Wetlands and Waterbodies Delineation Report

Verona Solar Project
Town of Verona and City of Rome
Oneida County, New York

Office of Renewable Energy Siting
Matter No. 23-00044

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List of Abbreviations and Acronyms

1987 Manual	U.S. Army Corps of Engineers Wetlands Delineation Manual
CFR	Code of Federal Regulations
CWA	Clean Water Act
ECL	Environmental Conservation Law
EPA	U.S. Environmental Protection Agency
ERM	Environmental Resource Mapper
GPS	global positioning system
HUC	Hydrologic Unit Code
NWI	National Wetlands Inventory
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
OHWM	ordinary high water mark
ORES	Office of Renewable Energy Sitting
PEM	palustrine emergent
PSS	palustrine scrub/shrub
PFO	palustrine forested
QA/QC	quality assurance/quality control
Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0
USACE	U.S. Army Corps of Engineers
WOTUS	waters of the United States
WSP	WSP USA, Inc.

1 Introduction and Survey Area Description

Verona Solar LLC (Verona Solar) is proposing to construct and operate the Verona Solar Project (the Facility). The proposed Facility is an up to 250-megawatt (MW) alternating current (AC), photovoltaic (PV) solar energy generating development located within the Town of Verona and City of Rome, Oneida County, New York. The Facility layout is still in development and will consist of rows of PV modules in discrete sub-arrays and related facilities dispersed throughout the Facility Site. These arrays will be enclosed by fences (for safety and security purposes). In addition, the Facility will include electrical direct current collection cables that connect to inverters, and medium voltage AC cables that run from the sub-arrays to a Point-of-Interconnection (POI), as well as other Facility components.

The Survey Area represents all or portions of the 60 parcels within which Facility will be sited, totaling approximately 3,897 acres, including a 100-foot buffer around the parcels. The Survey Area is dominated by agricultural land for use primarily as rowcrop and secondarily as hayfield. Additionally, the Survey Area also contains forest patches of various sizes as well as pastureland and farm buildings associated with agricultural activity. There is an active railroad and several unpaved farm roads within the Survey Area (Appendix A, Figure A-1).

WSP USA, Inc. (WSP) completed a wetlands and waterbodies delineation within the Survey Area between June 12 and July 21, 2023. This report describes those resources in the Survey Area and provides field data and estimated jurisdictional information to assist the U.S. 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) in verifying the delineations for regulatory determinations. Additionally, WSP conducted remote sensing analyses for the 100-foot buffer around the parcels that comprised the Survey Area.

Additional details are provided in the following appendices:

- Appendix A: Figures
- Appendix B: Wetland Data Package
- Appendix C: Waterbody Data Package
- Appendix D: Wetland and Waterbody Mapping for ORES
- Appendix E: Wetland and Waterbody Mapping for USACE

2 Regulatory Review and Permit Requirements

2.1 Clean Water Act

Certain activities that may impact waters of the United States (WOTUS) require authorization under Sections 404 and 401 of the Clean Water Act (CWA). WOTUS, including federal jurisdictional wetlands, are defined under 33 Code of Federal Regulations (CFR) Section 328, Part 328.3. The USACE is the agency responsible for issuing Section 404 permits. The Survey Area is within the jurisdiction of the USACE Buffalo District.

Section 401 of the CWA requires state water quality certification or waiver for any federally permitted action involving discharges into WOTUS to ensure the permitted action will not violate a state's water quality standards or impair designated uses. Through the regulations discussed in Section 2.2, below, ORES is the agency responsible for administering the Section 401 program for major renewable energy facilities.

2.2 Chapter XVIII, Title 19 of New York Codes, Rules and Regulations Part 900, Office of Renewable Energy Siting

The purpose of Title 19 New York Codes, Rules and Regulations (NYCRR) Part 900 is to establish procedural and substantive requirements for permit applications for major renewable energy facilities reviewed by ORES and applies to applications for permits for the siting, design, construction, operation, compliance, enforcement, and modification of such facilities pursuant to Section 94-c of the New York State Executive Law. Title 19 NYCRR §900-1.3(e) and (f) require a wetland delineation to determine the boundaries of all federal, state, and locally regulated wetlands and a surface water delineation to identify the location of all federal and state waters regulated pursuant to Article 15 of the New York State Environmental Conservation Law (ECL), as well as locally regulated surface waters present on the Survey Area and within 100 feet of areas to be disturbed by construction, including the interconnections, access roadways, and utility tie-ins. For adjacent properties without accessibility, 19 NYCRR §900-1.3(e) and (f) require delineation surveys using remote sensing data, interpretation of existing wetland and soils mapping, observations from adjacent accessible properties, and current and historical aerial imagery.

