



Appendix 13-B
Wetland and Stream Delineation Report and Function and Value Assessment



**Wetland and Stream
Delineation Report and
Function and Value Assessment**

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Prepared for:

Hecate Energy Cider Solar LLC
621 W. Randolph Street
Chicago, IL 60661

Prepared by:



Stantec Consulting Services Inc.
61 Commercial Street, Suite 100
Rochester, NY 14614

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1.0 INTRODUCTION

Hecate Energy Cider Solar, LLC (Hecate or Applicant), a subsidiary of Hecate Energy, LLC, is proposing to construct, operate and maintain an up to 500-megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy generation facility, referred to as the Cider Solar Farm (Project). The Project will be located on approximately 4,650 acres of leased private land in the towns of Elba and Oakfield, Genesee County, New York. The Project location is depicted in Figure 1 (Appendix A).

Stantec Consulting Services Inc. (Stantec) was retained to identify and delineate wetlands and stream within and adjacent to the proposed project components. The Study Area for the delineation effort includes an area of 100-feet from the limits of disturbance around all project components (Study Area). The Study Area comprised approximately 4,306 acres and is depicted in Figure 2 (Appendix A).

2.0 PURPOSE

This study was conducted to identify and delineate Waters of the United States (WOUS), including wetlands and streams, and New York freshwater wetlands and regulated adjacent areas that occur within the Project Study Area. This report has been prepared to support a future permit application to the United States Army Corps of Engineers (USACE) for authorization to conduct regulated activities within jurisdictional WOUS under Section 404 of the Clean Water Act (CWA) as a result of Project construction, if required. Further, this report is prepared to support the environmental review process conducted by the NYS Department of State Office of Renewable Energy Siting (ORES) pursuant to New York State Executive Law § 94-c of the New York State Executive Law (effective March 3, 2021) (Section 94-c).

3.0 STATE AND FEDERAL WETLAND AND WATERBODY REGULATIONS

3.1 FEDERAL REGULATIONS

The CWA was implemented to restore and maintain the chemical, physical, and biological integrity of the WOUS. Under Sections 401 and 404 of the CWA, permits must be obtained prior to certain activities that may impact WOUS. Section 401 of the CWA requires state certification for any federally permitted action that may impact WOUS. For this Project, the New York State agency responsible for administering the Section 401 program is anticipated to be ORES.

The permitting agency for Section 404 permits is the USACE. Section 404 of the CWA requires that a permit be obtained for the discharge of dredged or fill material into delineated WOUS.

WOUS are defined under 33 Code of Federal Regulations (CFR), and includes all lakes, ponds, streams (intermittent and perennial), and wetlands. Wetlands are specifically defined as “*those areas that are*



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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" (US Environmental Protection Agency [USEPA] 2001). Wetlands are indicated by the presence of three criteria: a dominance of hydrophytic vegetation, hydric soils, and evidence of wetland hydrology during the growing season (Environmental Laboratory 1987).

On April 21, 2020, the USEPA and the Department of the Army published the Navigable Waters Protection Rule (NWPR), and the Final Rule became effective June 22, 2020. In this rule, the agencies have revised the definition of Waters of the United States to include four categories of jurisdictional waters, including:

- (a)(1) Territorial seas & traditional navigable waters (TNWs): Territorial seas and waters which are currently used, or were used in the past, or may be susceptible to use interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide.
- (a)(2) Tributaries to an (a)(1) water: Defined as intermittent or perennial; naturally occurring; and contributes surface flow to an (a)(1) water in a typical year either: directly, via one or more (a)(2)-(a)(4) waters, or via non-jurisdictional connector(s). This excludes ephemeral drainages and most ditches.
- (a)(3) Lakes and ponds, and impoundments of a WOUS: Defined as standing bodies of open water that:
 - 1. contribute surface flow to an (a)(1) water in a typical year either: directly, via one or more (a)(2)-(a)(4) waters, or via non-jurisdictional connector(s)
 - 2. are inundated by flooding from an (a)(1) – (a)(3) water in a typical year
- (a)(4) Wetlands adjacent to an (a)(1), (a)(2), or (a)(3) water: Defined as wetlands that:
 - 1. abut: touch at least one point or side of an (a)(1) – (a)(3) water
 - 2. are inundated by flooding from an (a)(1) – (a)(3) water in a typical year
 - 3. are physically separated from an (a)(1) – (a)(3) water only by:
 - one natural feature (berm, bank, dune, etc.)
 - an artificial barrier if the barrier allows for a direct hydrological surface connection in a typical year via culvert, flood/tide gate, pump or similar feature

The NWPR also includes a list of twelve types of features excluded from USACE jurisdiction, including:

- 1. Waters not listed as WOUS
- 2. Groundwater
- 3. Ephemeral features
- 4. Diffuse stormwater runoff/sheet flow
- 5. Ditches not identified as WOUS
- 6. Prior converted cropland
- 7. Artificially irrigated areas
- 8. Artificial lakes and ponds
- 9. Water-filled depressions incidental to mining or construction activity



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10. Stormwater control features
11. Groundwater recharge, water reuse, and wastewater recycling structures
12. Waste treatment systems

The NWPR defines a ditch as a constructed or excavated channel used to convey water. Certain ditches that are ephemeral, constructed in wetlands, and constructed in uplands are not WOUS. Ditches are only jurisdictional when they are:

1. intermittent or perennial, AND are:
 - an (a)(1) water,
 - constructed in or relocate an (a)(2) water, or
 - constructed in an (a)(4) water
2. constructed in an (a)(4) water and develop wetland characteristics

3.2 NEW YORK STATE REGULATIONS

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas (100-foot upland buffer). The Freshwater Wetlands Act requires the NYSDEC to map all protected wetlands to allow landowners and other interested parties a means of determining where state jurisdictional wetlands exist. Regulations were adopted to implement the Act under 6 NYCRR Parts 663 and 664. Part 664 of the regulations designates wetlands into four classes based on the quality of the wetlands, with Class 1 being the highest or best quality wetland and Class 4 being the lowest. In general, wetlands regulated by the state are those 12.4 acres in size or larger. Smaller wetlands may also be regulated if they are considered of unusual importance. A 100-foot adjacent area around the delineated boundary of any state wetland is also under NYSDEC jurisdiction. The location and approximate boundaries of wetlands regulated by the State of New York under Article 24 are depicted on published NYS Freshwater Wetland Maps.

Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected stream, are considered to be part of a stream and are subject to the regulation under the stream protection category of Article 15. The term “protected stream” means any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, or C(T) or C(TS) (6NYCRR Part 701). A classification of AA or A indicates that the best use of the stream is as a resource of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B streams are primary and secondary contact recreation, and fishing. The best usage of Class C streams is fishing. Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning. State water quality classifications of unprotected streams include Class C and Class D streams. Waters with a classification of Class D are suitable for fishing and non-contact recreation.

Construction and operation of energy generation projects with a nameplate capacity of 25 MW or greater are subject to review by ORES under Section 94-c. An application prepared pursuant to Section 94-c requires compliance with the substantive provisions of the standards for Article 24 Freshwater Wetlands



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Act and Article 15 Protection of Waters (Article 24, 6 NYCRR Part 663; Article 15, 6 NYCRR Part 608). Permits under these regulations would be required for the modifications, crossings or impacts of protected streams or regulated freshwater wetlands and regulated adjacent areas by project components. Given the nameplate capacity of the proposed Project, if Project components will impact NYSDEC protected streams and regulated freshwater wetlands, requiring Article 15 and/or 24 permits, the procedural requirements are supplanted by Section 94-c (final regulation, March 2021, <https://ores.ny.gov/regulations>).

4.0 PROJECT SITE AND STUDY AREA DESCRIPTION

The Project Site and Study Area located north-centrally within Genesee County, approximately five miles north of the City of Batavia (Appendix A; Figure 1). The Study Area is roughly bound by County Route 9/Albion Road to the west, Miller Road and vacant land to the east. Lockport Road bisects the Study Area from east to west, while State Route 98 traverses the eastern portion of the Study Area. The Villages of Oakfield and Elba are located approximately 1.5 miles and 0.7 miles (respectively) south of the Study Area southern boundary.

The Study Area is located within the Oak Orchard-Twelve-mile watershed (HUC 04130001), which totals 661,707 acres in size. The watershed is nearly level to rolling topography on the Ontario lake Plain. The project site is located on the southern portion of the watershed, where the elevation is highest, relative to the rest of the watershed. The Study Area receives, on average, 34-36 inches of precipitation a year, more than half of which falls within the growing season (NRCS 2010).

The Study Area is generally characterized by active agriculture, primarily row crops such as soybean, corn, and wheat; and rural residential land interspersed with forested areas/hedgerows with level to rolling topography. Upland forests border many of the agricultural lands and are characterized by a mixture of northern hardwood forests and planted pine and spruce stands. Not all of the land included in the Study Area will be included in the final Project footprint; rather, the Study Area represents the broader area within which selected areas will be surveyed, micrositied and developed with solar panels and related infrastructure (Project Site). This provides flexibility during project development to minimize impacts to aquatic features and other sensitive resources.

Regarding FEMA floodplain data, Genesee County has effective data from 1981-1984; however, the data is not available digitally. The county is currently going through the FEMA process of updating the FIRM products countywide, and this data will not be made available until 2022 (FEMA.gov 2020).

4.1 SOILS

A review of the soil survey maps of Genesee county indicates that there are numerous soil series present within the Study Area (NRCS 2019) (Figure 3, and Table 1). The most prominent soil series include Ontario loam (well drained), Ovid silt loam (somewhat poorly drained), Appleton silt loam (somewhat poorly drained), Rhinebeck silt loam (somewhat poorly drained), Canandaigua silt loam (poorly drained), and Hilton loam (moderately well drained). Soil drainage in the Study Area is variable, with well drained to somewhat poorly drained upland soils, and poorly drained to very poorly drained hydric soils (NRCS 2019).



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Table 1. Soils Present in the Study Area

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Soil Rating	Acres within the Study Area
Ad	Alden mucky silt loam	Very poorly drained	Yes	3.7
ApA	Appleton silt loam, 0 to 3 percent slopes	Somewhat poorly drained	No	197.1
ArB	Arkport very fine sandy loam, 1 to 6 percent slopes	Well drained	No	74.2
ArC	Arkport very fine sandy loam, 6 to 12 percent slopes	Well drained	No	13.0
Br	Bergen muck	Very poorly drained	Yes	3.0
CaA	Canandaigua silt loam, 0 to 2 percent slopes	Poorly drained	Yes	275.3
CbA	Canandiagua mucky silt loam, 0 to 2 percent slopes	Very poorly drained	Yes	17.2
CeB	Cazenovia silt loam, 3 to 8 percent slopes	Moderately well drained	No	6.6
CeC	Cazenovia silt loam, 8 to 15 percent slopes	Moderately well drained	No	0.9
CgC3	Cazenovia silty clay loam, 8 to 15 percent slopes, eroded	Moderately well drained	No	1.9
CgD3	Cazenovia silty clay loam, 15 to 25 percent slopes, eroded	Moderately well drained	No	1.2
CIB	Collamer silt loam, 2 to 6 percent slopes	Moderately well drained	No	77.8
DuB	Dunkirk silt loam, 2 to 6 percent slopes	Well drained	No	5.8
Fo	Fonda mucky silt loam	Very poorly drained	Yes	0.6
FpA	Fredon gravelly loam, 0 to 3 percent slopes	Somewhat poorly drained	No	2.2
GnA	Galen very fine sandy loam, 0 to 2 percent slopes	Moderately well drained	No	18.8
GnB	Galen very fine sandy loam, 2 to 6 percent slopes	Moderately well drained	No	27.6
GP	Gravel pits		No	3.2
HaA	Halsey silt loam, 0 to 4 percent slopes	Very poorly drained	Yes	0.1
Hf	Hamlin silt loam	Well drained	No	0.5
HIA	Hilton loam, 0 to 3 percent slopes	Moderately well drained	No	214.9



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Table 1. Soils Present in the Study Area

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Soil Rating	Acres within the Study Area
HIB	Hilton loam, 3 to 8 percent slopes	Moderately well drained	No	595.7
La	Lakemont silty clay loam, 0 to 3 percent slopes	Poorly drained	Yes	127.8
Ld	Lamson very fine sandy loam	Poorly drained	Yes	39.2
Le	Lamson mucky very fine sandy loam	Very poorly drained	Yes	1.1
LmA	Lima silt loam, 0 to 3 percent slopes	Moderately well drained	No	44.0
LmB	Lima silt loam, 3 to 8 percent slopes	Moderately well drained	No	121.0
LoA	Lyons soils, 0 to 3 percent slopes	Poorly drained	Yes	80.0
Ma	Madalin silty clay loam, 0 to 3 percent slopes	Poorly drained	Yes	44.8
MnA	Minoa very fine sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	No	14.4
NgA	Niagara silt loam, 0 to 2 percent slopes	Somewhat poorly drained	No	62.1
OdA	Odessa silt loam, 0 to 3 percent slopes	Somewhat poorly drained	No	158.8
OdB	Odessa silt loam, 3 to 8 percent slopes	Somewhat poorly drained	No	28.1
OnA	Ontario loam, 0 to 3 percent slopes	Well drained	No	119.6
OnB	Ontario loam, 3 to 8 percent slopes	Well drained	No	554.2
OnC	Ontario loam, 8 to 15 percent slopes	Well drained	No	224.8
OnD	Ontario loam, 15 to 25 percent slopes	Well drained	No	40.0
OvA	Ovid silt loam, 0 to 3 percent slopes	Somewhat poorly drained	No	279.5
OvB	Ovid silt loam, 3 to 8 percent slopes	Somewhat poorly drained	No	317.7
Pd	Palms muck	Very poorly drained	Yes	13.6
PhB	Palmyra gravelly loam, 3 to 8 percent slopes	Well drained	No	35.3
PhC	Palmyra gravelly loam, 8 to 15 percent slopes	Well drained	No	21.2
PkD	Palmyra and Arkport soils, 15 to 25 percent slopes	Well drained	No	8.6
PsA	Phelps gravelly loam, 0 to 3 percent slopes	Moderately well drained	No	30.5



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Table 1. Soils Present in the Study Area

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Soil Rating	Acres within the Study Area
PsB	Phelps gravelly loam, 3 to 8 percent slopes	Moderately well drained	No	30.6
RoA	Rhinebeck silt loam, 0 to 3 percent slopes	Somewhat poorly drained	No	193.0
RsA	Romulus silt loam, 0 to 3 percent slopes	Poorly drained	Yes	62.2
Te	Teel silt loam	Moderately well drained	No	13.7
Wk	Wakeville silt loam	Somewhat poorly drained	Yes	35.7
Wr	Warners mucky loam	Very poorly drained	Yes	0.1
Wy	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	Poorly drained	Yes	58.5

Source: NRCS 2019

5.0 SURVEY METHODS

5.1 DESKTOP ANALYSIS

An initial desktop analysis of the Study Area was conducted prior to performing on-site wetland and stream delineations. The desktop analysis was performed using NYSDEC Freshwater Wetland mapping (NYSDEC 2020), US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (USFWS 2020), US Geological Survey (USGS) topographical mapping (USGS 2018), and Natural Resource Conservation Service (NRCS) soil survey mapping (NRCS 2019). Stantec identified areas likely to contain wetlands and streams using these data resources. Desktop analysis of non-participating properties within the Study Area were performed utilizing the publicly available data sources described above and aerial photograph interpretation.

