Wildlife Site Characterization Report

Orleans Solar

Towns of Barre and Shelby
Orleans County, New York

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1.0 INTRODUCTION

Orleans Solar, LLC (the Applicant) is proposing to construct a solar energy generation facility and associated infrastructure (the Facility) on approximately 2,670 acres (the Facility Site) in the Towns of Barre and Shelby in Orleans County, New York (see Figure 1). The Facility Site consists primarily of active agricultural land and is roughly bounded by County Route 28 to the west, Pask Road to the north, County Route 22 to the south and Pine Hill Road to the east (see Figure 2). The Facility will consist of arrays of photovoltaic (PV) panels and associated support structures, with a total generating capacity of up to 200 megawatts (MW). Other proposed Facility components include access roads, collection lines, and a point of interconnect (POI) substation. Note that not all lands associated with the Facility Site will be developed for siting components of the Project.

The New York State Office of Renewable Energy Siting (ORES) issues permits for major renewable energy facilities (i.e., projects larger than 25 MW) under Section 94-c of the New York State Executive Law. Chapter XVIII Title 19 of NYCRR Part 900 establishes the procedural and substantive requirements for the permit applications under Section 94-c, including submittal of a Wildlife Site Characterization Report. The purpose of the Wildlife Site Characterization is to summarize existing public information on bird, bat, and other animal species that may potentially occur in the vicinity of a proposed facility, and to provide additional analysis with respect to those species formally listed by New York State as threatened, endangered, or species of special concern.

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained by the Applicant to prepare a Wildlife Site Characterization Report for the Orleans Solar facility. This report is organized to follow the structure of the regulations set forth in §900-1.3(g)(1), with the relevant requirement provided at the start of each section. In addition, this report will discuss the results of site-specific avian surveys conducted by EDR in 2020 and 2021.

2.0 PUBLICLY AVAILABLE DATA SOURCES

This section provides information in response to the following requirement of §900-1.3(g)(1):

At the earliest point possible in the applicant's preliminary project planning, the applicant shall conduct a wildlife site characterization summarizing existing public information on bird, bat, and other species, including, but not limited to, New York's Environmental Assessment Form (EAF) Mapper, New York Natural Heritage Program (NYNHP), United States Fish and Wildlife Service (USFWS) IPaC and ECOs databases, New York's Environmental Resource Mapper, Nature Explorer, and Biodiversity and Wind Siting Mapping Tool, eBird, Audubon Christmas Bird Counts, United States Geological Survey (USGS) breeding bird surveys, the current New York Breeding Bird Atlas III program, New York State Ornithological Association, local birding organizations, Bat Conservation International's database on bat species ranges, New York State Department of Environmental Conservation (NYSDEC) bat information.

2.1 NEW YORK'S EAF MAPPER

The EAF Mapper is a tool developed by the New York State Department of Environmental Conservation (NYSDEC) that takes a user-defined project site and searches multiple Geographic Information System (GIS) data sets. The results generated by the EAF Mapper appear in Part 1 of an electronically fillable form with certain location-based

questions automatically filled out and is accompanied by a report that includes answers to specific questions on the EAF and a map showing the project site.

The EAF Mapper tool was queried using an approximate boundary of the roads bounding the Facility Site (i.e., County Route 28 to the west, Pask Road to the north, County Route 22 to the south and Pine Hill Road to the east). The responses to EAF questions E.2.n, E.2.o, and E.2.p indicate, respectively, that there are recorded observations of northern harrier (*Circus hudsonius*), least bittern (*Ixobrychus exilis*), pied-billed grebe (*Podilymbus podiceps*), bald eagle (*Haliaeetus leucocephalus*), upland sandpiper (*Bartamia longicauda*), and short-eared owl (*Asio flammeeus*) in the vicinity of the Facility Site. Each of these species is state-listed as threatened, with the exception of short-eared owl which is state-listed as endangered. In addition, two significant natural communities exist near the Facility Site, including deep emergent marsh and hemlock-northern hardwood forest. No rare plant species were identified by the EAF Mapper tool (see Appendix A).

2.2 NEW YORK NATURAL HERITAGE PROGRAM

The NYNHP maintains data on state-listed rare, threatened, and endangered plant and animal species, as well as significant ecological communities. A site-specific request for documented occurrences in the vicinity of the Facility Site was initially submitted to the NYNHP on December 31, 2019 and a response received on January 7, 2020. Another request for NYNHP documented occurrences in the vicinity of the Facility was submitted on January 15, 2021, though a response has not yet been received. The January 2020 response letter indicates that the NYNHP databases contain records of northern harrier, short-eared owl, and upland sandpiper being documented at the Facility Site. A high-quality occurrence of hemlock-northern hardwood forest was also documented at Oak Orchard Swamp, approximately 0.5 mile south of the Facility Site (see Appendix B). As stated in Section 4.1, only short-eared owl and northern harrier have been documented in the vicinity of the Facility in the last five years.

2.3 USFWS IPaC and ECOs DATABASES

The Environmental Conservation Online System (ECOs) is a gateway web site that provides access to U.S. Fish and Wildlife Service (USFWS) and other federal government databases, including the Information for Planning and Consultation (IPaC) tool, which streamlines the USFWS environmental review process. Users define a proposed project area and provide basic information about the project. IPaC then generates an official species list containing information to assist in evaluating the potential impacts of the project. The official species list is a formal letter from the local USFWS office that includes a list of species and critical habitat that should be considered under Section 7 of the Endangered Species Act, as well as other pertinent information from the local field office. A shapefile of the Facility Site was initially uploaded to IPaC on December 31, 2019 and updated on January 15, 2021. The official species list for the Orleans Solar Facility Site identified no federally listed threatened or endangered species or critical habitats in the proposed project location or that may be affected by the proposed Facility (see Appendix B).

2.4 NEW YORK'S ENVIRONMENTAL RESOURCE MAPPER

The Environmental Resource Mapper is an interactive mapping application developed by the NYSDEC that can be used to identify some of New York State's natural resources and environmental features that are state or federally protected, or of conservation concern. Specifically, the maps display the general areas where rare animals and rare plants have been documented by the NYNHP, and the locations where rare and significant natural communities have been documented. The Environmental Resource Mapper also displays locations of New York State regulated freshwater wetlands and protected streams, rivers, and lakes. These maps are provided as a source of information for landowners, land managers, citizens, local officials, and project sponsors engaged in land use decision making, conservation planning, or environmental assessment of proposed projects or actions (NYSDEC, 2021a).