2.3 New York State Environmental Conservation Law, Article 15, Title 5

Article 15, Title 5 of the ECL regulates activities that could impact protected watercourses within New York. Protected waters include all waters classified by NYSDEC as AA, A, B, C(T), or C(TS), as well as all navigable waters (see Section 3.1). Article 15 covers disturbances of streambeds and banks and disposal of fill material and excavation in regulated waterbodies. An application for a permit under Article 15 is filed jointly with the USACE permit application. The Survey Area is within the jurisdiction of NYSDEC Region 6.

2.4 New York State Environmental Conservation Law, Article 24

Article 24 of the ECL, the New York Freshwater Wetland Act, provides for regulation of certain activities that could adversely affect wetlands of 12.4 acres (5 hectares) or larger, as well as smaller wetlands identified by NYSDEC as having significant ecologic types, functions, or values. Activities that occur within 30.5 meters (100 feet) of a NYSDEC-mapped wetland boundary are also regulated.

NYSDEC maintains a database of regulated state wetlands. Although the NYSDEC database provides the basis for state wetland regulation, the true extent of jurisdiction relies on the actual boundary of the wetland, which can differ from the mapped database boundary. NYSDEC applies a 500-foot wide check zone around each mapped wetland within which an applicant proposing an activity is advised to conduct field delineations to confirm the jurisdictional boundary and/or check with the local NYSDEC regional office to identify the true jurisdictional extent of the mapped feature. An application for a permit under Article 24 is filed jointly with the USACE permit application. To note, this process differs for major renewable energy facilities proceeding under 19 NYCRR §900, where ORES and not the NYSDEC is responsible for determining jurisdiction of field delineated features.

3 Methodology

3.1 Preliminary Data Review

Prior to field work, WSP conducted desktop reviews of agency resources for potential locations of wetlands and waterbodies in and near the Survey Area. WSP accessed soil maps (USDA 2023), the NYSDEC Environmental Resource Mapper (ERM) (NYSDEC 2023), the National Wetlands Inventory (NWI) (USFWS 2023), the U.S. Geological Survey National Hydrography Dataset (USGS 2023), and current and historic ESRI aerial imagery. This information is presented within Figure A-2, Figure A-3, and Figure A-4 in Appendix A. Each figure includes the Survey Area and the applied 100-feet-wide buffer area within which remote sensing was conducted.

Wetland delineations were conducted within previous iterations of the Survey Area in 2019, 2021, and 2022, but wetland delineation reports and associated data were not submitted to the regulatory agencies. Therefore, WSP conducted a desktop review of data provided from prior delineations within the Survey Area to identify areas previously field-mapped as wetlands and surface waters.

In addition, soil types (as shown in Figure A-2) for the Survey Area and the areas within which remote sensing was conducted are summarized in Table 3-1. The data sources indicated the likelihood of wetlands and waterbodies in the Survey Area. Based on those findings, WSP concluded that field verification would be required to determine the presence and extent of wetlands and waterbodies in the Survey Area.

NYSDEC Wetlands - The NYSDEC ERM maps nine New York-regulated freshwater wetlands that extend into the Survey Area, as shown in Figure A-4 in Appendix A. Classes of each wetland and the acreages of overlap are provided in Table 3-2. There are three additional NYSDEC-regulated wetlands that are mapped near the Survey Area but do not extend to within the limits, these are depicted in Figure A-4 in Appendix A, and the Class for each wetland is noted in Table 3-2. The total acreage and percentage of Survey Area for each wetland class are depicted in Table 3-3.

Under NYSDEC's wetland classification system, Class I wetlands are offered the highest level of protection and Class IV wetlands receive the lowest (6 NYCRR §664.5).

