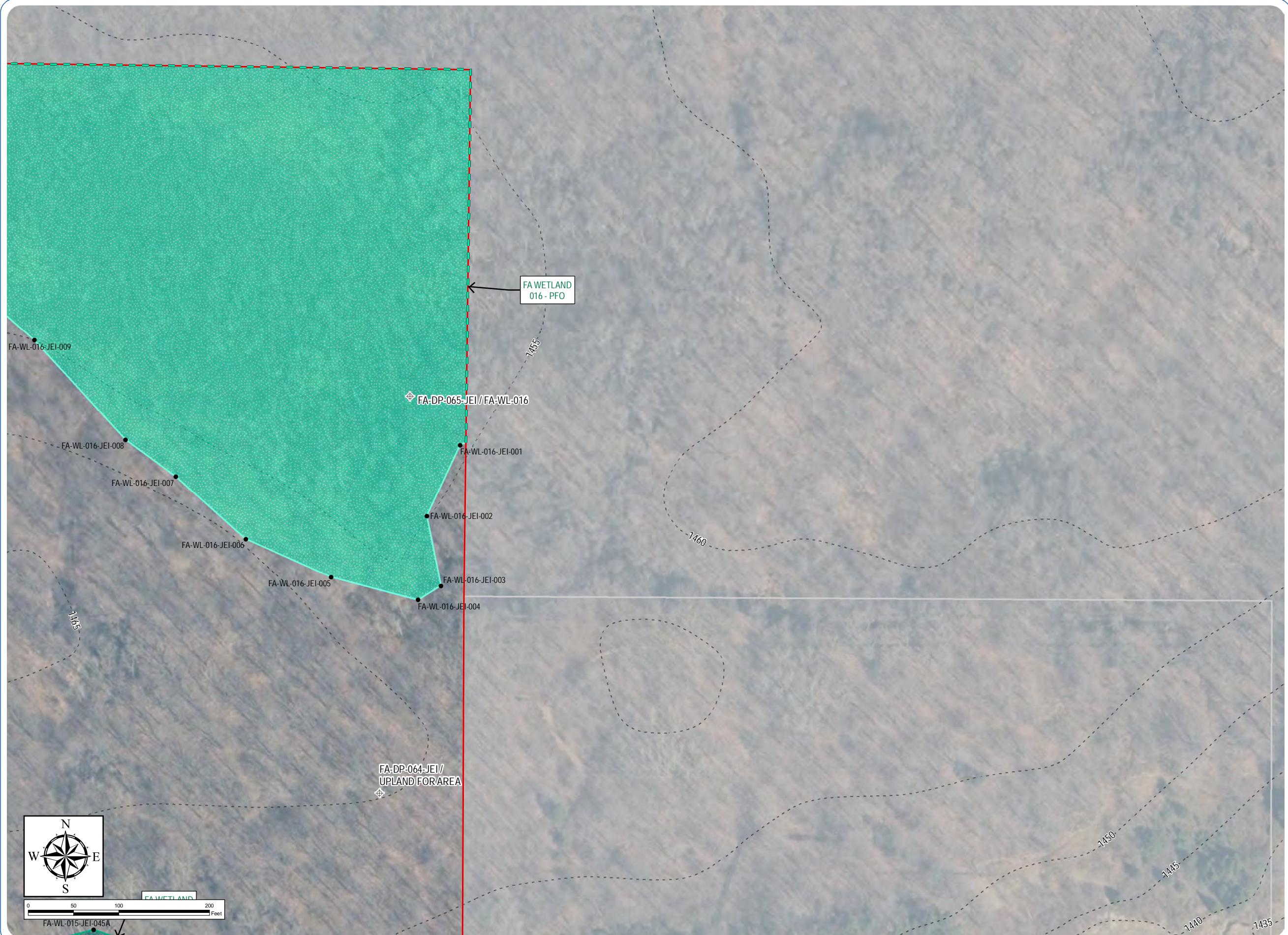
Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