The Environmental Resource Mapper does not support user-defined search areas or shapefiles, so to evaluate the Facility Site, the Towns of Barre and Shelby were queried and then zoomed in to best display the portion of the map containing the Facility Site (i.e., the area bound by County Route 28 to the west, Pask Road to the north, County Route 22 to the south and Pine Hill Road to the east). Several general locations for rare plant or animal occurrences are identified as occurring throughout the central and western portions of the Facility Site (see Appendix A). Additionally, a general location for a significant natural community is mapped southwest of the Facility Site. The boundaries of streams and New York State regulated freshwater wetlands are also illustrated within Facility Site (NYSDEC, 2021a). Additional discussion of mapped wetlands and streams is included in Section 4.5.1 of this report.

2.5 NEW YORK'S NATURE EXPLORER

New York Nature Explorer is an online tool developed by the NYSDEC to help inform land use decisions, natural resource management, biodiversity conservation, and environmental assessment. Users can define a specific search area (or query by county, town, or watershed) and obtain a list of the rare and listed animals, plants, and significant natural communities that have been found there, as documented in databases maintained by NYSDEC. However, because not all species are included in the list (i.e., location information for some sensitive species is excluded due to vulnerability to collection), the results of a New York Nature Explorer query should be considered only an initial indication of the potential presence of rare and/or listed animals and plants in the vicinity of the search area (NYSDEC, 2021b). Direct correspondence with the NYNHP, described above in Section 2.2, affords access to site-specific data for all rare and listed species, including those sensitive species not reported in New York Nature Explorer results.

The New York Nature Explorer tool was queried for the Facility, using an approximate boundary of the roads bounding the Facility Site. The results did not include records of any state-listed threatened, endangered, or special concern species. However, the New York Nature Explorer databases indicated that a significant natural community is located southwest of the Facility Site. The rare species locations provided in the map accompanying the results are

"generalized" or buffered to protect the actual locations, and no further information regarding this community was provided by the database. However, as noted above, the NYNHP identified a high-quality occurrence of hemlock-northern hardwood forest in the Oak Orchard Swamp, approximately 0.5 mile south of the Facility Site, which is likely the significant natural community identified by Nature Explorer. There were no records of sensitive plant species within the Facility Site (NYSDEC, 2021b). For the full report generated by the New York Nature Explorer tool, see Appendix A.

2.6 NEW YORK'S BIODIVERSITY AND WIND SITING MAPPING TOOL

The Biodiversity and Wind Siting Online Mapping Tool is intended to help New York meet its renewable energy goals while avoiding and minimizing impacts on sensitive biodiversity resources. This tool, developed by scientists from The Nature Conservancy, the NYNHP, and the Cornell Laboratory of Ornithology in collaboration with the New York State Energy Research and Development Authority, uses GIS technology to map important ecological resources, such as sensitive habitats, large forest blocks, and migration routes. Although specifically designed to help decision-makers balance environmental concerns with siting wind energy projects, understanding ecological resources is relevant to the siting of any large-scale energy project. As of January 29, 2021, and after repeated attempts in multiple browsers, it was determined this online tool is not functioning. However, many other sources of information were reviewed to develop an understanding of the types of ecological resources included in the Biodiversity and Wind Siting Online Mapping Tool. See Sections 3.0, 4.2, and 4.3 for discussion of ecological resources in the vicinity of the Facility Site.

2.7 CORNELL LABORATORY OF ORNITHOLOGY's eBird

The eBird database, managed by the Cornell Lab of Ornithology, is an on-line database of bird observations collected by citizen scientists around the world and vetted by regional experts. Data are used to document bird distribution, abundance, habitat use, and trends within a simple, scientific framework to help inform bird research worldwide. The main limitation of eBird data is the concentration of data on publicly accessible lands such as state and national parks, national forest lands, and known birding hotspots. Hotspots are public birding locations created by eBird users that allow multiple birders to enter data into the same shared location. Results were reviewed for two eBird hotspots: the first located on Burns Road between County Route 22 and Hemlock Ridge Road, and the second located on Johnson Road between Burns Road and Crane Road, both of which occur within the bounds of the Facility Site. The two eBird hotspots have a collective total of 77 unique species that have been observed since January 2016. The most frequently observed species include Canada goose (*Branta canadensis*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), red-winged blackbird (*Agelaius phoeniceus*), ring-billed gull (*Larus delawarensis*), and snow bunting (*Plectrophenax nivalis*). Five state-listed species were observed: the endangered short-eared owl, the threatened northern harrier and bald eagle, and the species of special concern osprey (*Pandion haliaetus*) and horned lark (*Eremophila alpestris*) (eBird, 2021a). The Wildlife Species List provided in Appendix C identifies all bird species observed at the Burns Road and Johnson Road hotspots from January 2016 to January 2021.

2.8 AUDUBON CHRISTMAS BIRD COUNT

The Christmas Bird Count (CBC), which was created by the National Audubon Society in 1900, is the longest-running citizen science project in the country. The primary objective of the CBC is to monitor the status and distribution of wintering bird populations across the Western Hemisphere. Counts take place on a single day within a defined 15-mile (24 kilometer) diameter count circle, and all bird species and individuals observed are recorded by volunteers. Data were queried for the Oak Orchard Swamp CBC circle which completely overlaps the Facility Site (see Figure 3; not to be confused with the Oak Orchard Swamp geographical feature). Over the last five years (2015-2019), a total of 96 unique species were observed in this count circle. The most commonly observed species include Canada goose, mallard (*Anas platyrhynchos*), rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), European starling, dark-eyed junco (*Junco hyemalis/carolinensis*), and house sparrow (*Passer domesticus*). Seven state-listed species were observed from 2015-2019, including: the endangered peregrine falcon (*Falco peregrinus*) and short-eared owl; the threatened bald eagle and northern harrier; and the species of special concern horned lark, Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*) (National Audubon Society, 2020a). The Wildlife Species List provided in Appendix C identifies all bird species observed within the Oak Orchard Swamp CBC circle from 2015-2019.