Table 3-1 Soil Classifications within the Survey Area

Map Unit Symbol	Map Unit Name	Hydric Rating	Acreage within Survey Area	Percent of Survey Area
102B	Honeoye silt loam, 3 to 8 percent slopes	0	28.89	0.74%
102C	Honeoye silt loam, 8 to 15 percent slopes	0	8.88	0.23%
126A	Lima gravelly silt loam, 0 to 3 percent slopes	3	28.08	0.72%
126B	Lima gravelly silt loam, 3 to 8 percent slopes	2	226.25	5.81%
146	Lyons soils, 0 to 3 percent slopes	95	284.05	7.29%
20	Pits, sand and gravel	0	14.32	0.37%
22	Udorthents, smoothed	4	0.15	0.00%
24A	Howard gravelly loam, 0 to 3 percent slopes	1	370.13	9.50%
24B	Howard gravelly loam, 3 to 8 percent slopes	1	212.51	5.45%
28A	Phelps silt loam, 0 to 3 percent slopes	5	74.07	1.90%
30	Fredon gravelly silt loam	21	25.00	0.64%
31	Halsey gravelly loam	91	19.39	0.50%
350B	Alton gravelly loam, 3 to 8 percent slopes	0	38.82	1.00%
372A	Appleton silt loam, 0 to 3 percent slopes	4	591.99	15.19%
372B	Appleton silt loam, 3 to 8 percent slopes	5	180.74	4.64%
395	Palms muck	100	77.82	2.00%
39A	Knickerbocker fine sandy loam, 0 to 3 percent slopes	0	30.66	0.79%
41	Niagara fine sandy loam	6	94.92	2.44%
43	Jebavy sand	85	6.75	0.17%
47A	Scio silt loam, 0 to 3 percent slopes	3	1.46	0.04%
50	Wareham loamy fine sand	18	0.79	0.02%
63B	Wallington very fine sandy loam, 3 to 8 percent slopes	1	9.15	0.23%
64A	Rhinebeck silt loam, 0 to 3 percent slopes	7	114.59	2.94%
7	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	90	8.05	0.21%
72	Canandaigua silt loam	96	195.67	5.02%
75	Lamson fine sandy loam	88	319.40	8.20%
750B	Minoa fine sandy loam, 0 to 6 percent slopes	21	681.09	17.48%
76	Niagara silt loam	8	220.41	5.66%
78A	Arkport fine sandy loam, 0 to 3 percent slopes	2	5.25	0.13%
78B	Arkport fine sandy loam, 3 to 8 percent slopes	2	12.67	0.33%
790B	Conesus silt loam, 3 to 8 percent slopes	1	6.38	0.16%
81B	Covert loamy sand, 3 to 8 percent slopes	6	8.56	0.22%
W	Water	0	0.11	0.00%
Total Acreage within the Survey Area / Remote Sensed Area			**3,897**	**100%**

Table 3-2 Mapped NYSDEC Wetlands that Overlap with the Survey Area

Mapped Wetland Name	NYSDEC Wetland Class	Acreage within Survey Area	Percent of Survey Area
SB-40	2	79.3	2.03%
SB-46	4	25.4	0.64%
SB-47	4	0*	0%*
SB-50	4	32.6	0.08%
SB-51	4	2019.5	0.51%
SB-53	2	0*	0%*
VE-20	2	208.2	5.34%
VE-22	2	52.7	1.36%
VE-27	3	176.9	4.54%
VE-29	3	94.1	2.41%
VE-30	4	76.5	2.00%
VE-36	4	0*	0%*
Total Acreage within the Survey Area / Remote Sensed Area		**735.2**	**18.88%**

* This NYSDEC mapped wetland is not located within the Survey Area, however the check zone extends into the Survey Area.

Table 3-3 Mapped NYSDEC Wetland Classes that Overlap with the Survey Area

NYSDEC Wetland Class	Mapped Wetland Names	Acreage within Survey Area	Percent of Survey Area
2	SB-40, VE-20, VE-22	340	8.72%
3	VE-27, VE-29	271	6.95%
4	SB-46, SB-50, SB-51, VE-30	125	3.21%
Total Acreage within the Survey Area / Remote Sensed Area		736	18.88%

Table 3-4 Mapped NWI Wetland Cover Types that Overlap with the Survey Area

Wetland Cover Type	Acreage within Survey Area	Percent of Survey Area
Freshwater Emergent Wetland	53.7	1.38%
Freshwater Forested/Shrub Wetland	273.2	7.01%
Freshwater Pond	2.8	0.07%
Riverine	12.2	0.31%
Total Acreage within the Survey Area / Remote Sensed Area	**342.0**	**8.78%**

NWI Wetlands – As shown in Figure A-3, the NWI maps wetlands and waterbodies throughout the Survey Area. The mapped wetlands include those dominated by herbaceous plants, shrubs and saplings, deciduous trees, and evergreen trees. Several ponds and perennial streams are also mapped by the NWI. The total acreage and percentage of the Survey Area for each wetland cover type is depicted in Table 3-4.