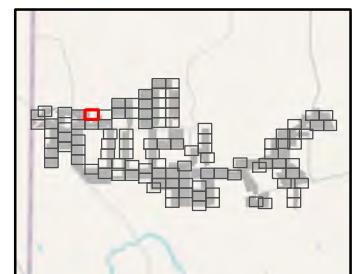
Figure 7: Delineated Wetlands and Streams



See Sheet 14

See Sheet 19

See Sheet 22



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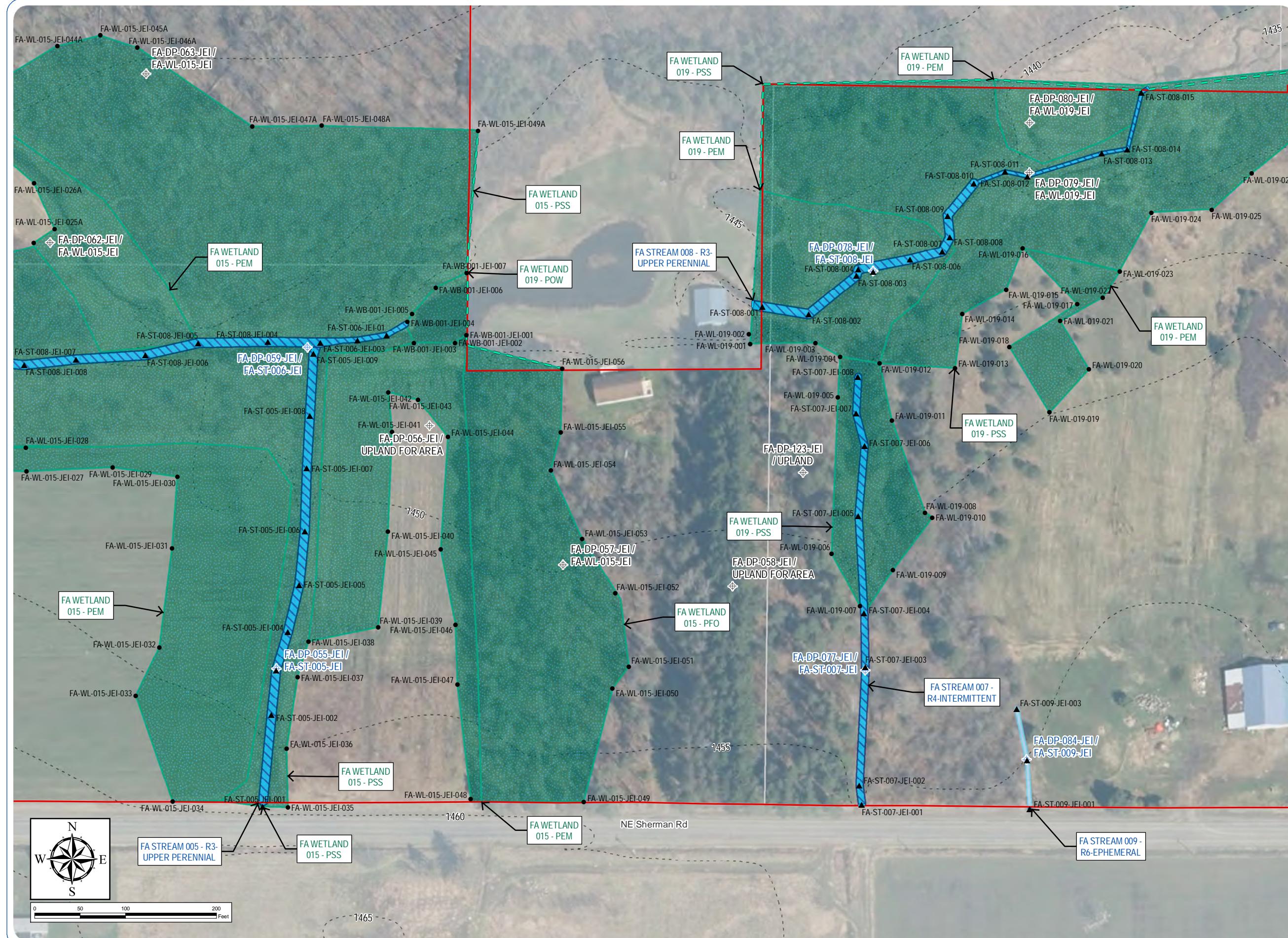
Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 13