2.9 USGS BREEDING BIRD SURVEY

Overseen by the USGS Patuxent Wildlife Research Center, the North American Breeding Bird Survey (BBS), is a long-term, large-scale, international avian monitoring program that tracks the status and trends of bird populations. Each survey route is 24.5 miles long, with 3-minute point counts completed at 0.5-mile intervals. During the point counts, every bird seen or heard within a 0.25-mile radius is recorded. No BBS routes are located within the Facility Site. Data were queried for the closest survey route, Byron, located approximately 7.9 miles east of the Facility (see Figure 3). Over the last five years (2015-2019), a total of 80 unique species were observed along this route. The majority of the species recorded are birds common to of the field and forest habitats present in the region. More specifically, the most frequently observed species include American robin (*Turdus migratorius*), European starling, song sparrow (*Melospiza melodia*), chipping sparrow (*Spizella passerine*), and red-winged blackbird. However, three state-listed species were observed: the threatened bald eagle; and the species of special concern vesper sparrow (*Pooecetes gramineus*) and horned lark. No other birds currently state listed as threatened, endangered, or special concern were identified along the Byron route in the last five years (Pardieck et al., 2020). The Wildlife Species List provided in Appendix C identifies all bird species observed along the Byron BBS route during the 2015- 2019 surveys.

2.10 NEW YORK BREEDING BIRD ATLAS

The New York Breeding Bird Atlas (BBA) is a statewide inventory of all the birds breeding in the state. The first Atlas inventory was conducted from 1980-1985, the second from 2000-2005, and NYSDEC is currently working with agency and conservation partners to conduct the third Atlas inventory from 2020 to 2024 (BBA III). Field work for the BBA is conducted by dividing the state into small blocks of approximately 9 square miles, within which volunteers record all the bird species using that area and document evidence of breeding (NYSDEC, 2021c). A key change for the BBA III compared to the previous atlases is the use of eBird for data collection. eBird offers real-time data entry and outputs, so partial data results will be available throughout the entire survey period. The preliminary results for BBA III included data for three Atlas blocks that encompass the Facility Site: Knowlesville CE, Knowlesville SE, and Knowlesville SW.

Total species counts for these blocks ranged from 112 to 157, with a collective total of 165 unique bird species observed across all three blocks from March 2020 to December 2020. Most of the species recorded are birds common to the field and forest habitats present in the region. However, 12 state-listed species have also been observed: the endangered black tern (*Chlidonias niger*) and short-eared owl; the threatened northern harrier, bald eagle, and pied-billed grebe; and the species of special concern vesper sparrow, osprey, horned lark, red-shouldered hawk (*Buteo lineatus*), American bittern (*Botaurus lentiginosus*), sharp-shinned hawk, and Cooper's hawk (eBird, 2020b). The Wildlife Species List provided in Appendix C identifies all bird species observed within Atlas blocks Knowlesville CE, Knowlesville SE, and Knowlesville SW during the third BBA.

2.11 NEW YORK STATE ORNITHOLOGICAL ASSOCIATION

The New York State Ornithological Association (NYSOA) is a conservation organization focused on birds, with the goal of documenting the ornithology of New York State, fostering interest in and appreciation of birds, and protecting birds and their habitats. Members of NYSOA participate in citizen science efforts, contributing data to eBird, CBC, BBS, and BBA (described above in Sections 2.7, 2.8, 2.9, and 2.10, respectively). In addition, the New York State Avian Records Committee (NYSARC; a committee of the NYSOA) is responsible for maintaining the official list of species of birds known to occur or have occurred in New York State and adjacent coastal waters (including the Great Lakes). As part of this effort, NYSARC reviews all data pertaining to records of scarce or rare birds reported in the state (NYSOA, 2021a).

The NYSOA website includes a complete, downloadable list of all reports of rare birds submitted to and reviewed by NYSARC since its inception, including species, date, county, status, and publication date. All Orleans County records in this list, last updated in August 2020, were reviewed. No birds state listed as threatened, endangered, or species of special concern have been reported from Orleans County within the last five years (NYSOA, 2021b).

2.12 LOCAL BIRDING ORGANIZATIONS

The Facility Site falls within the Buffalo Ornithological Society's (BOS) region. The BOS is a member of the NYSOA and covers western New York and southeastern Ontario, Canada (BOS, 2021). The BOS is divided into 28 sections, the Facility Site falls within Section 5. The BOS participates in a number of bird counts each year, including the NYSDEC Waterfowl Count, Hawk Migration Association of North America (HMANA) Hamburg Hawkwatch Count, BOS April Count, BOS May Count, Bill Watson Memorial Waterbird Count, BOS shorebirds, BOS October Count, and CBCs. Several of the counts, such as the HMANA Hamburg Hawkwatch and BOS Shorebirds publish results in organizational journals (i.e., *The Prothontary, The Kingbird)*; however, none of the counts occur in the vicinity of the Facility Site. One location for the NYSDEC Waterfowl Count occurs adjacent to the Project at the Iroquois National Wildlife Refuge. There is one CBC count that encompasses the Facility Site, the Oak Orchard Swamp CBC, which is discussed above in Section 2.8.

The Facility Site is located directly northeast of the Iroquois National Wildlife Refuge, which is part of the National Audubon Society's Iroquois National Wildlife Refuge and Oak Orchard and Tonawanda Wildlife Management Areas Important Bird Area. The Friends of Iroquois National Wildlife Refuge, Inc. (FINWR) is a non-profit corporation run by volunteers whose mission is to support the Iroquois National Wildlife Refuge and educate the public about the plants and animals found there (FINWR, 2020). The website includes information about the organization and the refuge, including, a Bird Finder tool, which provides locations of birds that have been documented at the wildlife refuge within the last week. The website also provides a map of birding hotspots, where visitors have reported seeing the most birds at the Iroquois National Wildlife Refuge over the past week, as well as bird cameras to monitor nesting birds. There is no comprehensive list of observed birds available on the website. However, there is mention of the Oak Orchard Swamp CBC, which is discussed above in Section 2.8.