NYSDEC Stream Classification - The NYSDEC Division of Water Resources maintains a database of streams and their classifications and standards (6 NYCRR Chapter X). The NYSDEC ERM maps both Class C and Class D streams within the Survey Area. Class C is designated for waters supporting fisheries, suitable for non-contact activities, and additionally the symbol (T) after any classification designated those waters as trout suitable waters. Class C streams lacking a (T) designation and Class D streams (the lowest level of classification) are not subject to protection under the NYSDEC Protection of Waters Program. Class D streams are not regulated under the NYSDEC Protection of Waters Program.

Watersheds - The Survey Area is assigned by the U.S. Environmental Protection Agency (EPA) to the Oneida Sub-basin (Hydrologic Unit Code [HUC] 04140202) (EPA 2022).

3.2 Wetland Delineation Methodology

The wetland delineation methodologies outlined in the Corps of Engineers Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (Supplement) (USACE 2011), and the New York State Freshwater Wetlands Delineation Manual (Browne et al. 1995) were applied to identify and delineate wetlands.

Wetland scientists used survey flagging to delineate each wetland boundary with a unique alphanumeric identifier. A hand-held Eos Arrow global positioning system (GPS) receiver capable of sub-meter accuracy was used to survey the flag positions. Flagging was not placed in agricultural areas (e.g., hayfields, row crop fields, and livestock grazing areas). The teams photographed wetland and upland habitats at each datasheet point and completed Wetland Determination Data Forms developed by the USACE.

In two instances there were agricultural fields that were highly manipulated and contained alternating parallel ridges and hummocks, which appeared manmade in an attempt to drain the landscape. The boundaries of these two wetland mosaics were delineated in the field and the percent composition of wetland and upland were determined using high-quality aerial imagery, hillshade data, and digital elevation mosaic spatial data, in accordance with the methodology outlined in the USACE Northcentral Northeast Regional Supplement (USACE 2012). These two wetland mosaics are denoted on pages 24, 27, and 28 of Figure D in Appendix D and Figure E in Appendix E.

Per the 1987 Manual, wetlands must possess hydrophytic vegetation, hydric soils, and wetland hydrology, except in atypical and disturbed situations. The methods used to characterize and evaluate vegetation, soils, and hydrology are described below.

The New York State Freshwater Wetlands Delineation Manual more focused on hydrophytic vegetation as an indicator of wetland presence. For instance, an area would be considered wetland regardless of hydric indicators. Additionally, the New York State manual allows for greater best professional judgement with regards to disturbed or problematic situations.

In a few specific instances, field teams identified problematic wetlands based on wet signatures in aerial imagery and drew preliminary boundaries prior to the field visit. These boundaries were then field verified by the field team, through observations of onsite conditions, and the boundaries were adjusted as needed.

Previous delineation data was used when an area was not accessible due to pasture usage at time of delineation.

3.2.1 Vegetation

Sampling plots were established at representative wetland and upland points along the delineated boundary. Additionally, sampling plots were established at selected areas, such as locations where aerial photography had wet signatures present, to confirm the presence or absence of wetlands. Wetland scientists visually estimated species absolute percent cover to determine the total percent cover of each vegetation stratum. Vegetation scientific names and wetland indicator statuses conform to those listed in The National Wetland Plant List: 2020 Wetland Ratings, Version 3.5 (USACE 2020). Per the 1987 Manual and the Supplement, an area is considered to support hydrophytic vegetation community if any of the following indicators are present at the sample site:

- **Indicator 1, Rapid Test for Hydrophytic Vegetation -** All dominant species across all strata, based on the 50:20 rule, are rated as obligate wetland plants and/or facultative wetland plants.
- **Indicator 2, Dominance Test -** More than 50 percent of the dominant plant species across all strata are rated obligate, facultative wetland, or facultative.
- **Indicator 3, Prevalence Index -** The result of the Prevalence Index is less than or equal to 3.0, in the absence of disturbed or problematic hydrology and/or soils.
- **Indicator 4, Morphological Adaptations** - The plant community passes either the dominance test or the prevalence index after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands, in the absence of disturbed or problematic hydrology and/or soils.

3.2.2 Soils

The soil profile within each sampling plot was assessed for the presence of hydric soil indicators. A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA-NRCS 1995).