5.2 FIELD DELINEATIONS

Stantec wetland scientists conducted wetland and stream delineations within the Study Area during July and September 2020, and January 2021. Though surveys were conducted in January, outside the traditional growing season, limited snow cover was present during surveys, soils were unfrozen and able to be sampled, and vegetation was generally identifiable in the field. Wetland boundaries were determined using the technical criteria described in the *Corps Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement* (USACE 2012). In addition, delineated boundaries of freshwater wetlands regulated under Article 24 of the New York Environmental Conservation Law were assessed



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according to methods described in the *New York State Freshwater Wetlands Delineation Manual* (NYSDEC 1995). Wetland boundaries were demarcated with pink flagging.

Data collected for each of the wetlands included the dominant vegetation, hydric soil indicators, and wetland hydrology indicators. Details of each delineated wetland are summarized in Appendix B. Streams and other potential waters of the United States were delineated based on NYSDEC technical criteria and the Navigable Waters Protection Rule; Final Rule (June 22, 2020). Data collected on streams included flow regime, channel width (Ordinary High-Water Mark [OHWM]), and channel substrate. Details of each delineated stream are described in Appendix C. Wetland and stream boundaries were located using an Apple iPad Pro, paired with a Trimble® 'R1' Global Positioning System (GPS) Receiver, capable of sub-meter accuracy. GPS data were used to produce the Natural Resource Maps located in Appendix A. Photographs were taken of each delineated resource. Representative photographs are included in Appendix D. Regional Supplement Wetland Determination Forms were completed for each wetland and are included in Appendix E.

Concurrent with wetland delineations Stantec identified potential vernal pools (PVPs) within the Study Area. Vernal pools are typically ephemeral to semi-permanent bodies of water occurring in shallow depressions that fill with surface water during the spring or fall and may dry during the summer. Because vernal pools characteristically do not support viable populations of predatory fish, they are the preferred breeding habitat for a suite of amphibians including, but not limited to, wood frogs (*Lithobates sylvaticus*), spotted salamanders (*Ambystoma maculatum*), and blue spotted salamanders (*Ambystoma laterale*), as well as invertebrate species such as fairy shrimp (*Eubrachyus* sp.). During delineations, Stantec identified PVPs based upon physical characteristics within wetlands such as shallow surface water, sparsely vegetated depressions, and evidence of variable water levels (e.g., water marks on trees).

6.0 SURVEY RESULTS

6.1 DESKTOP ANALYSIS

NWI mapping indicates the presence of numerous wetlands and streams within the Study Area. NWI mapping categorizes wetlands based on their dominant vegetative community and streams on their flow type and substrate using the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (FGDC 2013). For NWI purposes, a single contiguous wetland may be separated into one or more vegetative communities and mapped as different wetlands. A review of the NWI database indicates that the NWI-mapped wetlands in the Study Area are predominantly palustrine forested and scrub-shrub wetland types (NWI 2020).

NYSDEC Freshwater Wetlands mapping indicates that there are 15 wetlands mapped by the State within the Study Area, some of which consist of multiple polygons (See Table 2). These wetlands are either Class 2 or Class 3 wetlands. Portions of 34 field delineated wetlands intersect these NYSDEC mapped wetland polygons; 3 intersect Class 1 wetlands, 22 intersect Class 2 wetlands, 9 intersect Class 3 wetlands (NYSDEC 2020).



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According to the NYSDEC Environmental Resource Mapper, portions of 20 streams mapped by the State are located within the Study Area, all of which are unnamed tributaries to Oak Orchard Creek, and designated as Class C, with a Standard of C (NYSDEC 2020). As such, none of these streams are designated as protected, pursuant to Article 15 of the Protection of Waters Program.

Table 2. Summary of Mapped NYSDEC Wetlands Occurring within the Study Area

Wetland	Class ¹	Total Size (acres)	Size Within Study Area (acres) ²
AB-1	2	1057.2	0.38
BN-1	3	31.3	4.50
BN-2	2	129.6	7.89
BN-4	2	167.9	6.99
BN-6	2	20.4	0.03
BN-7	2	45.8	7.56
BN-9	2	37.2	4.20
BN-10	2	23.9	0.26
BN-11	3	54	17.73
BN-12	2	19	1.68
BN-13	2	20.7	12.30
BN-14	3	21.9	1.46
BN-15	2	21.5	1.44
OK-1	1	4572.2	0.71
OK-11	2	100.9	2.44

¹ NYSDEC wetland classification system utilizes four separate classes to rank wetlands according to the benefits provided by their functions and values, ranging from Class 1 (most benefits) to Class 4 (fewer benefits).

² Field delineations extended or reduced State-mapped wetlands depending on the amount of co-location (NYSDEC wetland and Study Area) and site conditions.

6.2 FIELD DELINEATIONS

Wetland resources were field delineated, and a variety of dominant vegetative communities were present throughout the Study Area including: scrub-shrub wetlands (PSS), forested wetlands (PFO), emergent wetlands (PEM), and freshwater ponds (PUB). A total of 119 delineated wetlands were located within the Study Area. Two of these wetlands, WL112 and WL113, were delineated based on a desktop analysis and visual observations while in the field, due to these features being on non-participating parcels. Of these wetlands, PFO and PEM dominated wetlands occurring most often accounting for 38 and 34, respectively, of the delineated wetlands with a single dominant vegetative community. Thirty-nine of the delineated wetlands were classified as having co-dominant vegetative communities (Table 3).



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Table 3. Summary of Dominant Wetland Community Types for Field Delineated Wetlands

Dominant Wetland Community Type	Number of Field Delineated Wetlands	Approximate Total Area (acres)
PFO	38	89.68
PSS	6	3.89
PEM	34	18.43
PUB	2	0.27
PFO/PSS	3	8.19
PFO/PEM	24	102.91
PSS/PEM	3	8.16
PFO/PUB	1	13.45
PEM/PUB	1	0.07
PFO/PSS/PEM	5	19.08
PFO/PSS/PEM/PUB	1	11.87
Total	119	278.09

Of the 119 delineated wetlands, it was determined that 47 are likely jurisdictional under Article 24 Freshwater Wetlands Act, based on consultation with ORES and the issuance of a Final Jurisdictional Determination (Appendix G). Stantec field studies and desktop analysis suggest all of the 119 field delineated wetlands are potentially jurisdictional by the USACE under section 404 of the CWA due to connections with adjacent and other navigable WOUS. The approximate total area of field delineated wetlands was 278.09 acres, 6.5% of the total Study Area. The Wetland Summary table lists the delineated wetland identification information (dominant vegetation, wetland hydrology Indicators, and hydric soil indicators) and pertinent details regarding NYSDEC wetland status (Appendix B).

Stantec delineated a total of 76 streams within the Study Area, comprising a total linear length of 12.9 linear miles of streams. Of the 76 delineated streams, 33 are mapped as Class C, with a Standard of C, streams under Article 15. Twenty-eight of the delineated streams are likely not jurisdictional under Section 404 of the CWA, due being either hydrologically isolated and/or having an ephemeral flow regime. The stream summary tables in Appendix C provides detailed information for each stream; including Resource ID, top-of-bank width and depth, OHWM width and depth, substrate, flow regime, State and Federal jurisdiction, NYSDEC class, Waterbody Index Name, stream order (using the Strahler method), and stream name (Appendix C).

Delineated wetlands and streams were found along the edges of agricultural fields and depressional areas in the landscape and include four primary wetland types and a variety of stream flow regimes (e.g., perennial to ephemeral). Brief descriptions of the common wetland community types and streams are described below. All wetlands and streams delineated with the Study Area are depicted on the Wetland and Stream Delineation Figures (Appendix A).



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GIS shapefiles for all delineated aquatic resources will be provided with the submittal of this report. Descriptions of typical delineated wetlands and streams are provided below. Routine determination forms for each feature are provided in Appendix E.

Palustrine Forested Wetlands (PFO)

Broad-leaved deciduous wetlands occurred in conjunction with all the other wetland community types including needle-leaved evergreen forested wetlands. These wetlands receive runoff from the surrounding landscape and are often inundated and characterized by poorly drained soils. Common species of vegetation in these wetlands include silver maple (*Acer saccharinum*), eastern cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), black willow (*Salix nigra*), riverbank grape (*Vitis riparia*), spotted jewelweed (*Impatiens capensis*), Morrow's honeysuckle (*Lonicera morrowii*), devil's beggarticks (*Bidens frondosa*), and poison ivy (*Toxicodendron radicans*).

Palustrine Scrub-shrub Wetlands

Palustrine scrub-shrub wetlands (PSS) occurred mostly within depressions or along streams within the Study Area. These wetlands may be inundated with several inches of water or be nearly dry at various times during the growing season. The PSS wetlands were often found in conjunction with forested and emergent wetlands. Common species of vegetation within these wetlands include black willow (*Salix nigra*), silky dogwood (*Cornus amomum*), gray dogwood (*Cornus racemosa*), green ash, reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), panicled aster (*Symphotrichum lanceolatum*), Virginia creeper (*Parthenocissus quinquefolia*), and riparian grape.

Palustrine Emergent Wetlands

Palustrine emergent wetlands (PEM) were found throughout the Study Area, primarily within and along the edges of farm fields, in conjunction with scrub-shrub and open water wetlands, or on the fringe of forested wetlands. Many of the large, contiguous wetland communities had an emergent wetland component. Common species of vegetation within these wetlands included narrow-leaf cat-tail (*Typha angustifolia*), creeping jenny (*Lysimachia nummularia*), reed canary grass, red top grass (*Agrostis gigantea*), dark green bulrush (*Scirpus atrovirens*), lady's thumb (*Persicaria maculosa*), straw-colored flat sedge (*Cyperus strigosus*), lamp rush (*Juncus effusus*), cottongrass bulrush (*Scirpus cyperinus*), spotted jewelweed, and common reed.

Open Water Wetlands

Delineated open water wetlands (PUB) were created by either farmers for irrigation, drainage, or historically, for livestock. These ponds occurred in a variety of settings, including open fields, emergent wetlands, scrub-shrub wetlands. They typically contained more than 3 feet of water and were fringed by emergent vegetation.

Streams

Streams in the Study Area generally flow to the north and northwest, and eventually connect to Oak Orchard Creek, outside of the Study Area. The delineated streams were evenly distributed throughout the Study Area but were primarily located outside the boundaries of active agricultural fields. The majority of streams had an ephemeral or intermittent flow regime, with many of these having been altered, maintained, and/or channelized to suit various agricultural land use needs. Several of the larger, meandering streams that have



CIDER SOLAR FARM WETLAND AND STREAM DELINEATION REPORT AND FUNCTION AND VALUE ASSESSMENT

not been historically altered have a perennial flow. Substrates generally consisted of a mix of cobble, gravel, sand, silt, and clay.

Summary

Stantec delineated 119 wetlands and 76 streams in the Study Area. Many of the delineated wetlands and streams are part of larger systems. Of the 119 delineated wetlands, 47 are jurisdictional in the State of New York under Article 24 of the Freshwater Wetlands Act, according to ORES' Approved Jurisdictional Determination (Appendix G). Of the 119 delineated wetlands, 119 are likely jurisdictional by USACE under Section 404 of the CWA due to connections with adjacent and other navigable WOUS.

Of the 76 delineated streams, 32 are mapped as Class C, with a Standard of C, streams under Article 15; however, none of these meet the criteria for jurisdiction under Article 15. Fifty-eight delineated streams are likely jurisdictional under Section 404 of the CWA. Stantec also identified 10 PVPs during wetland delineations. The USACE may regulate vernal pools under Sections 404 and 401 of the CWA. The jurisdictional status of all wetlands and streams would be determined following an official jurisdictional determination provided by the USACE.