The Orleans Bluebird Society's mission is to promote awareness and conservation of native American cavity nesting birds found in Orleans County (Orleans Bluebird Society, 2021). The Orleans Bluebird Society was created to increase the nesting success of the resident eastern bluebird (*Sialia sialis*) population, as well as other cavity nesting songbirds. The website documents the occurrence of many cavity nesting birds. The only documented state-listed species is the red-headed woodpecker (special concern), but the date and location of the occurrence is not provided (Orleans Bluebird Society, 2021).

2.13 BAT CONSERVATION INTERNATIONAL'S DATABASE ON BAT SPECIES RANGES

According to the Bat Conservation International (BCI) database on bat species ranges, nine species of bat have ranges that extend into New York State. The BCI "approximate range" maps show that six of these species have ranges that overlap the Facility Site, including both migratory tree bats and cave-hibernating bats. Most of these species, such as big brown bat (*Eptesicus fuscus*) and eastern red bat (*Lasiurus borealis*), are relatively common. However, northern

long-eared bat (*Myotis septentrionalis*) is both state- and federally listed as threatened. Although the ranges for these species include the Facility Site, BCI does not provide occurrence data that could be used to determine the actual presence or absence of bat species at any given location (BCI, 2021).

2.14 NYSDEC BAT INFORMATION

NYSDEC data also indicate that nine bat species have the potential to occur in New York State, six cave bats and three tree bats (Stegemann & Hicks, 2008). Listed species include the state- and federally listed threatened northern long-eared bat (NLEB), the state- and federally listed as endangered Indiana bat (*Myotis sodalist*), and the state-listed species of special concern small-footed bat (*Myotis leibii*). However, none of these listed species were identified by the NYNHP, NYSDEC, or USFWS as known to occur within the vicinity of the Facility. More specific information regarding the potential occurrence of each species is provided below.

Knowledge of the distribution of Indiana bat is mostly limited to caves and mines in which they are known to hibernate, located in eight New York counties. However, as the animals disperse to breeding areas and other habitats to feed and raise their young, the summer range of Indiana bat extends well beyond these hibernacula. Radio telemetry studies have tracked bats leaving the hibernacula to maternity colonies in 10 counties and bachelor colonies in seven counties. There are no hibernacula, maternity colonies, or bachelor colonies currently known to occur in Orleans County (NYSDEC, 2021d; NYNHP, 2021a).

Prior to the onset of white-nose syndrome (WNS), NLEB were frequently detected in the forests of every county of New York State, except for the five counties of New York City. The NLEB was New York State's third most common bat species, with populations estimated at or above 500,000 animals as recently as 2005. WNS, a disease caused by an invasive fungus that ultimately causes affected hibernating bats to starve to death over the winter, resulted in a 99% decline in the abundance of NLEB by 2015. It is unknown whether NLEB is still present across the state in much diminished numbers, or whether it has become locally extirpated in some areas due to WNS (NYSDEC, 2021e; NYNHP, 2021b). According to the NYSDEC (2020f), it may be possible to rule out the presence of NLEB by referring to town-level distribution information in combination with the Environmental Resource Mapper. If the NLEB is not mapped within a given town and is not identified as present in a query of the Environmental Resource Mapper, then "it's not likely your project will harm NLEB." Because the Environmental Resource Mapper does not display species-specific information and only indicates the distribution of rare or state and federally-listed species, the EAF Mapper was used for this analysis. There are no records of NLEB in the Towns of Barre and Shelby or all of Orleans County (NYSDEC, 2020a) and there are no records in the Environmental Resource Mapper or the EAF Mapper application of NLEB in the vicinity of the Facility Site (NYSDEC, 2021a; see Appendix A).

Small-footed bats are most frequently recorded at hibernacula in northern New York, with most of the large sites located in the Adirondacks. Hibernacula for this species include caves in four counties in eastern and central New York, and mines in four counties in southern and western New York. Small-footed bats have been captured at summer foraging locations in central New York and southern New York, although the summer range is thought to be larger than what is currently recorded. There are no winter or summer records of small-footed bats from Orleans County (NYNHP, 2021c).

2.15 HERP ATLAS PROJECT

The New York State Amphibians & Reptile Atlas Project (Herp Atlas) was a survey conducted over a 10-year period (1990-1999) that was designed to document the geographic distribution of New York State's herpetofauna. The USGS 7.5-minute topographic quadrangle is the unit of measurement for data collection for the Herp Atlas (NYSDEC, 2007b). Data collection is currently underway (2019-2028) for a continuation and update of the original Herp Atlas Project. However, no occurrence data has yet been submitted in the current Atlas for the Knowlesville quadrangle, which include the Facility Site (NYHA, 2020). Therefore, data from the original survey were also queried. A total of 11 amphibian species and six reptile species were identified within the Knowlesville quadrangle (see Figure 3). These records mostly consist of common and widespread species including American toad (*Anaxyrus americanus*), painted turtle (*Chrysemys picta*), common garter snake (*Thamnophis sirtalis*), bull frog (*Lithobates catesbeiana*), and red-spotted newt (*Notophthalmus viridescens*). However, the Jefferson Salamander (*Ambystoma jeffersonianum*), a species of special concern, was also detected. No other reptile or amphibian species currently state listed as threatened, endangered, or special concern were identified in the Knowlesville quadrangle during the 1990-1999 Herp Atlas Project (NYSDEC, 2007b). The Wildlife Species List provided in Appendix C identifies all reptile and amphibian species observed within the Knowlesville quadrangle during the original Herp Atlas Project.

3.0 SITE SPECIFIC SURVEYS

3.1 BREEDING BIRD SURVEY

EDR conducted a breeding bird survey on the Facility Site in 2020. The primary purpose of this survey was to identify and document avian species that utilize the Facility Site during the breeding season. The scope of this survey was defined in a Breeding Bird Survey Work Plan that was submitted for NYSDEC staff review and comment in May 2020. The on-site surveys were conducted by qualified biologists following recommendations provided by NYSDEC staff and the methodology established in the 2015 NYSDEC *Survey Protocol for State-listed Breeding Grassland Bird Species* (NYSDEC, 2015a). Survey locations were selected to provide representative coverage of a variety of different ecological community and habitat types found in the Facility Site, including active row cropland used for corn, soybean, or vegetable production, fallow row cropland, successional shrubland, wetlands, and forestland. Surveys were conducted once per week between May 22 and July 15, 2020. Surveys were completed on nine different days, and in total, included 184 breeding bird point counts and more than 69 survey-hours.