See Sheet 18

See Sheet 21

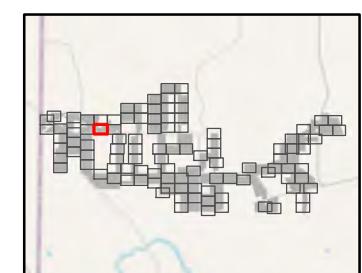


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

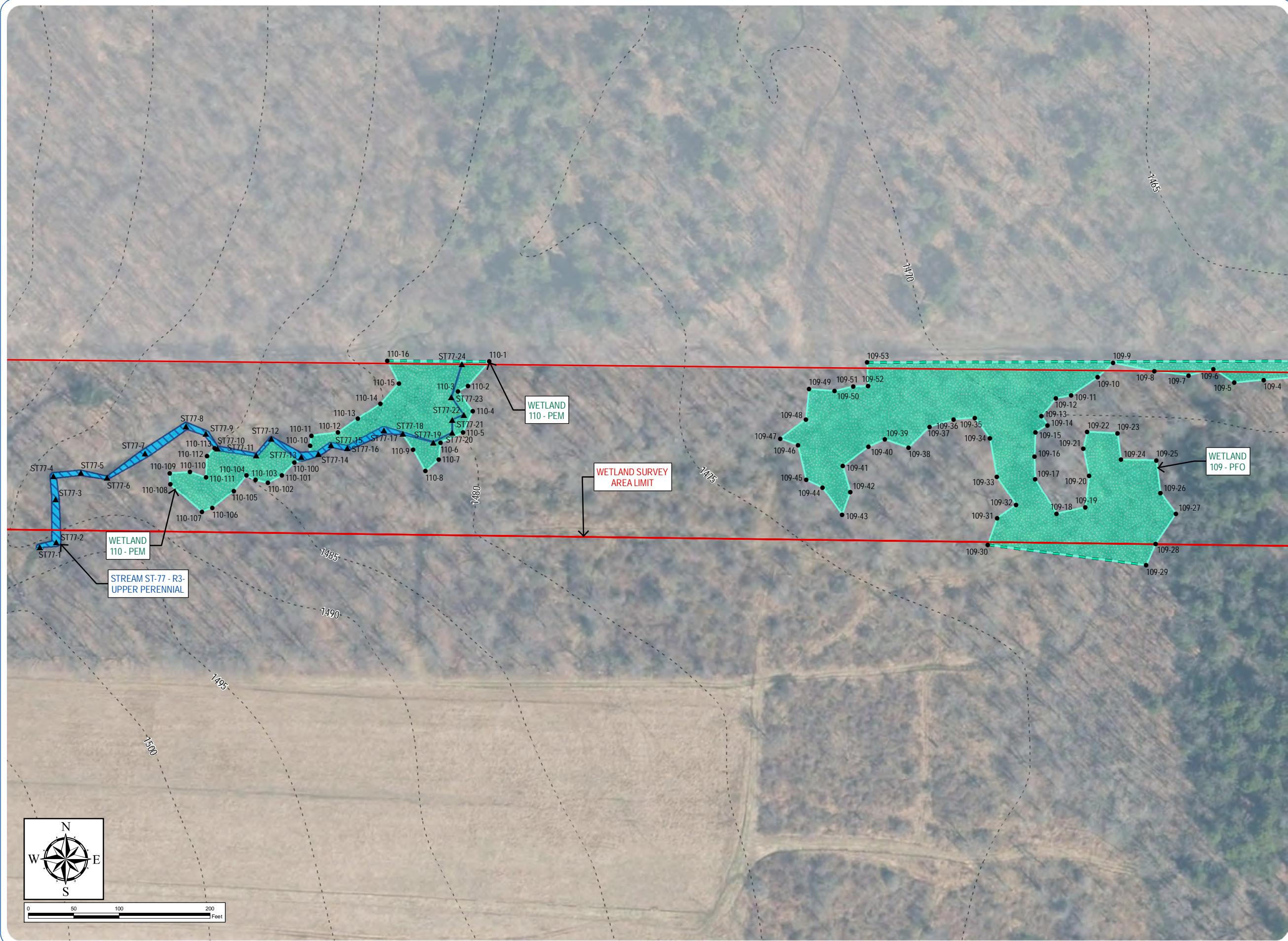
- ▲ Stream Flag
- Wetland Flag
- ◊ Datapoint Stream
- ◊ Datapoint Wetland
- - - Stream Continues
- - - Wetland Continues
- - - 5ft Contour
- Delineated Stream Non-Jurisdictional
- Delineated Stream w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