7.0 WETLAND FUNCTION AND VALUE ASSESSMENT

Stantec completed a wetland function and value assessment of the delineated wetlands following, in large part, *The Highway Methodology Workbook Supplement: Wetland Function and Value, A Descriptive Approach* (USACE 1999). This method bases function and value determinations on the presence or absence of specific criteria for each of the thirteen wetland functions and values: groundwater recharge/discharge; floodflow alteration; fish and shellfish habitat; sediment/toxicant retention; nutrient removal; production export; sediment/shoreline stabilization; wildlife habitat; recreation; educational/scientific value; uniqueness/heritage; visual quality/aesthetics; and endangered species habitat. Results of this assessment are presented in Appendix F and summarized below.

Function provided by many of the delineated wetlands include groundwater recharge/discharge; floodflow alteration; water quality protection (i.e., sediment/toxicant retention; and nutrient removal) and wildlife habitat. Those wetlands associated with streams also would provide sediment/shoreline stabilization, and those associated with perennial streams would contribute to fish and shellfish habitat. Although these functions are not principal for all the delineated wetlands, it is expected that they provide these functions by varying degrees depending upon characteristics such as size, percent of vegetation cover, and landscape position. Larger wetland complexes would have a greater capacity to provide most functions. Similarly, wetlands dominated by dense vegetation would be more capable of retaining and slowing surface flow, thereby reducing potential flooding, and protection water quality by allowing sediment to settle out of the water column. Since the Project would be located on privately owned land, it is not expected that the delineated wetlands provide significant social values such as recreation, education/scientific value, or visual/aesthetic value for the general public.



CIDER SOLAR FARM WETLAND AND STREAM DELINEATION REPORT AND FUNCTION AND VALUE ASSESSMENT

Appendix F provides a summary of the vegetation and hydrologic characteristics for each delineated wetland as well as the 100-foot buffer around each wetland. The wetlands were assigned to 1 of 3 size categories based upon the field delineated wetland area and each was assigned a predicted functional capacity based upon wetland and buffer characteristics, and the wetland's opportunity to provide the assessed functions. Principal functions also were identified for each delineated wetland. The identification of principal wetland functions incorporated information collected during field delineations and publicly available information such as aerial photographs, NWI data, and NYDEC mapped wetlands. The following provides a brief summary of principal functions identified for wetlands within the Study Area.

Floodflow alteration: All the delineated wetlands can receive and detain precipitation and surface runoff, thereby slowing or desynchronizing overland flows and contributing to cumulative flood protection capacity in the watershed. Those wetlands associated with streams would be expected to have greater opportunity to provide this function.

Water quality protection: Similar to floodflow alteration, each of the delineation wetlands have some capacity to provide water quality protection. Those wetlands located adjacent to development including roads, residences, and agricultural areas would have a greater opportunity to provide this function than isolated wetlands away from development.

Wildlife habitat: many of the delineated wetlands not directly in active agricultural fields have the potential to function as wildlife habitat. However, wildlife habitat provided by these wetlands is not necessarily for wetland-dependent species. Many of the wetlands provide foraging, cover, travel corridor, roosting and breeding habitats for generalist wildlife species, similar to upland habitats in the surrounding landscape. Those wetlands with open water or emergent marsh would provide potential habitat for waterfowl, wading birds, and amphibians.

Fish and shellfish habitat: Perennial streams and some areas of open water within the delineated areas may be capable of providing habitat for fish. Wetlands located along these streams, as well as other perennial waters, may help protect water quality and provide thermal protection by shading the streams.

Sediment and shoreline stabilization: Similar to the function of fish and shellfish habitat, wetlands along streams can provide bank stabilization and thereby protect the streams from erosion and protect water quality.



8.0 REFERENCES

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WETLAND AND STREAM DELINEATION REPORT AND FUNCTION AND VALUE ASSESSMENT**

US Fish and Wildlife Service (USFWS). National Wetlands Inventory Wetland Mapper. Last Modified May 2020. Accessed July 2020, from <https://www.fws.gov/wetlands/data/Mapper.html>.



APPENDICES

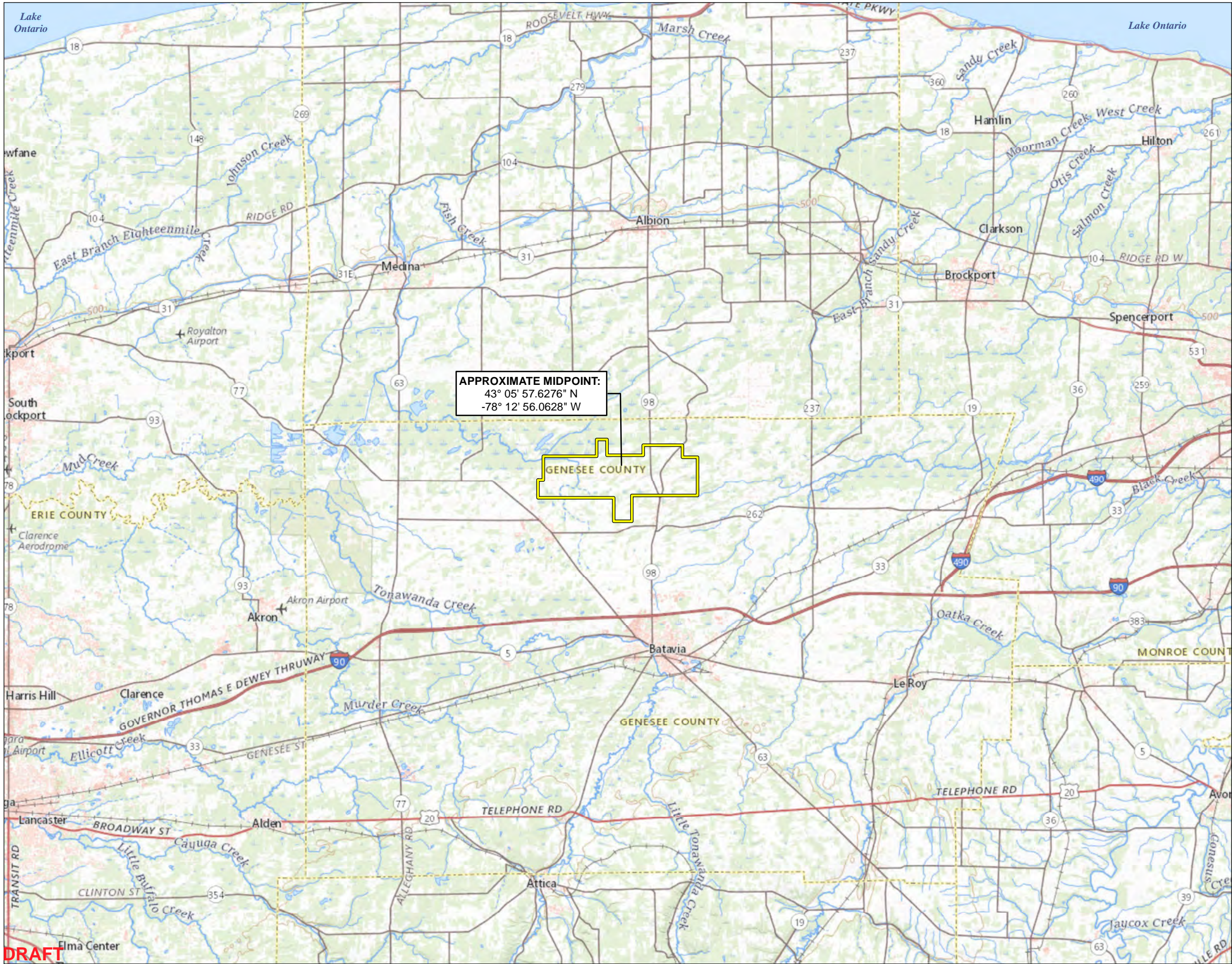


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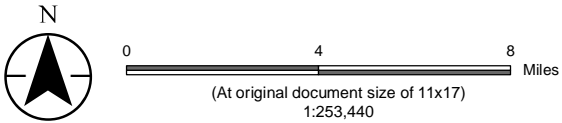
Appendix A Figures

Appendix A FIGURES





Legend
Project Area



Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Background: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental



Project Location
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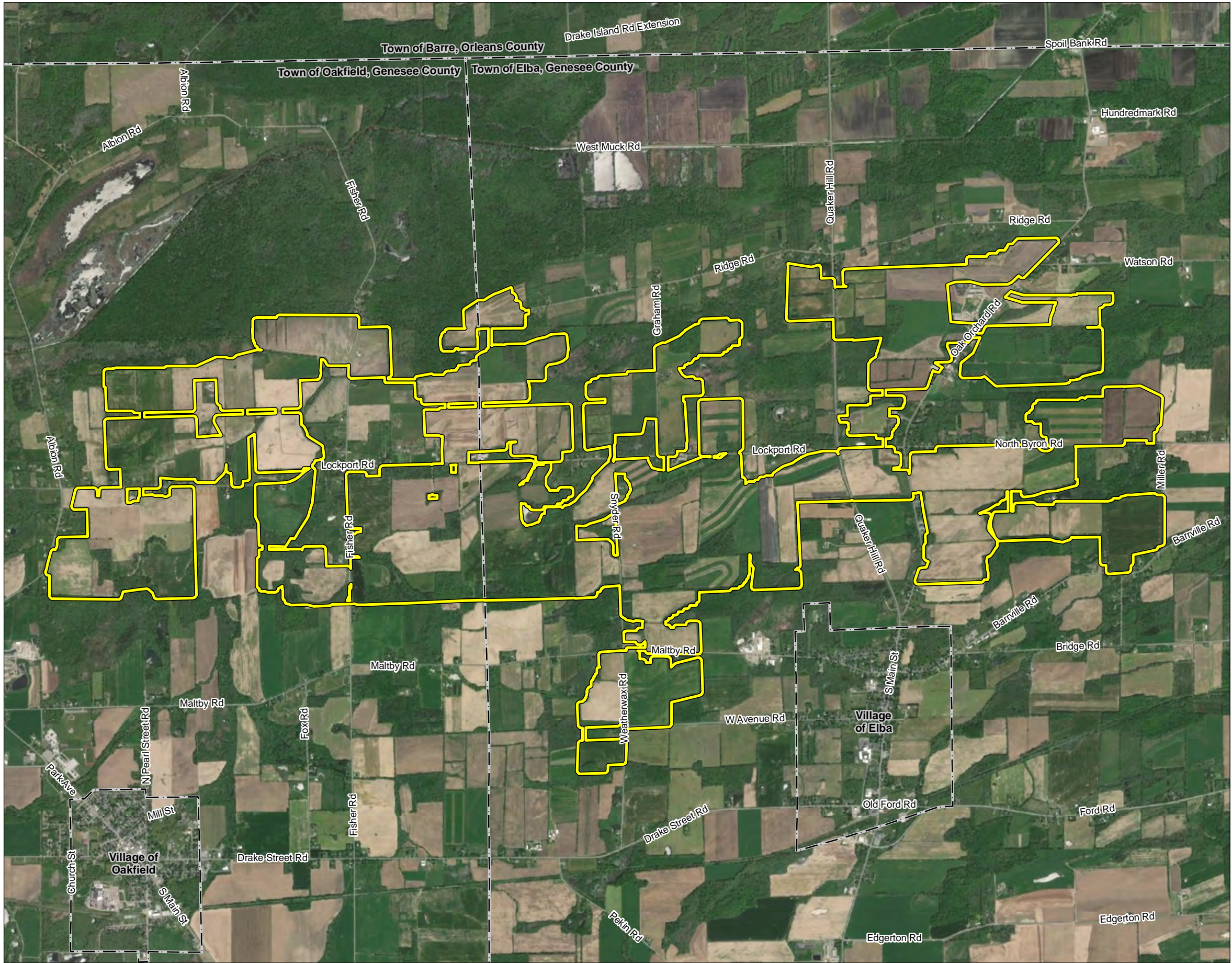
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm
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Figure No.
1