A total of 827 individual birds representing of 52 different species were recorded within 100 m of point count locations. The most abundant species observed included horned lark (23.5% of all observations), song sparrow, and red-winged blackbird (*Agelaius phoeniceus*), which in total accounted for approximately 52% of all observations throughout the survey period. One juvenile bald eagle, a state-listed threatened species, was observed flying south over the Facility Site on June 1, 2020. However, no other observations of this species or other listed threatened or endangered species were made throughout the duration of the survey. Birds listed as species of special concern and species of greatest conservation need were observed during the survey. These include red-shouldered hawk, vesper sparrow, horned lark, brown thrasher (*Toxostoma rufum*), bobolink (*Dolichonyx oryzivorus*), blue-winged warbler (*Vermivora cyanoptera*), and wood thrush (*Hylocichla mustelina*). The complete breeding bird survey report was submitted to the NYSDEC and ORES on November 19, 2020. The Wildlife Species List provided in Appendix B identifies all avian species observed during the 2020 breeding bird surveys conducted by EDR.

3.2 WINTERING RAPTOR SURVEY

A winter raptor survey was initiated by EDR during November of 2020 and is ongoing at the Facility Site. The purpose of this survey is to determine if any state-listed raptor species are utilizing grassland habitat within the Facility Site during the winter season. The NYNHP have identified known occurrences of short-eared owl and northern harrier within the Facility Site, and the NYSDEC and EDR have both identified the potential for suitable habitat to exist on-site. The CBC, BBA, and eBird also identified northern harrier and short-eared owl in the vicinity of the Facility Site. The scope of this survey was defined in a Winter Raptor Survey Work Plan that was submitted for NYSDEC staff review in November 2020.

The on-site winter raptor surveys are being conducted by qualified biologists following recommendations provided by NYSDEC staff and the methodology established in the 2015 NYSDEC *Survey Protocol for State-listed Wintering Grassland Raptor Species* (NYSDEC, 2015b). To date, a total of 29 raptors have been observed at eight stationary point count locations, including 13 state-listed raptors (four bald eagles [threatened], one short-eared owl [endangered], and eight northern harriers [threatened]). The remaining raptors included 13 red-tailed hawks (*Buteo jamaicensis)*, one unknown accipiter, and two unknown raptors. Additionally, a total of 10 raptors have been observed during daytime driving surveys at 18 locations, including seven red-tailed hawks, one northern harrier (threatened), one sharp-shinned hawk (species of special concern), and one bald eagle (threatened). The Wildlife Species List provided in Appendix B identifies all avian species observed to date during the ongoing winter raptor surveys. The complete winter raptor survey report will be submitted to the NYSDEC and to the ORES after completion in March 2021.

4.0 THREATENED OR ENDANGERED SPECIES OR SPECIES OF SPECIAL CONCERN

This section provides more information about the state-listed threatened or endangered species or species of special concern identified in the publicly available data sources, as summarized above. Sections 4.1 through 4.6 respond to specific requirements of §900-1.3(g)(1), which are provided for reference at the beginning of each discussion.

4.1 SPECIES DOCUMENTED AT THE PROPOSED FACILITY

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(i) Species documented at the proposed facility, access roads, interconnections, connecting lines, from available data sources. A subset of NYS threatened or endangered species identified within the last five (5) years shall be provided.

A full list of wildlife species documented in the vicinity of the Facility Site is included as Appendix C. A subset of the full list, comprising those species that are state-listed as threatened or endangered, as required by §900-1.3(g)(1) and have been identified within the last five years, is presented below in Table 1. Data from observations made more than five years ago are not included here. However, where pertinent, such observations are discussed in the evaluation of habitat suitability for each listed species (see Section 4.2).

Table 1. State-listed Species Observed Within the Last Five Years in the Vicinity of the Facility Site

Species	NYS Status	USFWS Status	SGCN Status[1]	Source[2]
American bittern *Botaurus lentiginosus*	Special Concern	n/a	SGCN	BBA
bald eagle *Haliaeetus leucocephalus*	Threatened	n/a	SGCN	eBird, CBC, BBS, BBA
black tern *Chlidonias niger*	Endangered	n/a	SCGN	BBA
Cooper's hawk *Accipiter cooperii*	Special Concern	n/a	SGCN	CBC, BBA
horned lark *Eremophila alpestris*	Special Concern	n/a	SGCN	eBird, CBC, BBS, BBA
northern harrier *Circus cyaneus*	Threatened	n/a	SGCN	eBird, CBC, BBA
osprey *Pandion haliaetus*	Special Concern	n/a	SGCN	eBird, BBA
peregrine falcon *Falco peregrinus*	Endangered	n/a	SCGN	CBC
pied-billed grebe *Podilymbus Podiceps*	Threatened	n/a	SGCN	BBA
red-shouldered hawk *Buteo lineatus*	Special Concern	n/a	SGCN	BBA
sharp-shinned hawk *Accipiter striatus*	Special Concern	n/a	SGCN	CBC, BBA
short-eared owl *Asio flammeus*	Endangered	n/a	SGCN-HP	eBird, CBC, BBA

Species	NYS Status	USFWS Status	SGCN Status[1]	Source[2]
vesper sparrow *Pooecetes gramineus*	Special Concern	n/a	SGCN	BBS, BBA

[1] SGCN Status refers to status under the Comprehensive State Wildlife Strategy. SGCN = Species of Greatest Conservation Need, SGCN-HP = High Priority Species of Greatest Conservation.
[2] eBird= Cornell Laboratory of Ornithology's eBird; CBC= Audubon Christmas Bird Count, Oak Orchard Swamp Count Circle; BBS = USGS Breeding Bird Survey, Byron route; BBA= The New York Breeding Bird Atlas III.

4.2 EVALUATION OF HABITAT SUITABILITY FOR LISTED SPECIES AT THE FACILITY SITE

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(ii) For each listed animal species documented from available data sources, provide an evaluation of current habitat suitability for those species at the project site.