Sheet 19 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



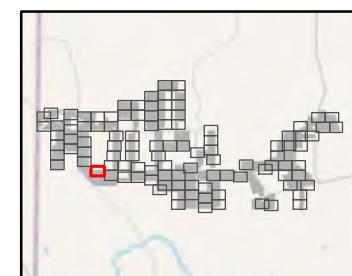


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- Stream Continues
- Wetland Continues
- - - 5ft Contour
- Delineated Stream w/ Federal Jurisdiction
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



# South Ripley Solar Project

## Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
  - Wetland Flag
  - ❖ Datapoint Welland
  - - Stream Continues
  - - - Wetland Continues
  - - - - 5ft Contour
  -  Delineated Stream w/  
Federal Jurisdiction
  -  Delineated Wetland w/  
State & Federal Jurisdiction
  -  Parcel Boundary
  -  Delineation Study Area



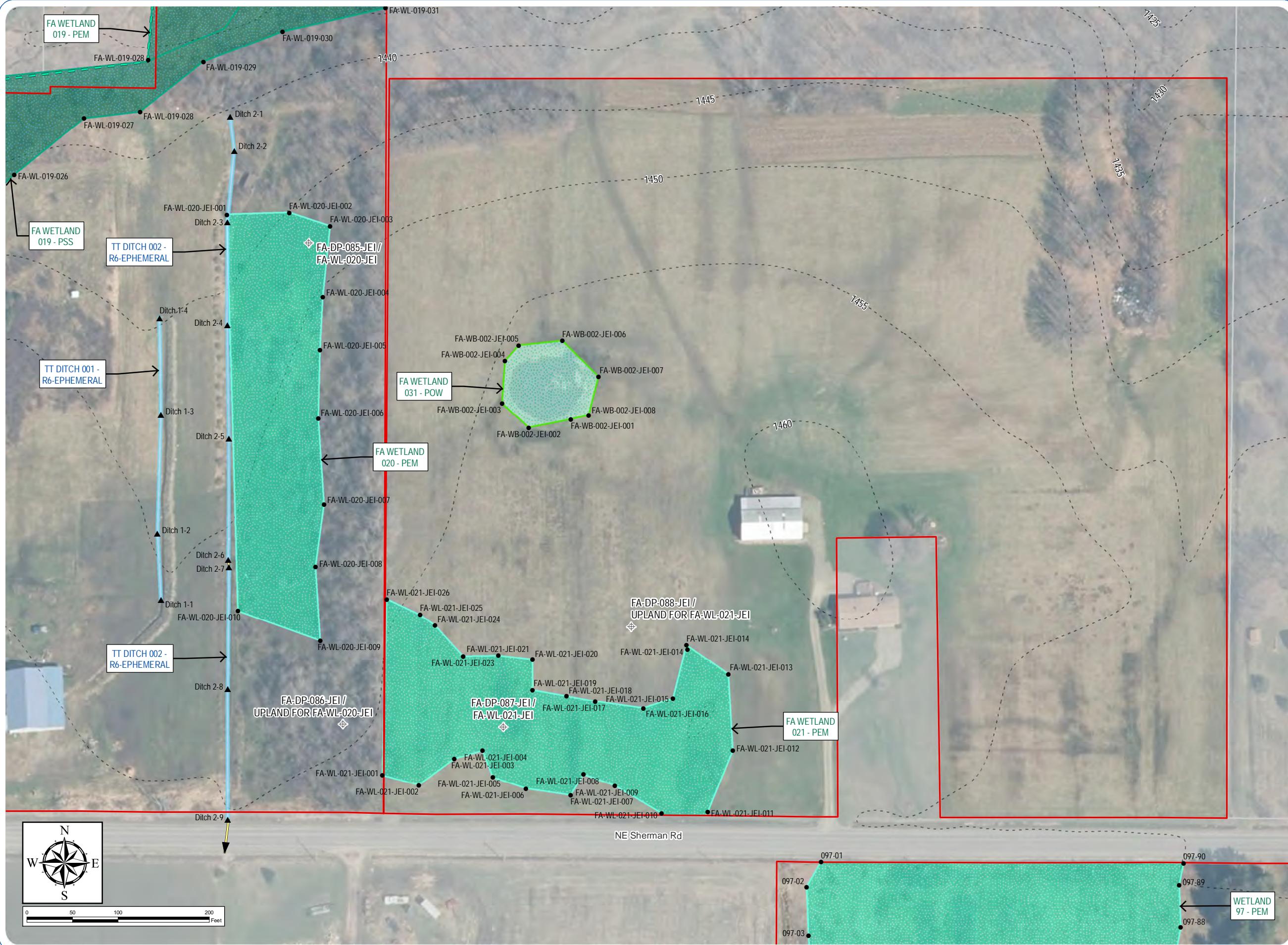
Notes: 1 Baseman: NYSDOP

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 18

See Sheet 21

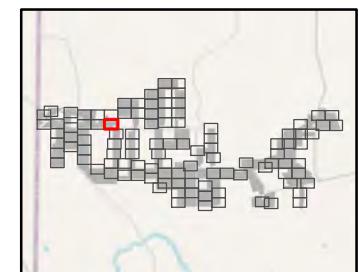


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- ▲ Stream Flag
- Wetland Flag
- ◆ Datapoint Wetland
- Wetland Continues
- - - 5ft Contour
- Culvert
- Delineated Stream Non-Jurisdictional
- Delineated Wetland Non-Jurisdictional
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 23