Title
Site Location Map
Map 1 of 1

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Legend

- Study Area
- Municipal Boundary



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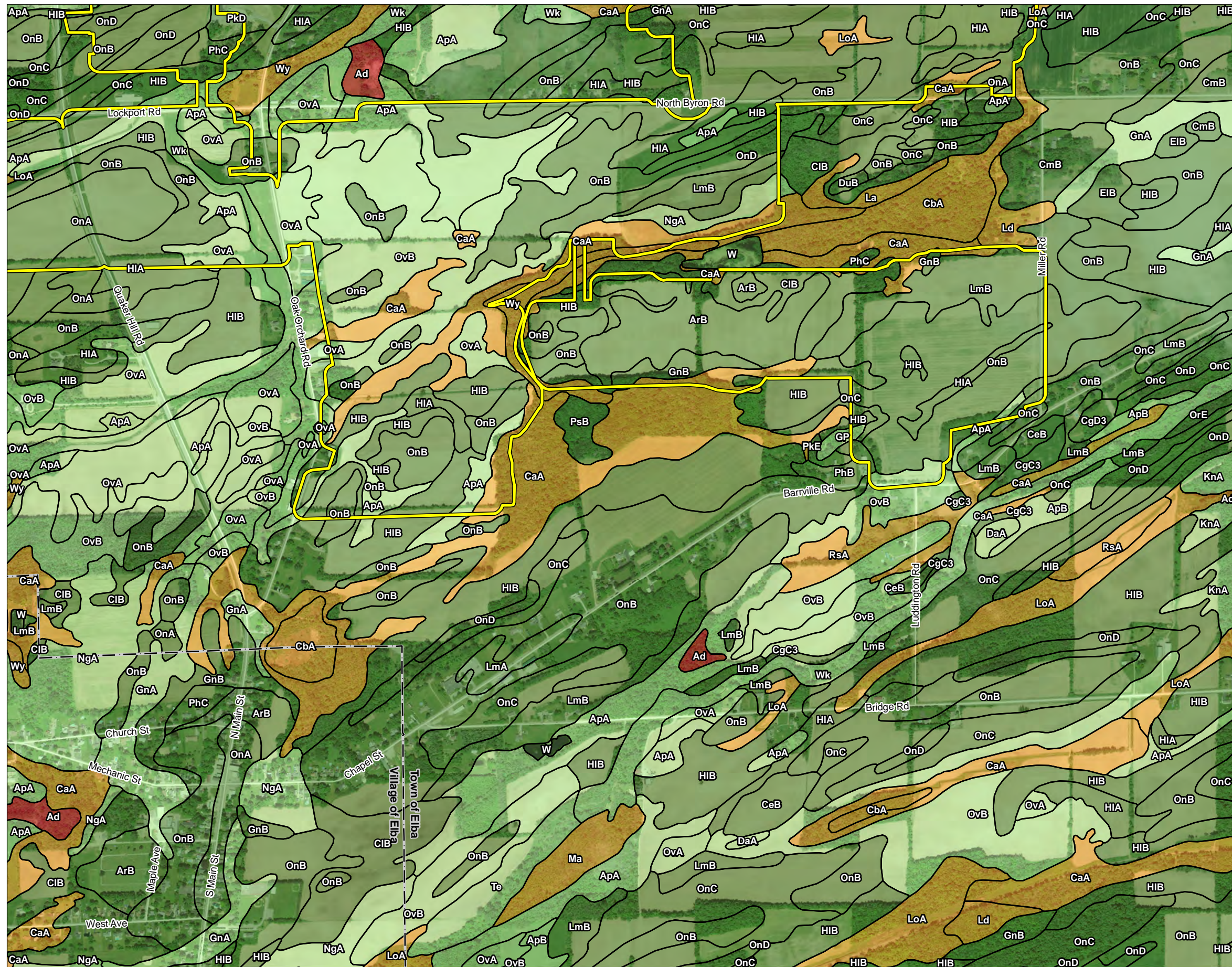


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Figure No.
2

Title
Study Area Map
Map 1 of 1



Legend

 Municipal Boundary

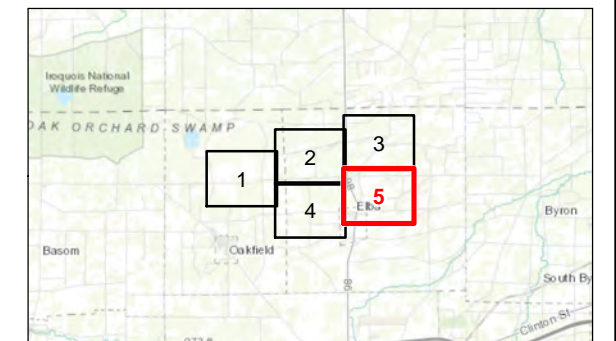
 Not Hydric (0%)

 Hydric (33 - 65%)

 Hydric (100%)



Notes



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Figure No.

Title
NRCS Soils Map
Map 5 of 5

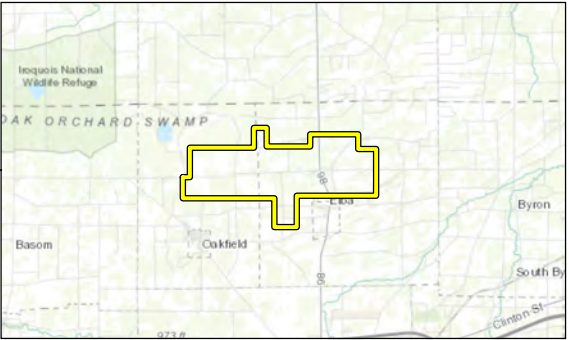
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Soil Types within Study Area

Symbol	Soil Name	Symbol	Soil Name
Ad	Alden mucky silt loam	LmB	Lima silt loam, 3-8% slopes
ApA	Appleton silt loam, 0-3% slopes	LoA	Lyons soils, 0-3% slopes
ArB	Arkport very fine sandy loam, 1-6% slopes	Ma	Madalin silty clay loam, 0-3% slopes
ArC	Arkport very fine sandy loam, 6-12% slopes	MnA	Minoa very fine sandy loam, 0-2% slopes
Br	Bergen muck	NgA	Niagara silt loam, 0-2% slopes
CaA	Canandaigua silt loam, 0-2% slopes	OdA	Odessa silt loam, 0-3% slopes
CbA	Canandaigua mucky silt loam, 0-2% slopes	OdB	Odessa silt loam, 3-8% slopes
CeB	Cazenovia silt loam, 3-8% slopes	OnA	Ontario loam, 0-3% slopes
CeC	Cazenovia silt loam, 8-15% slopes	OnB	Ontario loam, 3-8% slopes
CgC3	Cazenovia silty clay loam, 8-15% slopes, eroded	OnC	Ontario loam, 8-15% slopes
CgD3	Cazenovia silty clay loam, 15-25% slopes, eroded	OnD	Ontario loam, 15-25% slopes
ClB	Collamer silt loam, 2-6% slopes	OvA	Ovid silt loam, 0-3% slopes
DuB	Dunkirk silt loam, 2-6% slopes	OvB	Ovid silt loam, 3-8% slopes
Fo	Fonda mucky silt loam	Pd	Palms muck
FpA	Fredon gravelly loam, 0-3% slopes	PhB	Palmyra gravelly loam, 3-8% slopes
GnA	Galen very fine sandy loam, 0-2% slopes	PhC	Palmyra gravelly loam, 8-15% slopes
GnB	Galen very fine sandy loam, 2-6% slopes	PkD	Palmyra and Arkport soils, 15-25% slopes
GP	Gravel pits	PsA	Phelps gravelly loam, 0-3% slopes
HaA	Halsey silt loam, 0-4% slopes	PsB	Phelps gravelly loam, 3-8% slopes
Hf	Hamlin silt loam	RoA	Rhinebeck silt loam, 0-3% slopes
HiA	Hilton loam, 0-3% slopes	RsA	Romulus silt loam, 0-3% slopes
HiB	Hilton loam, 3-8% slopes	Te	Teel silt loam
La	Lakemont silty clay loam, 0-3% slopes	W	Water
Ld	Lamson very fine sandy loam	Wk	Wakeville silt loam
Le	Lamson mucky very fine sandy loam	Wr	Warners mucky loam
LmA	Lima silt loam, 0-3% slopes	Wy	Wayland soils complex, 0-3% slopes, frequently flooded



Notes
1. 1. Data Sources: USDA NRCS Gridded Soil Survey Geographic (gSSURGO) Database for NYS, 2020



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Figure No.
3

Title
NRCS Soils Key
Page 1 of 1

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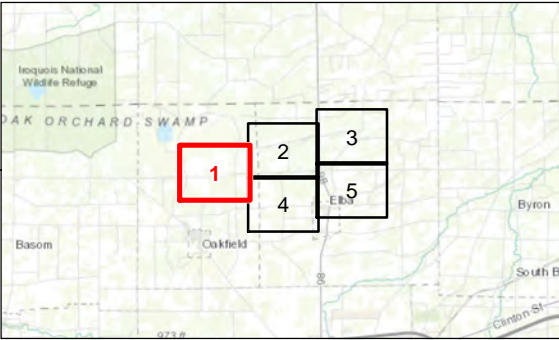
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- Study Area
- Municipal Boundary
- Mapped Wetlands & Streams**
- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area
- NWI Wetland



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- Notes**
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
 2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYSDEC RFW for Genesee County, 1999; NYSDEC Water Quality Classifications, 2010; USFWS NWI Wetlands, 2019
 3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Elba and Oakfield
Genesee County, NY

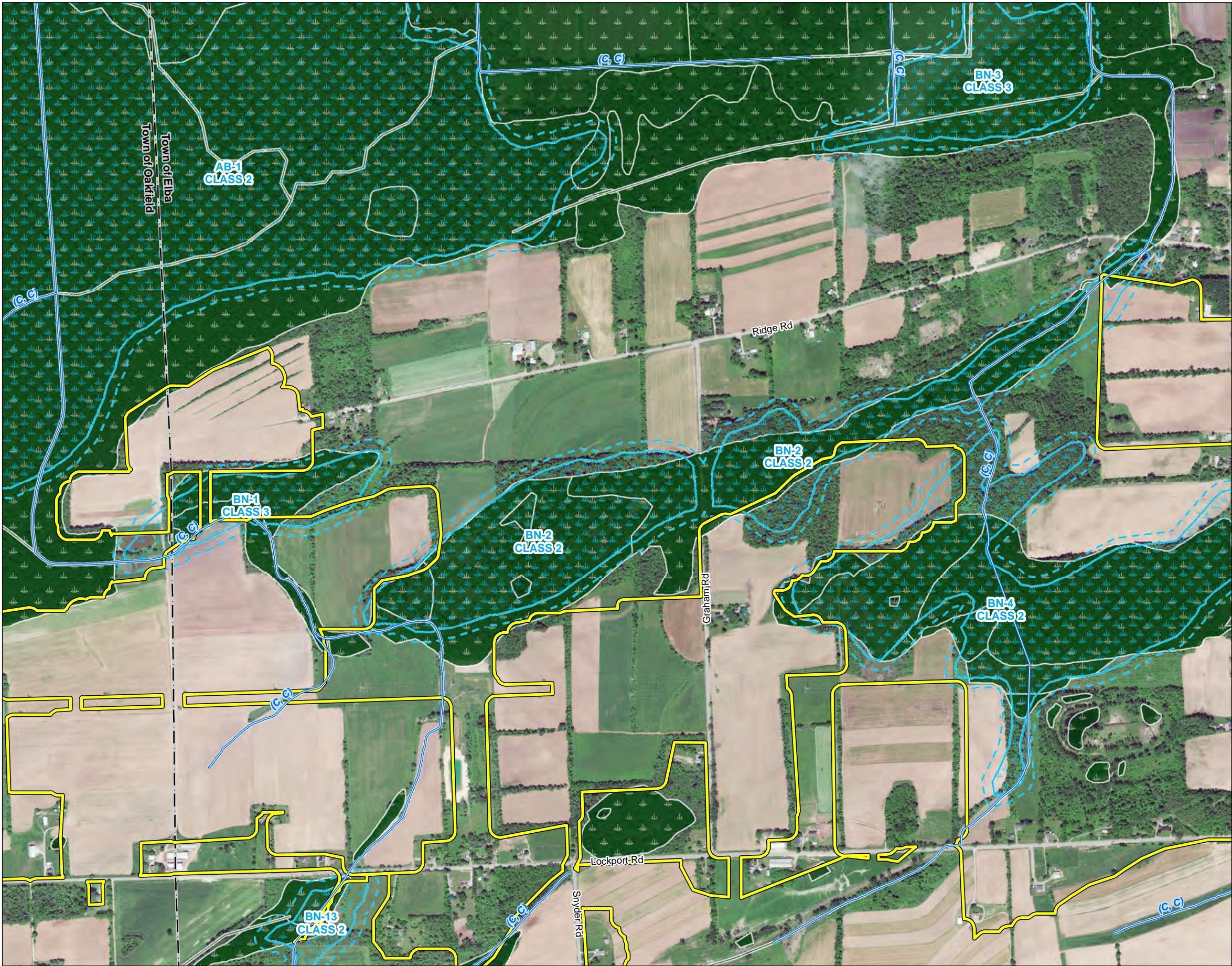
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Figure No.
4

Title
Mapped Wetlands & Streams
Map 1 of 5



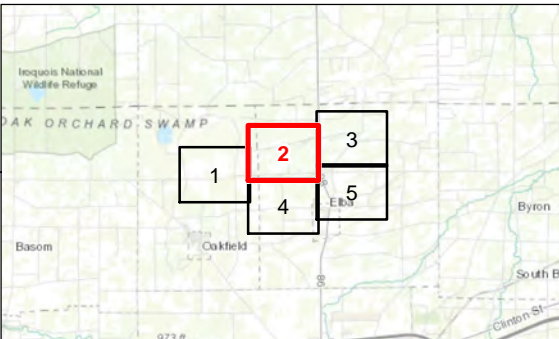
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- Mapped Wetlands & Streams
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