4.2.1 American Bittern

The American bittern occurs across the northern half of North American and in most of Canada and sparsely within New York State. Historic declines were documented in the 1950s through 1970s due to loss of habitat, but populations now appear to be fairly stable. American bitterns utilize freshwater wetlands with tall emergent vegetation and abundant amphibian populations. This species can thrive at wetlands of many types as long as suitable prey and adequate cover are available (NYSDEC, 2014g). In winter this species moves to areas where water bodies do not freeze. Managed wetlands such as wildlife refuges are important habitat for wintering American bitterns. Wintering birds may also forage in dry grasslands and other terrestrial habitats. American bitterns feed on insects, crustaceans, fish, amphibians, reptiles, and small mammals (Cornell Lab of Ornithology, 2021). Nesting occurs in grasslands adjacent to wetland habitat (NYSDEC, 2014g).

The only record of this species of special concern within 5 miles of the Facility Site is an observation in the Knowlesville SE Atlas block of the preliminary BBA III results (eBird, 2020b). The American bittern was not observed during EDR's breeding bird survey in 2020. While wetland habitat does occur within the Facility Site, on-site emergent wetlands and ponds do not have sufficient open water area or ample amphibian supply for this species. Many of these wetlands are also associated with active agricultural fields, and sufficient nesting habitat (i.e., grasslands adjacent to emergent wetlands) does not exist within the Facility Site. It is most likely this species is utilizing the Iroquois National Wildlife Reserve or Oak Orchard Wildlife Management Area and would only be present within the Facility Site as a fly-over or brief stop-over during migration.

4.2.2 Bald Eagle

Bald eagles breed near water from Alaska throughout Canada and in scattered areas throughout the northern contiguous United States. In New York, bald eagles breed throughout the state, usually in areas with large bodies of water that support high populations of fish and waterfowl, their primary food source. Large, heavy nests are built in tall

pine, spruce, fir, cottonwood, oak, poplar, or beech trees (NYNHP, 2021h). Bald eagles can be residents or long-distance migrants, depending on age, breeding location, and food availability. Northern adults begin fall migration when lakes and rivers freeze, usually migrating coastward or to other open waters. They return to breeding grounds when weather and food permit, usually January–March (Cornell Lab of Ornithology, 2021). Non-breeding adults and wintering birds often use communal roost sites that may be farther away from food sources, possibly due to the need for a warmer or more sheltered location. In New York, wintering sites are concentrated in four main areas: the Upper Delaware River, the Saint Lawrence River, the Lower Hudson River, and the Sacandaga River (NYNHP, 2021h). With the exception of the Lower Hudson River (which is influenced by salt water and the action of tides), these areas have large persistent open water throughout the winter due to releases from man-made dams.

The Facility Site and immediate vicinity contain several small farm ponds and wetlands, but there are no large bodies of water within or adjacent to the Facility Site. Lake Ontario, located approximately 13 miles to the north, is the closest large body of open water. However, the Iroquois National Wildlife Refuge, located approximately 0.1 mile southwest, includes extensive areas of marsh and forested wetland, and two pairs of bald eagles have established nest sites on the refuge (USFWS, 2020). A total of 53 bald eagles were recorded in the last five CBC (Oak Orchard Swamp Circle) surveys, with numbers of individuals detected ranging between five and 20 per count (National Audubon Society, 2020a). This suggests that wintering bald eagles may utilize the area. However, it should be noted that CBC data does not disclose the specific location where observations are made within a count circle. The Facility Site is located near the center of the Oak Orchard Swamp count circle, while the far northern portion of the circle is approximately 2-miles off Lake Ontario's shoreline. Open water frequently remains throughout the winter at Lake Ontario; therefore, it seems probable that many of the CBC bald eagle observations are from the northern portion of the count circle or would relocate to that area once open water areas in the nearby Iroquois Wildlife Refuge freeze over. The eBird database recorded a total of four bald eagles since 2016. The two eBird hotspots where this data was collected are both within 150 feet of the Facility Site (eBird, 2021a). Winter raptor surveys are currently under way at the Facility Site. To date, five bald eagle observations have been recorded by EDR, and all behaviors involved flying over the site, rather than roosting or foraging. These data suggest that bald eagles nest and winter in the vicinity of the Facility Site, but likely not on site.

4.2.3 Black Tern

Black terns are widespread, breeding throughout the northern hemisphere. However, loss of habitat has decreased this species overall range. Specifically, in New York State, black terns are currently restricted primarily to a handful of managed inland freshwater marshes in Jefferson and St. Lawrence Counties. Breeding colonies also occur on Montezuma National Wildlife Refuge in Seneca County and the Iroquois National Wildlife Refuge in Orleans County. Black terns utilize marsh habitats, preferring mixtures of emergent vegetation and open water. Marsh size and proximity to other wetlands are critical factors in habitat selection. Black terns favor larger wetlands (> 50 acres) but

will nest in wetlands smaller in size if they are part of a larger wetland complex (NYNHP, 2020d). Nests are often placed on dead, floating vegetation with ideal water depths of about 50 cm. Black terns eat mostly small fish and insects that they capture above marsh vegetation or open water (Cornell Lab of Ornithology, 2021).

The largest open water wetland on the Facility Site (a man-made farm pond) does not represent suitable habitat for the black tern. This open water wetland is only 1.14 acres in size and is not connected to a larger wetland complex. Consultation with the NYNHP in 2020 confirmed that no known black tern occurrences have been documented within the Facility Site. However, preliminary results of the BBA III indicate that black tern was observed in the Knowlesville SW Atlas block, within one mile of the proposed Facility (eBird, 2020b), most likely within the Iroquois National Wildlife Reserve or Oak Orchard Wildlife Management Area. If the black tern were to occur within the Facility Site, it would likely only be as a fly-over or brief stop-over during migration.