Soil borings were advanced with a shovel to depths of approximately 20 inches, unless otherwise restricted. Information collected at each soil profile included horizon depth and range, texture, color, and the presence, absence, location, and relative abundance of any redoximorphic features. Colors of the soil matrix and any redoximorphic features were identified using standard notations in Munsell® soil color charts (Munsell Color 2009).

Hydric soil indicators established in the 1987 Manual, the Supplement, and in Field Indicators of Hydric Soils in the United States, Version 8.2 (USDA-NRCS 2018) were used to determine the presence of characteristic soil morphologies resulting from prolonged saturation and/or inundation. Per Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin (USDA-NRCS 2006), hydric soil indicators for Major Land Resource Area 142 of Land Resource Region R apply to the Survey Area. Indicators that are not applicable to Land Resource Region R as a whole or specifically to Major Land Resource Area 142 were not considered on Wetland Determination Data Forms.

3.2.3 Hydrology

The Supplement lists 18 primary and 11 secondary wetland hydrology indicators that apply to the Survey Area. Wetland hydrology exists if at least one primary indicator is present or, in the absence of primary indicators, at least two secondary indicators described in the 1987 Manual and the Supplement are present.

3.3 Waterbody Identification Methodology

The limits of jurisdiction for non-tidal WOTUS in the absence of adjacent wetlands is the ordinary high water mark (OHWM) (33 CFR 328.4(c)). The OHWM is established by observations of water fluctuation, physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the soil character, destruction of terrestrial vegetation, presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3(e)).

In contrast with the federal regulations, Article 15 regulates 50-feet from the top of bank of protected waters, as defined in Section 2.3. As all surface water features onsite are considered Class C or Class D surface water features, top of bank was not field mapped.

Other waterbodies such as ponds and lakes were delineated based upon visual evidence of normal pool elevation using many shoreline indicators used for stream OHWMs. Wetland scientists used survey flagging to delineate waterbodies, including ditches and drainages, with unique alphanumeric identifiers.

3.4 Quality Assurance/Quality Control

Each field team included an experienced wetland scientist as the delineation team leader. Field data, including GPS data, Wetland Determination Data Forms, photographs, and logbooks, were subjected to daily quality assurance/quality control (QA/QC) reviews by the field team. Data forms and GPS data were subjected to QA/QC review by the field team and the geographic information system (GIS) support team at the conclusion of the field survey. A final QA/QC review of the data was performed in the office by a senior scientist and the GIS team, including review of the data sheets and boundary and flag placement for select wetlands.

4 Results and Discussion

The field survey delineated a total of 349 wetlands within the Survey Area. Several of the wetlands were composed of two or more of the Cowardin cover classes (Cowardin et al. 1979). Appendix B provides the following wetland delineation information:

- Table B-1: Summary of Delineated Wetlands
- Wetland Determination Data Forms
- Upland Verification Point Data Forms
- Wetland photographs

The field survey delineated a total of 19 ponds (mapped as PUB wetlands), 33 perennial streams, 17 intermittent streams, 6 ephemeral streams, and 277 ditches/drainage features in the Survey Area. Appendix C provides the following waterbody delineation information:

- Table C-1: Summary of Delineated Waterbody and Drainage Features
- Stream Data Forms
- Stream photographs

Figure D in Appendix D provides a map book of the results of the field delineation, as well as remote sensing data for the 100-foot buffer area based on interpretation of wetland, waterbody, and soils mapping; observations from adjacent accessible properties; and recent and historical aerial imagery. Figure E in Appendix E provides a map book of the results of the field delineation without the remote sensing data. The two mosaic wetlands are indicated on both Figures D and E in the respective appendices. Portions of on-site waterbodies that extended outside the Survey Area were estimated through remote sensing as shown in Appendix D. A brief description of the delineated resources follows.

4.1 General Wetland Descriptions

Three freshwater wetland classes in the Palustrine System were identified in the Survey Area, in accordance with the classification system used by NWI (Cowardin et al. 1979; FGDC 2013). Table 4-1 summarizes the wetland classes identified, and brief descriptions of the dominant hydrophytic vegetation observed within the different wetland classes are presented below. More details are included in Appendix B, Table B-1.

Table 4-1 Summary of Delineated Wetland Classes in the Survey Area

	PEM[1]	PSS[2]	PFO[3]	Total
Number of Features	233	36	80	349
Total Acreage	563.4	154.9	765.7	1,484

Notes:
[1] PEM = Palustrine emergent
[2] PSS = Palustrine scrub/shrub
[3] PFO = Palustrine forested

Palustrine Emergent (PEM) - This class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. These wetlands are usually dominated by perennial plants, and vegetation is present for most of the growing season in most years (Cowardin et al. 1979; FGDC 2013). Trees and sapling/shrubs may occur within these wetlands, but neither stratum occurs at greater than or equal to 30%.