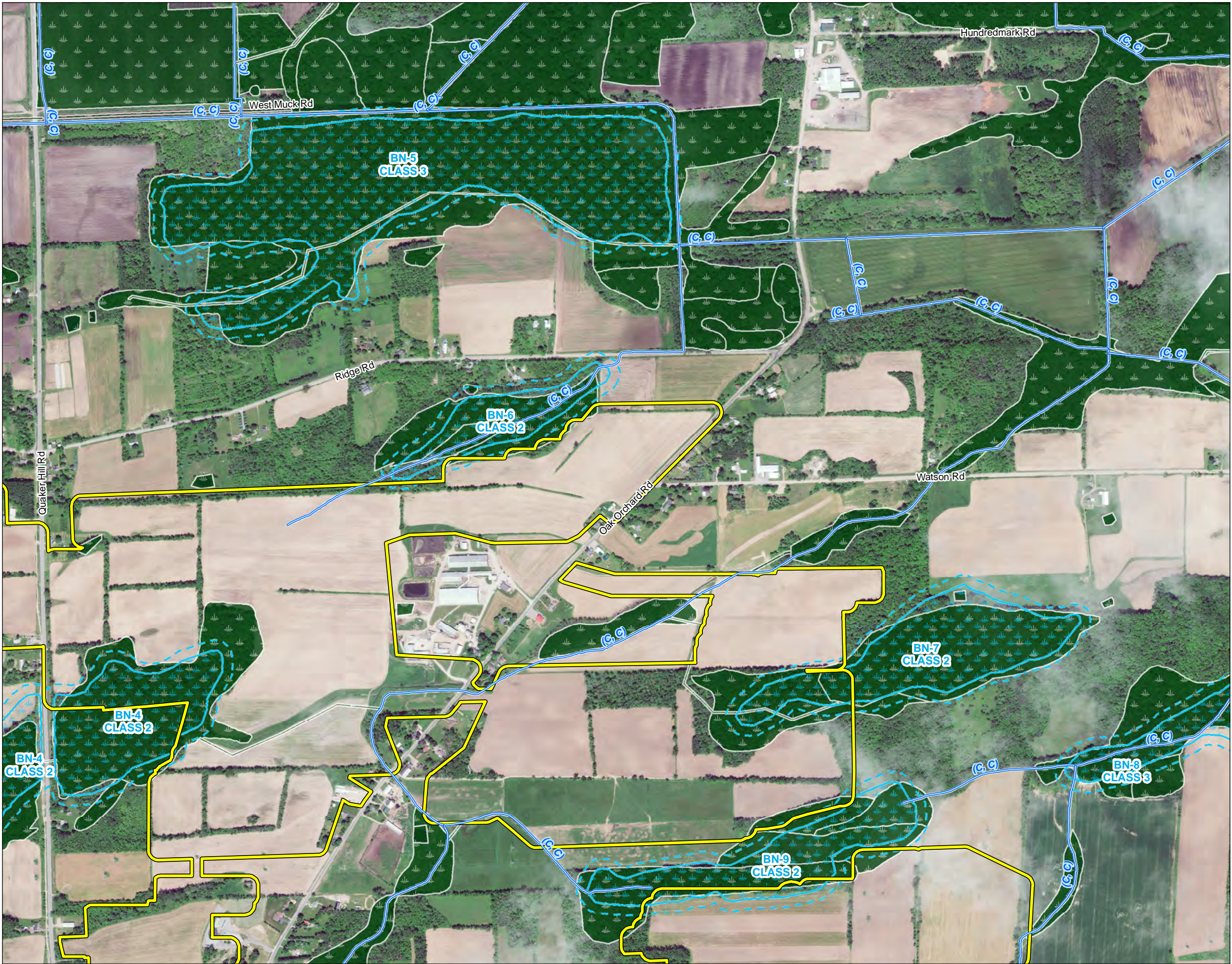
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Figure No.
4

Title
Mapped Wetlands & Streams
Map 2 of 5



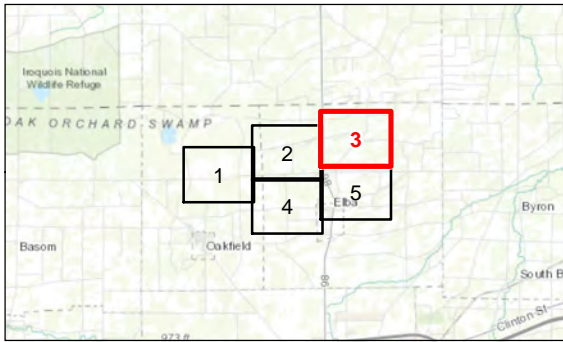
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 - NYSDEC Stream (Class, Standard)
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 - NYSDEC 100ft Adjacent Area
 - NWI Wetland



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Project Location: Towns of Elba and Oakfield, Genesee County, NY

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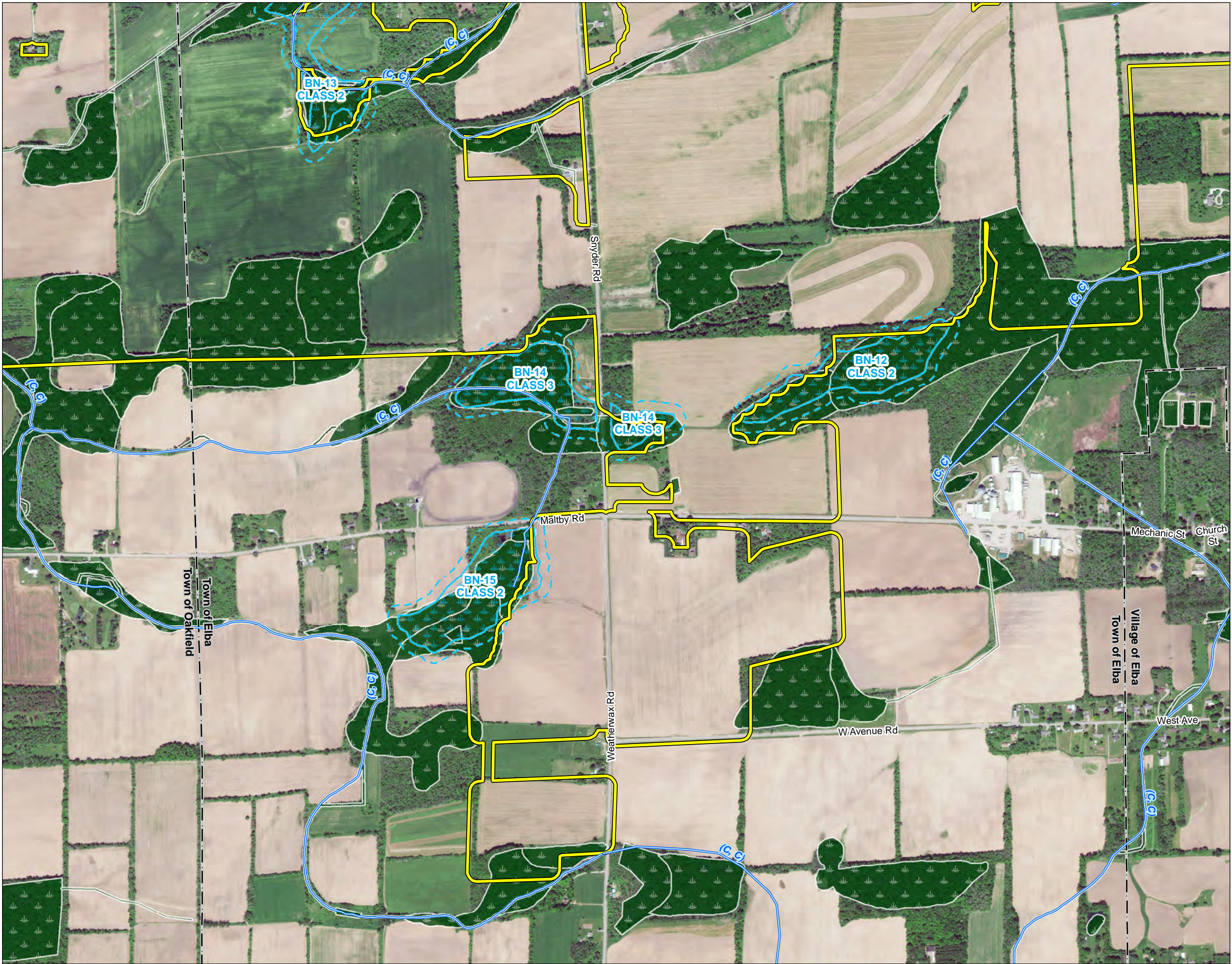
Client/Project: Hecate Energy Cider Solar LLC, Cider Solar Farm

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Figure No.: 4

Title: Mapped Wetlands & Streams
Map 3 of 5

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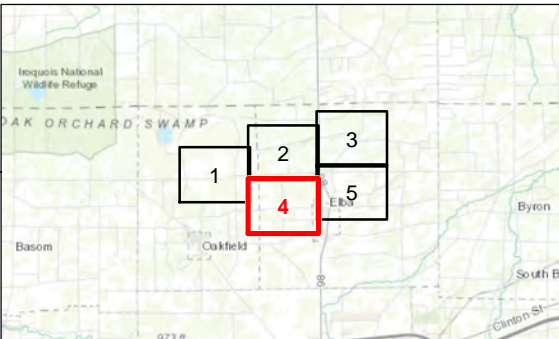
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- NWI Wetland



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Project Location
Towns of Elba and Oakfield
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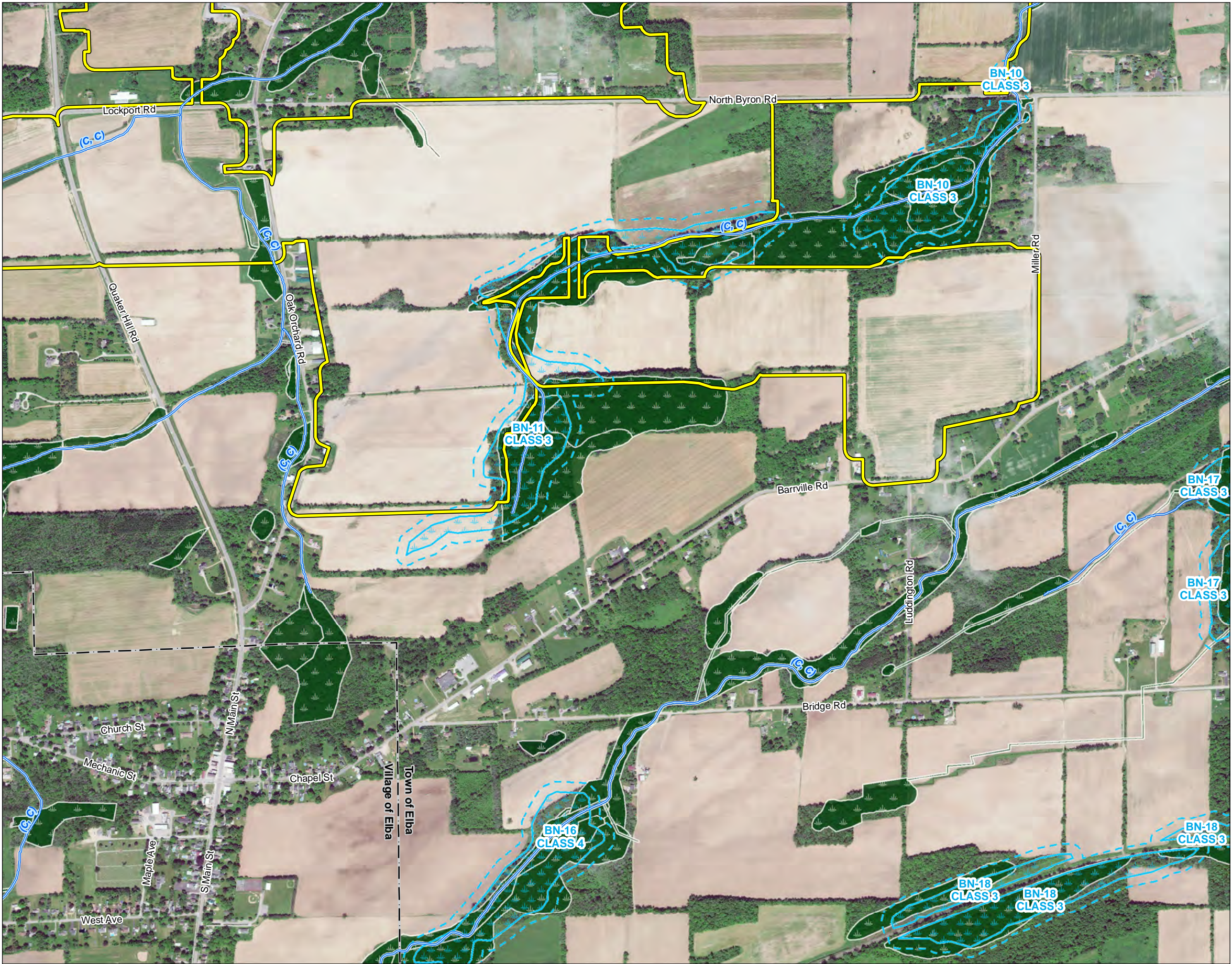
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Figure No.
4

Title
Mapped Wetlands & Streams
Map 4 of 5



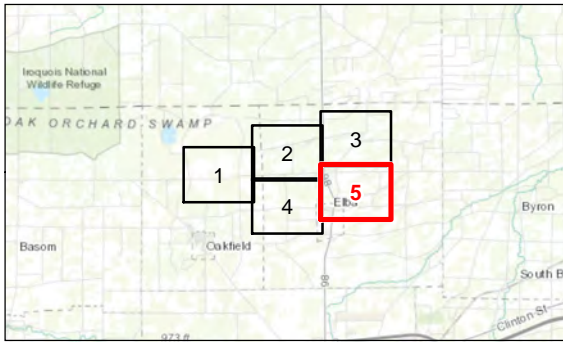
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- Mapped Wetlands & Streams
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 - NYSDEC Freshwater Wetland
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 - Background: WorldView-3 satellite imagery purchased on June 6, 2020