4.2.4 Cooper's Hawk, Red-shouldered Hawk, Sharp-shinned Hawk

Cooper's hawks, sharp-shinned hawks, and red-shouldered hawks are woodland birds that prefer forests with high foliage height diversity, though they can also be found in suburban habitats (Cornell Lab of Ornithology, 2020). Cooper's hawks are year-round residents across much of the United States, including New York State, although birds at the northern edge of the range (i.e., in southern Canada and the northern U.S.) are described as short to medium-distance migrants (Cornell Lab of Ornithology, 2020). Cooper's hawk is a woodland raptor that specializes in avian prey. It uses deciduous, mixed, and coniferous woodlands for nesting and feeding, as well as urban and suburban areas. Populations of Cooper's hawk are thriving throughout their range and have exploded in New York State, owing mostly to this species' ability to exploit man-altered landscapes. However, there are still localized threats, including loss of appropriate woodlots for breeding and foraging (NYSDEC, 2014a). A total of 27 Cooper's hawks were recorded in the last five Oak Orchard Swamp circle CBC surveys, with numbers of individuals detected ranging between four and eight per count (National Audubon Society, 2020a). Additionally, preliminary results of the BBA III indicate that Cooper's hawk was observed in the Knowlesville SW Atlas block (eBird, 2020b), which overlaps the western portion of the Facility Site.

Red-shouldered hawks occur primarily in the eastern half of the United States, with New York being the northern extent of their range (NYSDEC, 2014b; Cornell Lab of Ornithology, 2020). In New York, red-shouldered hawks are found in bottomland hardwood forests, riparian habitats, and flooded swamps as well as in upland forests (NYSDEC, 2014b). They typically nest in broad-leaved trees just below the forest canopy near ponds, streams, or swamps where prey is abundant (Cornell Lab of Ornithology, 2020). Red-shouldered hawks' diet consists primarily of amphibians, small mammals, lizards, and snakes. Preliminary results of the BBA III indicate that red-shouldered hawk was observed in the Knowlesville SW Atlas block (eBird, 2020b), which overlaps the western portion of the Facility Site.

Sharp-shinned hawk is a widespread breeder in all of New York except the coastal lowlands. It is a common migrant and a rare but increasing winter resident. The sharp-shinned hawk occurs from sea level to nearly alpine habitats, breeding in mixed, deciduous, and coniferous forests. Nests are most frequently placed in wooded areas where the canopy is dense and trees are small in diameter and closely spaced (NYSDEC, 2014c). A total of 26 sharp-shinned hawks were recorded in the last five Oak Orchard Swamp circle CBC surveys, with numbers of individuals detected ranging between two and 10 per count (National Audubon Society, 2020a). Additionally, preliminary results of the BBA III indicate that sharp-shinned hawk was observed in the Knowlesville SW Atlas block (eBird, 2020b), which overlaps the western portion of the Facility Site.

During EDR's breeding bird survey a red-shouldered hawk was heard calling in the vicinity of one of the transects. Additionally, winter raptor surveys are currently under way at the Facility Site. To date, one sharp-shinned hawk observation has been recorded by EDR. This individual was observed flying through the site, rather than roosting or foraging. No Cooper's hawks have yet been observed at the Facility Site by EDR staff. These data suggest that these raptors nest and winter in the vicinity of the Facility Site, but likely not on site. Furthermore, only 7.5% of the Facility Site's land cover is categized as forest. Therefore, although some habitat for these forest hawks may be present on site, it is limited. More extensive, higher quality forest habitat exists in adjacent areas of the Facility. See Section 4.3.4 for a discussion of core forest blocks within 5 miles and Section 4.5.3 for a discussion of land cover within the Facility Site.

4.2.5 Horned Lark

The breeding range for horned lark is vast but patchy, extending from the arctic islands to central Mexico. This species is found year-round throughout much of its range, with northern populations migrating to central or southern parts of the breeding range during the winter months. Two races of horned lark occur in New York State: the nominate *alpestris*, which is migratory, breeding in Ontario and Quebec and wintering in large numbers in New York, and the race *practicola*, which breeds in New York and is at least partially sedentary (NYSDEC, 2014d). Horned larks favor bare, dry ground and areas of short, sparse vegetation; they avoid places where grasses grow more than a couple of inches high. Common habitats include crop fields, prairies, deserts, tundra, beaches, dunes, mowed airstrips, and heavily grazed pastures (Cornell Lab of Ornithology, 2020). The North American distribution has shifted in response to habitat availability, with populations in the shortgrass prairies west of the Mississippi River expanding eastward and southward during the late 1800s as land was cleared for agriculture. Breeding was first confirmed in New York State in 1875. Populations are now declining in the east with the loss of open agricultural lands suitable for breeding. Currently, the horned lark is only a locally common breeder in agricultural areas of New York, nesting on unplowed fields early in the year, often raising and fledging young before fields are planted in the spring (NYSDEC, 2014d).

A total of 543 horned larks were recorded in the last five Oak Orchard Swamp circle CBC surveys, with numbers of individuals detected ranging between 10 and 308 per count (National Audubon Society, 2020a). Horned larks were

also reported in the area on the BBA III preliminary results. Review of aerial imagery and the NLCD indicates that there are areas of cropland within and adjacent to the Facility Site that could be used by breeding and/or wintering horned larks (see Figure 10). Horned larks were observed at all survey locations during EDR's breeding bird survey and most frequently spotted in open agricultural fields. This species has also been identified at the Facility Site during ongoing winter raptor surveys. The horned lark is a grassland species that forages low in the vegetation for seeds and invertebrates. Consequently, it is anticipated that this species may be able to utilize the maintained early successional communities underneath and around the proposed PV panel arrays for foraging and possibly breeding activity. See Section 4.3.3 for a discussion of Grassland Focus Areas within 5 miles and Section 4.5.3 for a discussion of land cover within the Facility Site.

4.2.6 Northern Harrier

Northern harriers have a large but discontinuous breeding range in North America, including much of Canada, Alaska, and the northern contiguous United States. In New York State, northern harriers are confirmed breeders in the western Great Lakes plain, open habitats of the Adirondacks, western Finger Lakes, Long Island, and the Hudson, Saint Lawrence, and Lake Champlain valleys. The winter range in New York is similar depending on prey abundance and snow cover. Northern Harriers use a wide range of open grasslands, hayfields, shrubland, and salt and freshwater marshes. Nests are placed on the ground, usually in dense cover (NYNHP, 2021g). In winter, northern harriers roost in groups on the ground, sometimes with short-eared owls (Cornell Lab of Ornithology, 2021).