Some areas delineated as PEM wetlands included areas that could be classified as palustrine farmed wetlands, which occur where the soil surface has been mechanically or physically altered for production of crops, but where hydrophytes would become re-established if the farming were discontinued (Cowardin et al. 1979; FGDC 2013). These areas supported stunted row crops and common ruderal species, or were devoid of vegetation but included hydric soils and evidence of wetland hydrology. For the purposes of this project, these areas were not classified separately from PEM wetlands.

Palustrine Scrub/Shrub (PSS) – These wetlands are dominated by 30% or more cover of woody vegetation less than 6 meters (20 feet) tall. Trees comprise less than 30 percent cover. Vegetation includes true shrubs, tree saplings, and trees or shrubs that are small or stunted because of environmental conditions (Cowardin et al. 1979; FGDC 2013).

Palustrine Forested – These wetlands are characterized by 30% or more cover of woody vegetation 6 meters (20 feet) tall or taller. They normally possess an overstory of trees, an understory of saplings or shrubs, and an herbaceous layer. Vegetation is dominantly a mix of broad-leaved deciduous, needle-leaved deciduous, and needle-leaved evergreen trees (Cowardin et al. 1979; FGDC 2013).

Wetland Soils – The most common hydric soil indicators observed onsite included A11 (Depleted Below Dark Surface), F3 (Reduced Matrix), and F6 (Redox Dark Surface).

4.2 General Waterbody Descriptions

During the surveys, the flow regime of streams was based on the definitions developed by the EPA for perennial, intermittent, and ephemeral streams (EPA 2023a). Table 4-2 provides a summary of the flow regime of delineated streams.

Table 4-2 Summary of Delineated Stream Types in the Survey Area

	Perennial	Intermittent	Ephemeral	Total
Number of Features	33	17	6	**56**
Total Length (linear feet)	34,443	12,341	4,978	**51,762**

More details are included in Appendix C, Table C-1.

Perennial - These are streams that typically have water flowing in them year-round. Most of the water comes from smaller upstream waters or groundwater, while runoff from rainfall or other precipitation is supplemental.

Intermittent - These are seasonal streams that flow during certain times of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall or other precipitation supplements the flow of seasonal stream. During dry periods, intermittent streams may not have flowing surface water. Larger seasonal streams are more common in dry areas.

Ephemeral - These are rain-dependent streams that flow only after precipitation. Runoff from rainfall is the primary source of water for these streams. Like seasonal streams, they can be found anywhere but are most prevalent in arid areas.

Additional Features - Additional features delineated in the Survey Area included anthropogenic ditches, natural drainages, and swales that lack a defined bed and bank and/or an OHWM. WSP identified and mapped a total of 277 ditches and drainage features to document hydrologic connections or lack of connections between delineated wetlands and other waters.

Palustrine Unconsolidated Bottom - These are essentially small ponds with at least 25% cover of particles smaller than stones and vegetation cover less than 30% (Cowardin et al. 1979; FGDC 2013). The ponds delineated within the Survey Area typically had narrow fringes of herbaceous and scrub/shrub vegetation along their shorelines extending somewhat into the interior.

4.3 USACE-Regulated Wetlands and Waterbodies

Review of the delineated features identified 349 wetlands and 56 waterbodies, all of which would be federally-jurisdictional under a Preliminary Jurisdictional Determination. Verona Solar may choose to pursue and Approved Jurisdictional Determination for select wetlands and waterbody features at a later date. Appendix B (Waterbody Data Package) and Appendix C (Waterbody Data Package) describe the characteristics of the wetlands and waterbodies and drainage features in more detail. Figure D in Appendix D and Figure E in Appendix E identify hydrologic connections between drainage features and wetland and/or stream features.

4.4 NYSDEC-Regulated Wetlands and Waterbodies

There are Class C and Class D streams mapped in the Survey Area, which are not regulated by NYSDEC. Therefore, all streams delineated by WSP in the Survey Area are either Class C if they are tributaries of a NYSDEC-mapped Class C stream, or Class D, as all unclassified and/or unmapped streams are assigned to the same classes and standards as their receiving waters (6 NYCRR §910.4).

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