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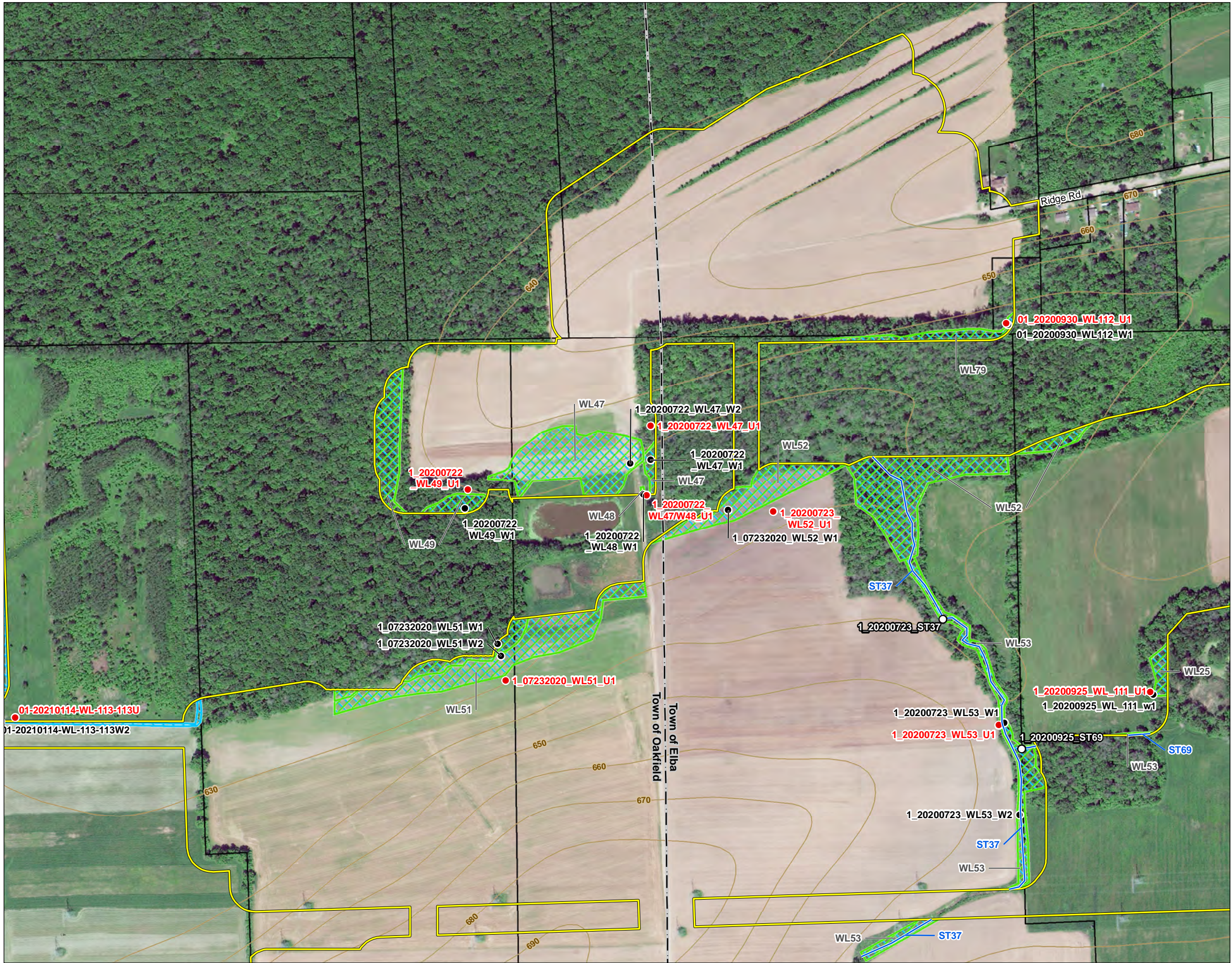
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Title
Mapped Wetlands & Streams
Map 5 of 5

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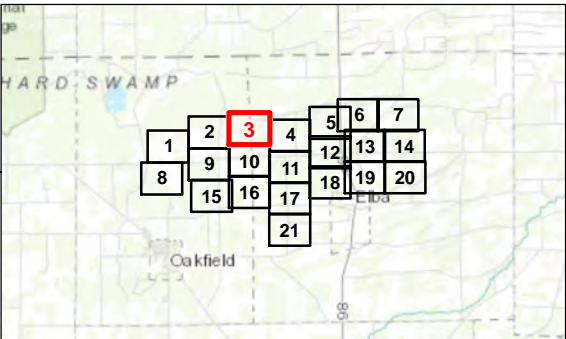
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- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- ▭ Parcel Boundary
- ▭ Municipal Boundary



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3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



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Towns of Elba and Oakfield
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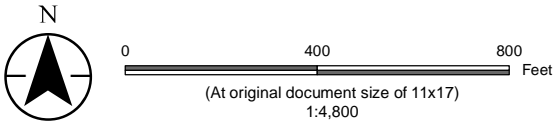
Client/Project
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Figure No.
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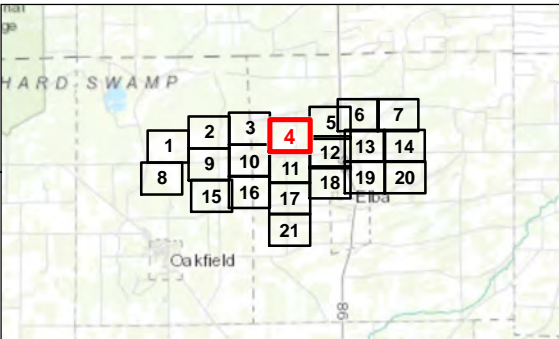
Title
Delineated Wetlands & Streams
Map 3 of 21



- Legend
- Stream Data Point
 - Upland Data Point
 - Wetland Data Point
 - Delineated Stream - Linear
 - Delineated Stream - Area
 - ▨ Delineated Wetland - State Jurisdiction
 - ▨ Delineated Wetland - Federal Jurisdiction
 - Study Area
 - ⊠ Culvert
 - 760— Elevation Contour (FAMSL)
 - ▭ Parcel Boundary
 - ▭ Municipal Boundary



Notes
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2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



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Figure No.
5

Title
**Delineated Wetlands & Streams
Map 4 of 21**

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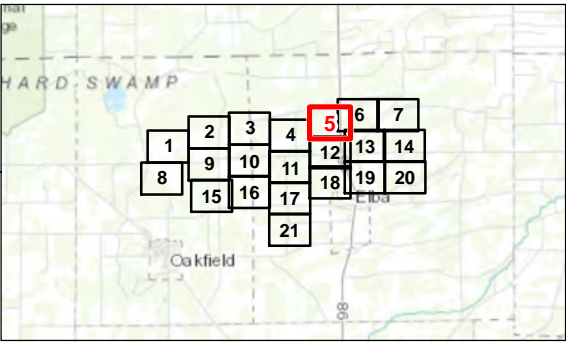
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- Wetland Data Point
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- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- ▭ Parcel Boundary
- ▭ Municipal Boundary



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(At original document size of 11x17)
1:4,800

Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Elba and Oakfield
Genesee County, NY

Prepared by AS on 2021-04-07
TR by EE on 2021-04-XX
IR by AS on 2021-04-07

Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REV B













Figure No.
5

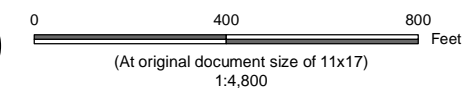
Title
**Delineated Wetlands & Streams
Map 5 of 21**

U:\190502038\03_data\gis\mxd\WetlandReport\190502038_Delineation.mxd Revised: 2021-04-07 By: astapleton



Legend

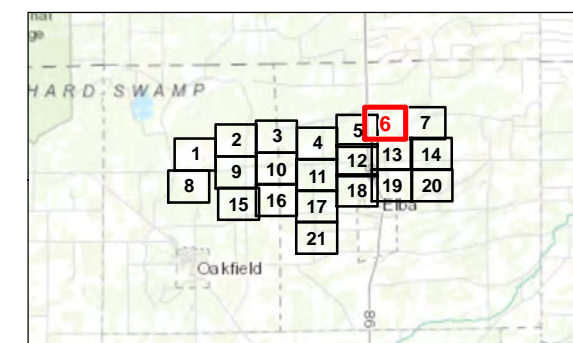
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-  Upland Data Point
-  Wetland Data Point
-  Delineated Stream - Linear
-  Delineated Stream - Area
-  Delineated Wetland - State Jurisdiction
-  Delineated Wetland - Federal Jurisdiction
-  Study Area
-  Culvert
-  Elevation Contour (FAMSL)
-  Parcel Boundary
-  Municipal Boundary



Notes

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Elba and Oakfield
Genesee County, NY

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Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

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Figure No.
5

Title
**Delineated Wetlands & Streams
Map 6 of 21**



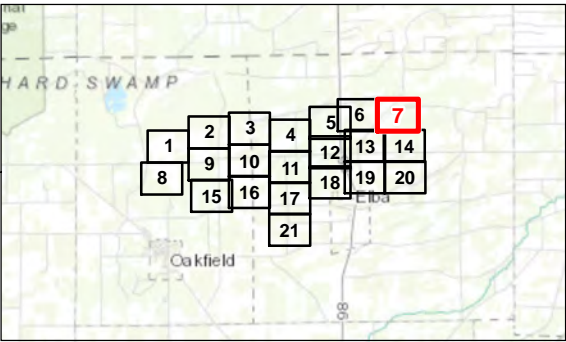
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
- Municipal Boundary



0 400 800 Feet
(At original document size of 11x17)
1:4,800

Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Elba and Oakfield
Genesee County, NY

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Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REV B

Figure No.

5

Title
Delineated Wetlands & Streams
Map 7 of 21

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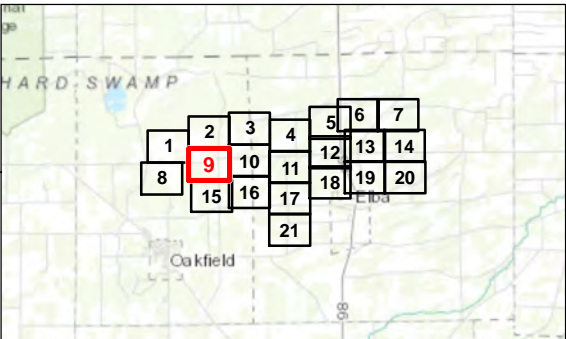
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
- Municipal Boundary



0 400 800 Feet
(At original document size of 11x17)
1:4,800

Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

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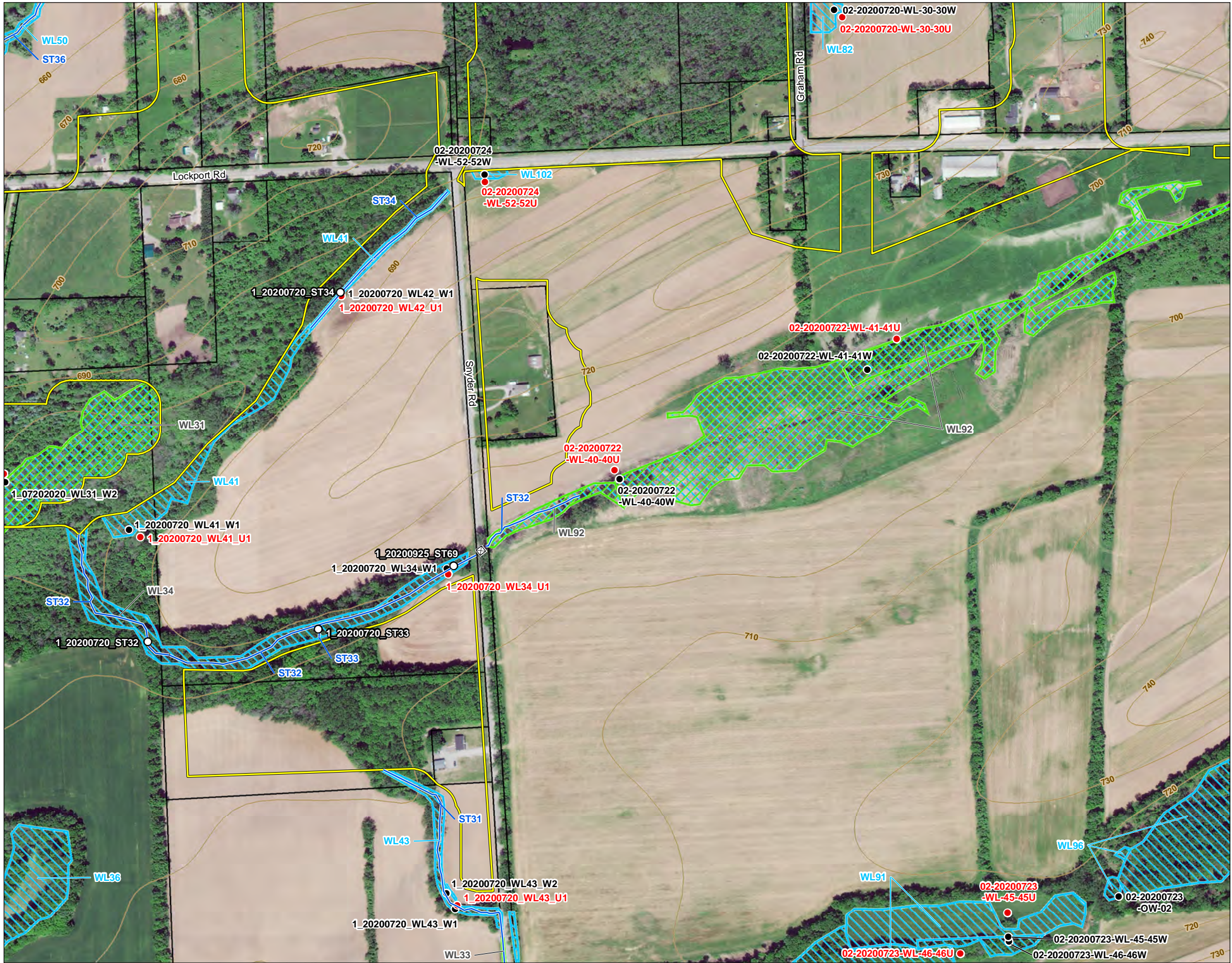
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