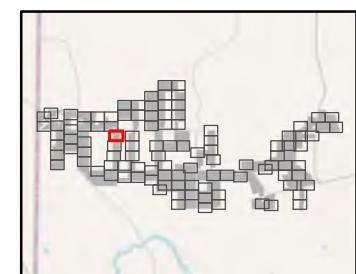
See Sheet 23



## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams



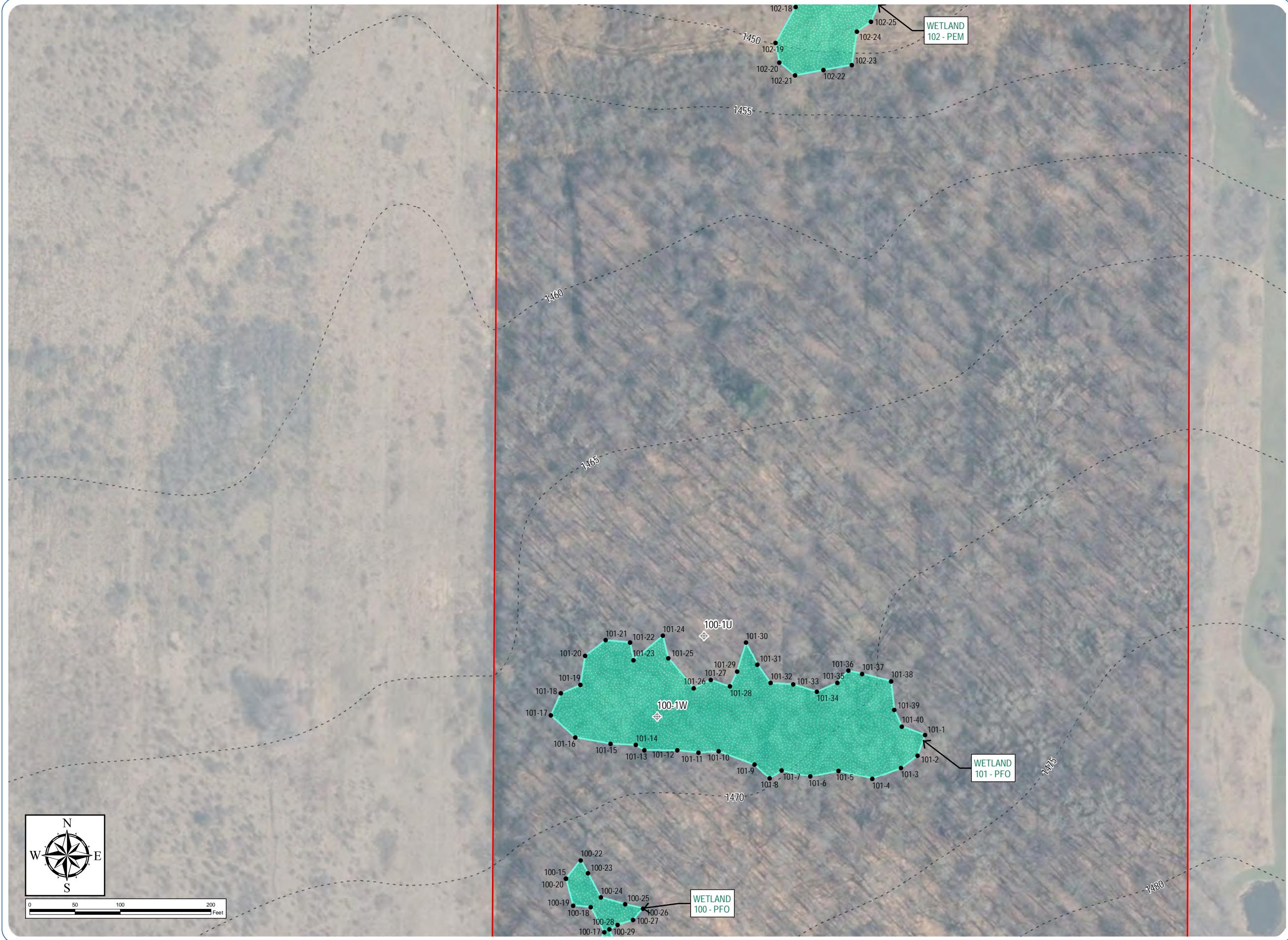
Sheet 23 of 107

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



See Sheet 23

See Sheet 23

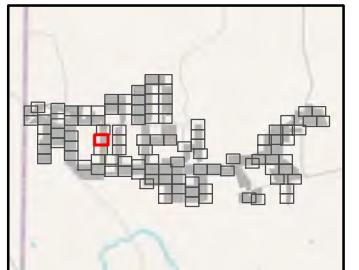


## South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- Wetland Flag
- ◆ Datapoint Wetland
- - - 5ft Contour
- Delineated Wetland w/ Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

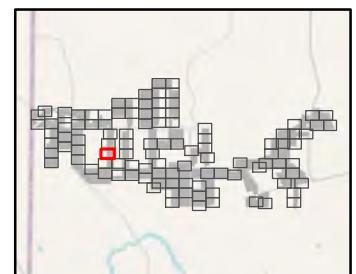


# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Figure 7: Delineated Wetlands and Streams

- Wetland Flag
- ◊ Datapoint Wetland
- Wetland Continues
- - - 5ft Contour
- Delineated Wetland w/ Federal Jurisdiction
- Delineated Wetland w/ State & Federal Jurisdiction
- Parcel Boundary
- Delineation Study Area



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Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