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Figure No.
5

Title
**Delineated Wetlands & Streams
Map 9 of 21**

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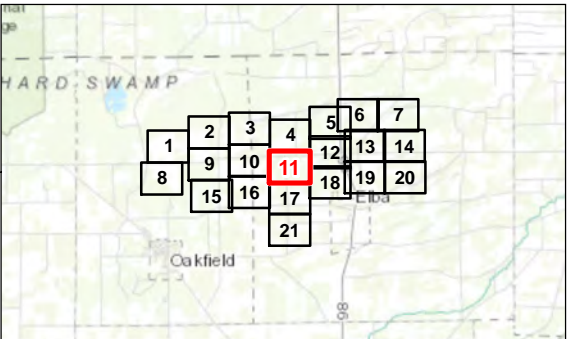
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
- Municipal Boundary



0 400 800 Feet
(At original document size of 11x17)
1:4,800

Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

Prepared by AS on 2021-04-07
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Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

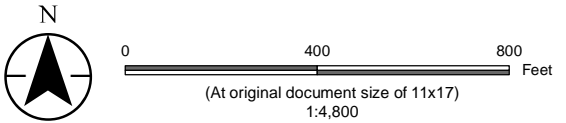
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Figure No.
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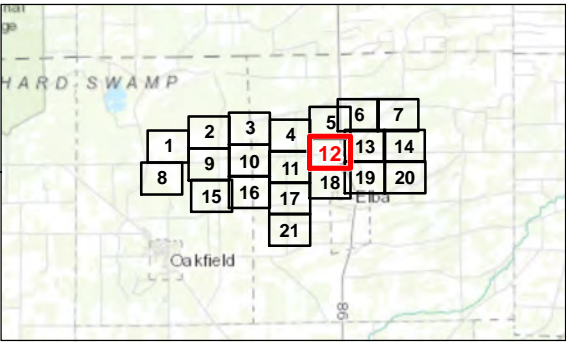
Title
**Delineated Wetlands & Streams
Map 11 of 21**



- Legend
- Stream Data Point
 - Upland Data Point
 - Wetland Data Point
 - Delineated Stream - Linear
 - Delineated Stream - Area
 - ▨ Delineated Wetland - State Jurisdiction
 - ▨ Delineated Wetland - Federal Jurisdiction
 - Study Area
 - ⊠ Culvert
 - 760— Elevation Contour (FAMSL)
 - ▭ Parcel Boundary
 - ▭ Municipal Boundary



Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
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Project Location
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Hecate Energy Cider Solar LLC
Cider Solar Farm

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Figure No.
5

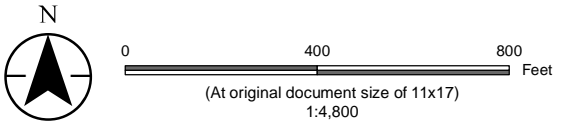
Title
Delineated Wetlands & Streams
Map 12 of 21

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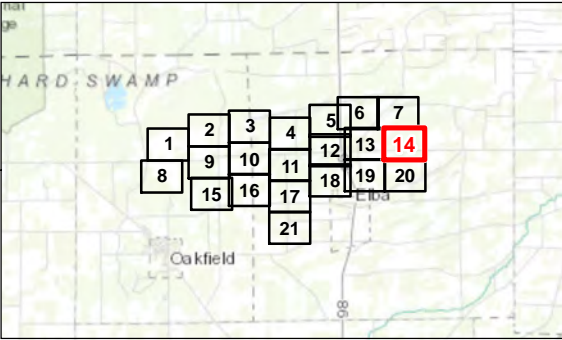
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- Legend
- Stream Data Point
 - Upland Data Point
 - Wetland Data Point
 - Delineated Stream - Linear
 - Delineated Stream - Area
 - ▨ Delineated Wetland - State Jurisdiction
 - ▨ Delineated Wetland - Federal Jurisdiction
 - Study Area
 - ⊠ Culvert
 - 760— Elevation Contour (FAMSL)
 - Parcel Boundary
 - Municipal Boundary



Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

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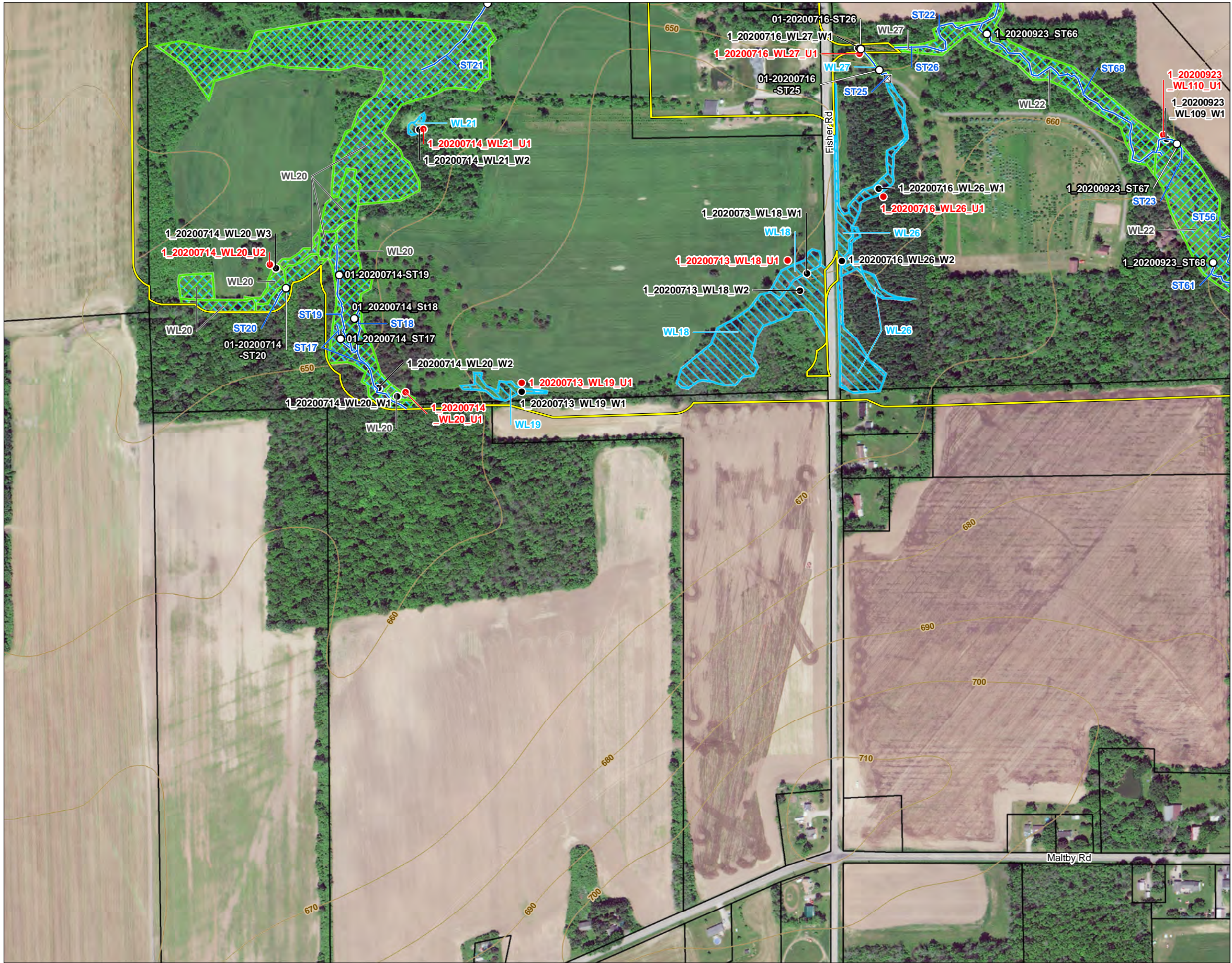
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

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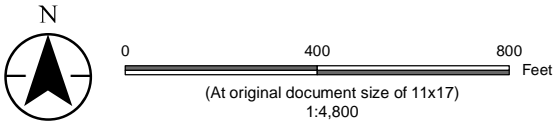
Figure No.
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Title
**Delineated Wetlands & Streams
Map 14 of 21**

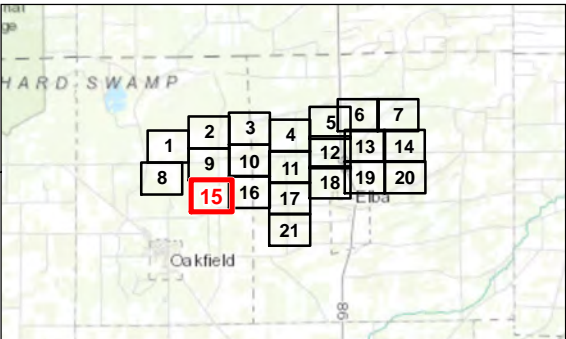
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- Legend
- Stream Data Point
 - Upland Data Point
 - Wetland Data Point
 - Delineated Stream - Linear
 - Delineated Stream - Area
 - ▨ Delineated Wetland - State Jurisdiction
 - ▨ Delineated Wetland - Federal Jurisdiction
 - Study Area
 - ⊠ Culvert
 - 760— Elevation Contour (FAMSL)
 - Parcel Boundary
 - Municipal Boundary



Notes
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

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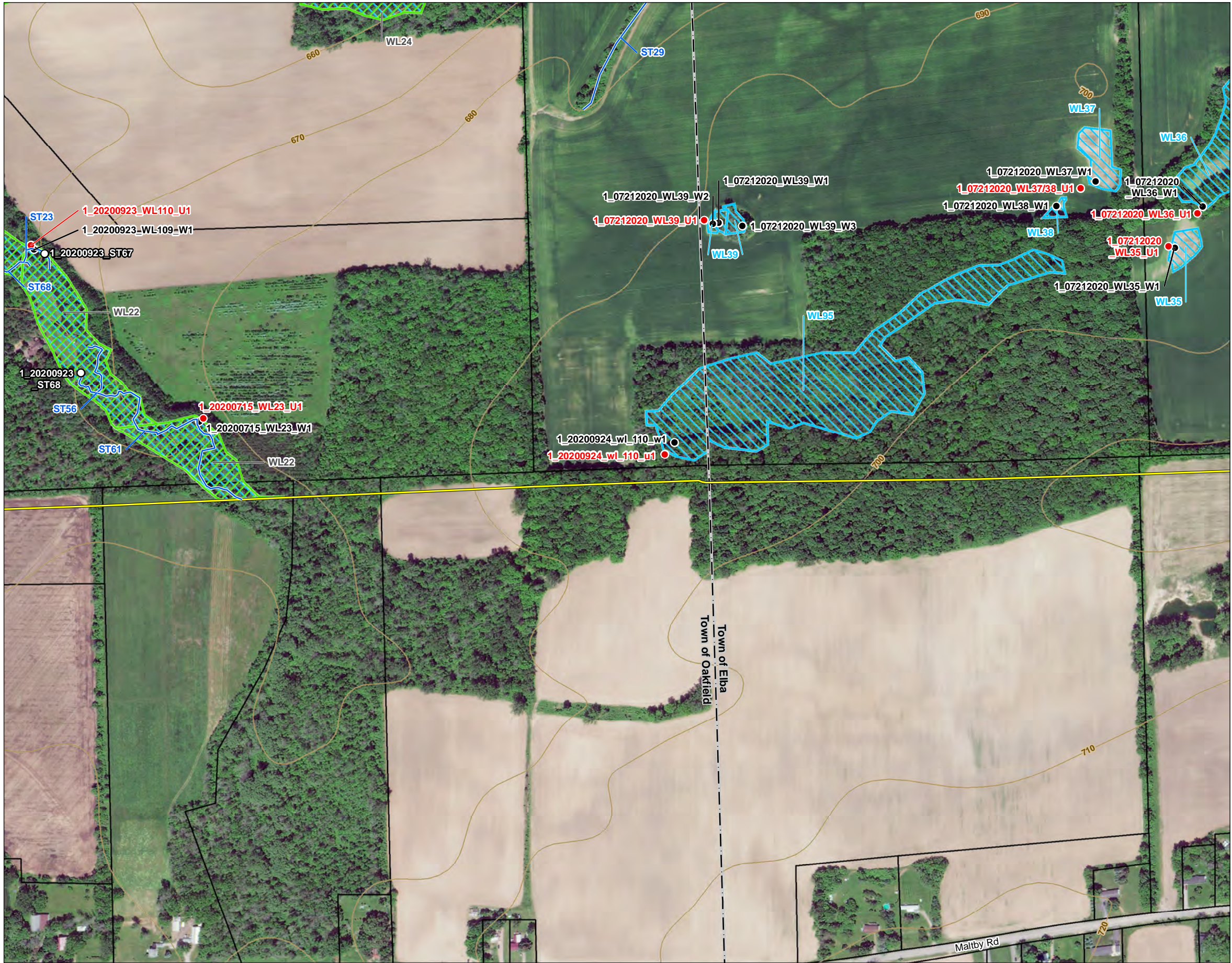
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

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Figure No.
5

Title
Delineated Wetlands & Streams
Map 15 of 21

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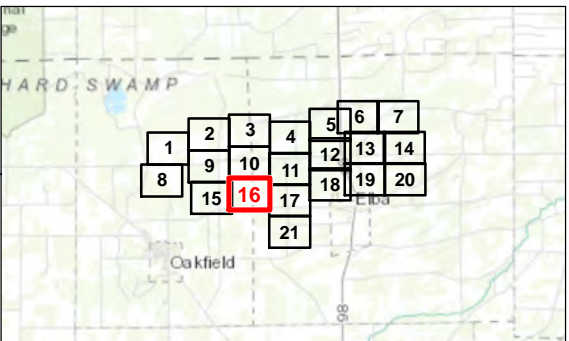
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- ▭ Parcel Boundary
- ▭ Municipal Boundary



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(At original document size of 11x17)
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Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Elba and Oakfield
Genesee County, NY

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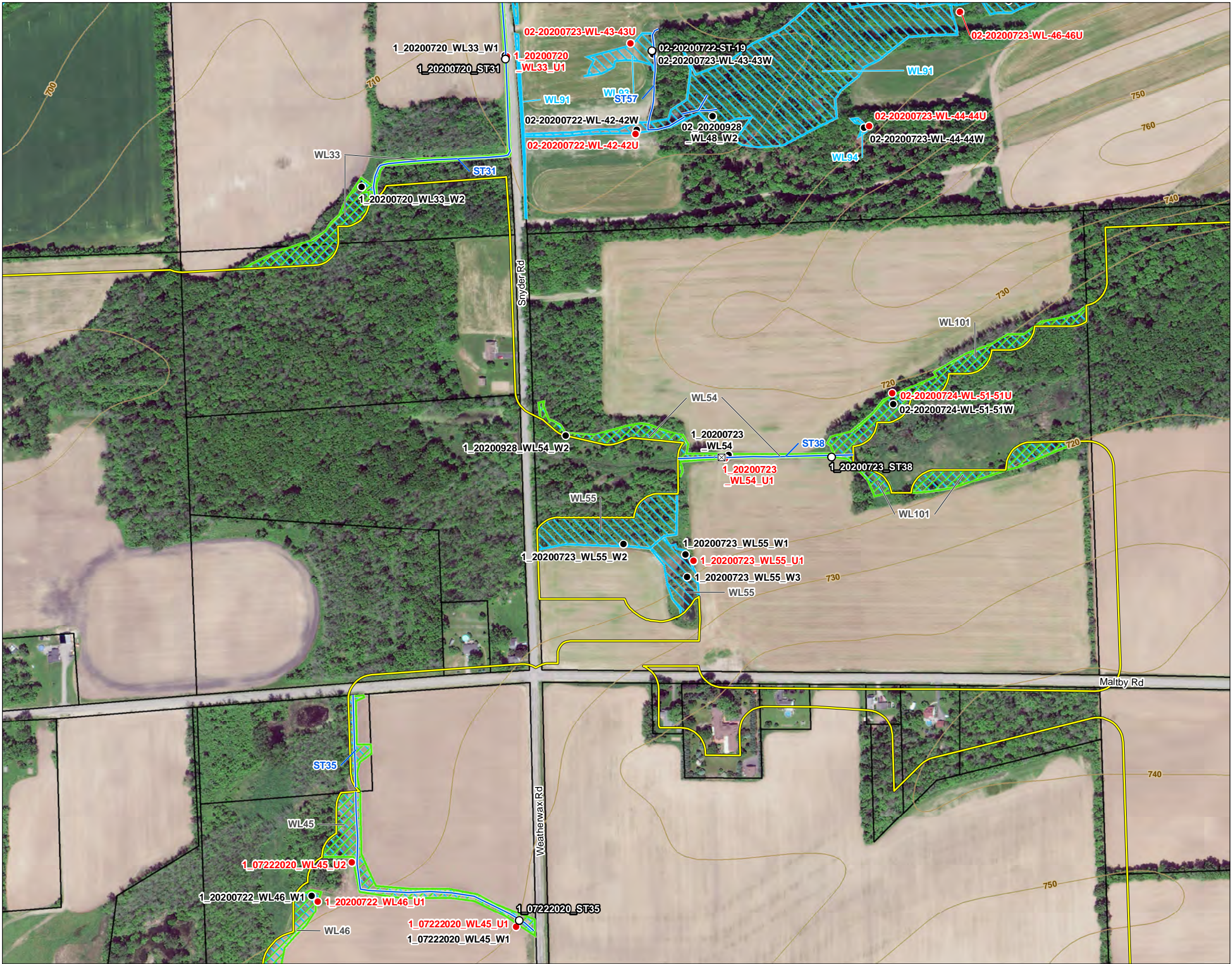
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

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Figure No.
5

Title
**Delineated Wetlands & Streams
Map 16 of 21**

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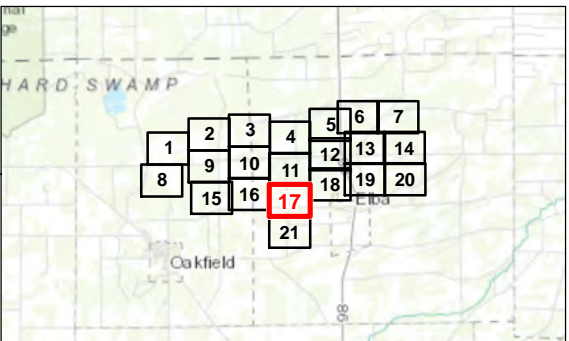
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
- Municipal Boundary



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(At original document size of 11x17)
1:4,800

Notes
1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS OITS GIS Program Office (GPO) Civil Boundaries, 2018; NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS), 2019; USGS NED Contours For Toronto E, NY, 2019
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

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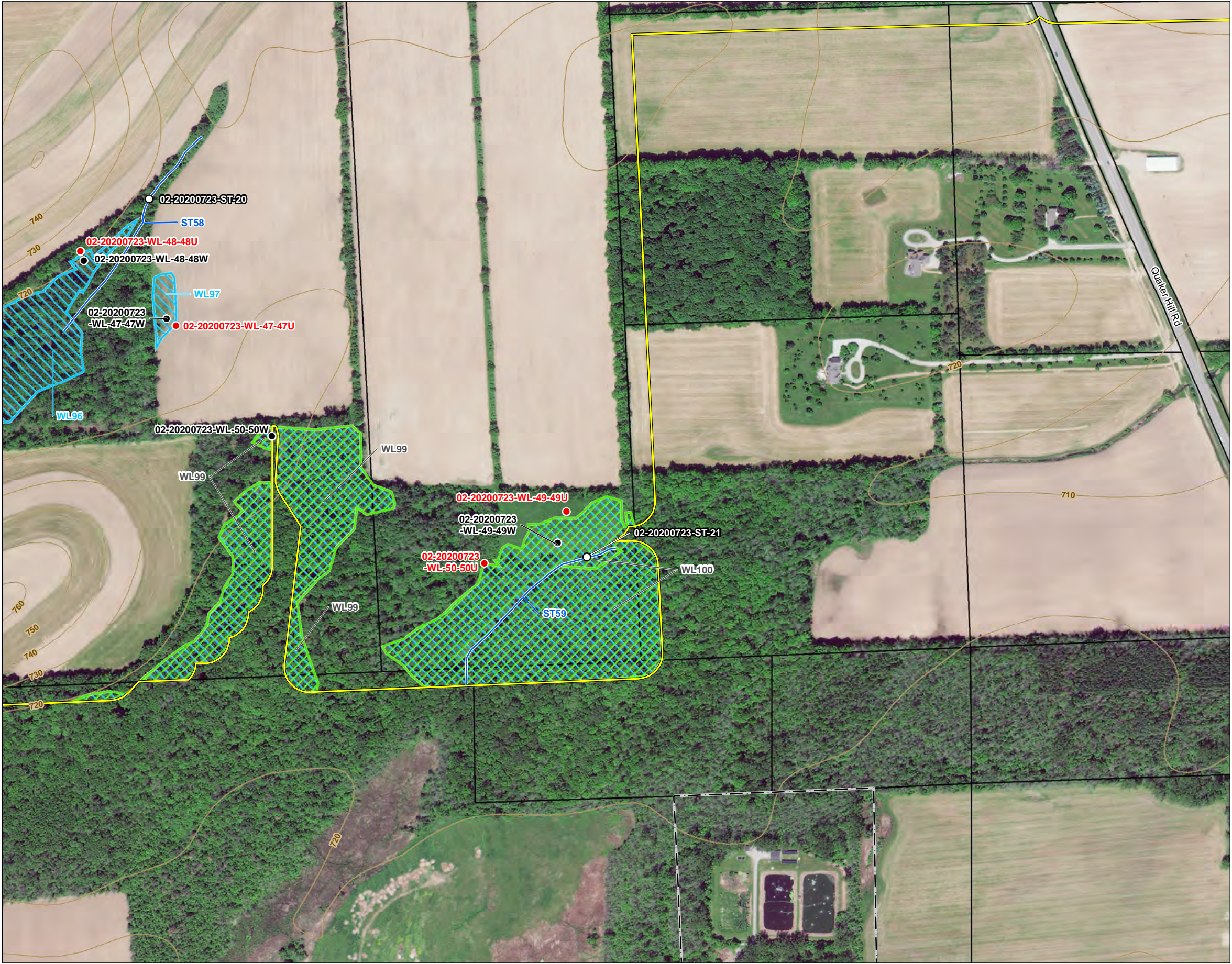
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REV B

Figure No.
5

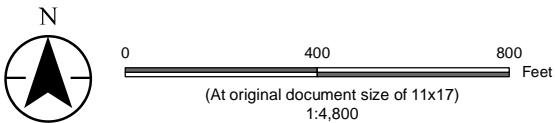
Title
Delineated Wetlands & Streams
Map 17 of 21

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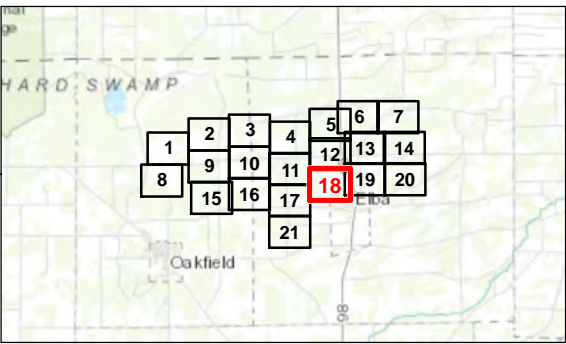


Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- ▭ Parcel Boundary
- ▭ Municipal Boundary



Notes
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3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location: Towns of Elba and Oakfield, Genesee County, NY
Prepared by AS on 2021-04-07
TR by EE on 2021-04-XX
IR by AS on 2021-04-07

Client/Project: Hecate Energy Cider Solar LLC, Cider Solar Farm
190502038 REV B

Figure No.: 5

Title: Delineated Wetlands & Streams
Map 18 of 21

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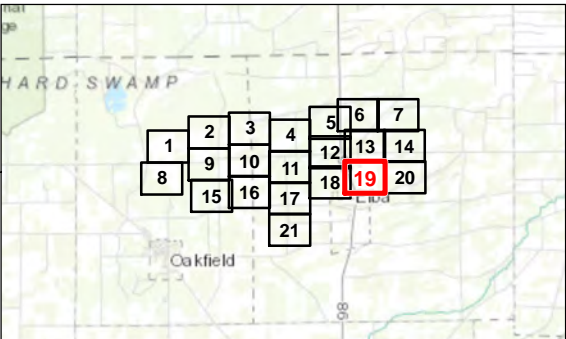
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
- Municipal Boundary



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Notes
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Project Location
Towns of Elba and Oakfield
Genesee County, NY

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Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REV B

Figure No.
5

Title
**Delineated Wetlands & Streams
Map 19 of 21**

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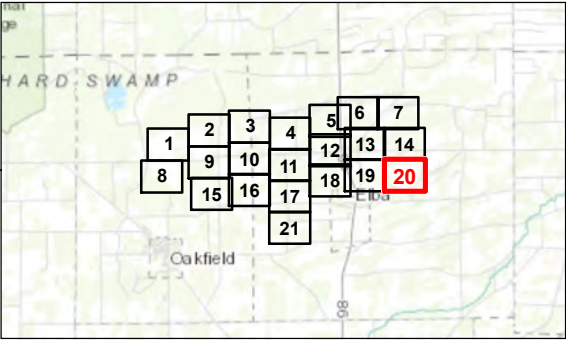
Legend

- Stream Data Point
- Upland Data Point
- Wetland Data Point
- Delineated Stream - Linear
- Delineated Stream - Area
- ▨ Delineated Wetland - State Jurisdiction
- ▨ Delineated Wetland - Federal Jurisdiction
- Study Area
- ⊠ Culvert
- 760— Elevation Contour (FAMSL)
- Parcel Boundary
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0 400 800 Feet
(At original document size of 11x17)
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Notes
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Project Location
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Cider Solar Farm

190502038 REV B

Figure No.

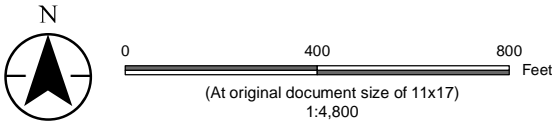
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Title
Delineated Wetlands & Streams
Map 20 of 21

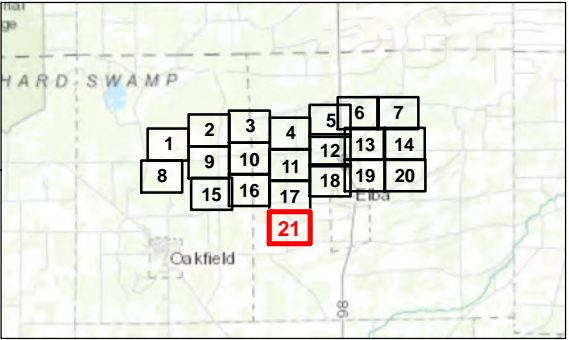
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- Legend
- Stream Data Point
 - Upland Data Point
 - Wetland Data Point
 - Delineated Stream - Linear
 - Delineated Stream - Area
 - ▨ Delineated Wetland - State Jurisdiction
 - ▨ Delineated Wetland - Federal Jurisdiction
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 - ⊠ Culvert
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Notes
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Project Location
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Cider Solar Farm

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Figure No.
5

Title
**Delineated Wetlands & Streams
Map 21 of 21**