Preliminary results of the BBA III indicate that northern harrier was observed in the Knowlesville SW and Knowlesville SE Atlas blocks (eBird, 2020b), which overlap the majority of the Facility Site. Additionally, the eBird database recorded two northern harriers since 2016 at the Burns Road eBird hotspot between County Route 22 and Hemlock Ridge Road, which is located adjacent to the Facility Site (eBird, 2021a). However, no breeding northern harriers were documented during the on-site breeding bird survey conducted by EDR. A total of 26 wintering northern harriers were recorded in the last five CBC surveys in the Oak Orchard Swamp circle, with numbers of individuals detected ranging between four and nine per count (National Audubon Society, 2020a). Consultation with the NYNHP in 2020 and the NYSDEC during preparation and review of the Wintering Raptor Survey Work Plan, along with review of aerial imagery and the National Land Cover Dataset (NLCD), indicated that portions of the Facility Site could represent suitable wintering habitat for northern harrier. Winter raptor surveys are currently under way at the Facility Site, and to date, nine northern harrier observations have been recorded by EDR, with behaviors including flying through the Facility Site and foraging in open fields. These data indicate that wintering northern harriers commonly occur in the area.

4.2.7 Osprey

Osprey breed in New York along coastal and inland shorelines, with the largest populations on Long Island, Lake Champlain, the St. Lawrence River, Oneida Lake, and the Finger Lakes (NYSDEC, 2014e). Ospreys utilize shallow bodies of water with ample fish supply, including rivers, lakes, reservoirs, swamps, and marshes. Nests are often built-

in large trees and on human-made structures, and suitable nesting habitat must include accessible fish within a maximum of 12 miles from the nest. (Cornell Lab of Ornithology, 2020).

While wetland habitat does occur within the Facility Site, on-site emergent wetlands and ponds do not have sufficient open water area or ample fish supply for this species. The ebird database has recorded only one osprey in the area since 2016. The observation was made at the Burns Road ebird hotspot between County Route 22 and Hemlock Ridge Road, which is located adjacent to the Facility Site (eBird, 2021a). Osprey were also reported in the preliminary results of the BBA III Knowlesville SE Atlas block. It is most likely this species is utilizing the Iroquois National Wildlife Reserve or Oak Orchard Wildlife Management Area and would only be present within the Facility Site as a fly-over during migration.

4.2.8 Peregrine Falcon

The peregrine falcon is a nearly cosmopolitan bird that breeds on every continent except Antarctica. They often nest on ledges or holes on the faces of rocky cliffs, and in more urban areas, on human-made structures such as bridges and tall buildings. Wintering birds frequent buildings, towers, and steeples in urban areas, and open areas with plentiful prey in more natural settings. In New York State, the current breeding range includes the Adirondacks, bridges and cliffs in the Hudson Valley, and buildings and bridges in the New York City area, as well as scattered urban sites throughout the State, such as Rochester, Buffalo, Binghamton, and Albany (NYNHP, 2021f). The peregrine falcon has one of the longest migrations of any North American bird (Cornell Lab of Ornithology, 2021).

A total of three peregrine falcons were recorded in the last five CBC surveys in the Oak Orchard Swamp Circle, with a single bird observed on December 28, 2015 and two observed on December 27, 2018 (National Audubon Society, 2020a). These observations likely represent migrating birds. There is no suitable breeding habitat for peregrine falcons within the Facility Site.

4.2.9 Pied-billed Grebe

Pied-billed grebes are widespread and fairly common in most of the United States and southern Canada (Cornell Lab of Ornithology, 2021). However, in New York State, pied-billed grebes are considered rare to uncommon, with local breeding populations clustered around large wetland complexes. Pied-billed grebes utilize marsh habitats, shallow lakes, and slow-moving streams, preferring habitats with a roughly 50/50 combination of emergent vegetation and open water (NYNHP, 2020i). Nests are placed within tall vegetation with ideal water depths ranging from 25 to 50 cm. Pied-billed grebes often setting up breeding territories in wetlands impounded by beavers or humans as opposed to those of glacial origin. Mid-sized wetlands (1.5 – 17.0 acres) are preferred over very large or very small wetlands. As opportunistic feeders, pied-billed grebes prefer crayfish and small fish, but feed on a wide variety of prey items depending on what is available (Cornell Lab of Ornithology, 2021).

The preliminary results of the BBA III indicate that pied-billed grebe was observed in the Knowlesville SE and Knowlesville SW atlas blocks (eBird, 2020b). While wetland habitat does occur within the Facility Site, on-site emergent wetlands and ponds do not have sufficient open water area or depth for this species. Based on consultation with the NYNHP and with NYSDEC in the development of on-site surveys, it was confirmed that no known pied-billed grebe occurrences have been documented within the Facility Site. However, this species has been documented within one mile of the Facility Site according to BBA III data, most likely within the Iroquois National Wildlife Reserve or Oak Orchard Wildlife Management Area. If the pied-billed grebe were to be present within the Facility Site, it would likely only be as a fly-over or brief stop-over during migration.

4.2.10 Short-eared Owl

Short-eared owls range over much of North America at various times of year, but breeding is restricted to Canada and northern portions of the United States. In New York State, the breeding range is generally limited to the St. Lawrence and Lake Champlain valleys, the Great Lakes Plains, and marshes along the south shore of Long Island. However, the number of short-eared owl observations increases between fall and spring as northern populations migrate south, possibly in search of food. Significant numbers of wintering owls use the Finger Lakes and the Lake Ontario plains, scattered locations in the Hudson Valley, and the south shore of Long Island. Both breeding and wintering short-eared owls typically use open areas such as grasslands (hayfields, fallow farmlands, and pastures) and fresh and saltwater marshes. They tend to prefer habitats with some water, which may be due to the habitat preference of voles, their primary prey (NYNHP, 2021e), but typically select dry spots on the ground to build their nests, often on small knolls, ridges, or hummocks with enough grasses and other low vegetation to conceal the incubating female. When food is plentiful, winter areas often become breeding areas (Cornell Lab of Ornithology, 2021).

Preliminary results of the BBA III indicate that short-eared owl was observed in the Knowlesville SW atlas block (eBird, 2020b), which overlaps the Facility Site. Additionally, the ebird database recorded a total of two short-eared owls since 2016. Both observations were made at the Burns Road ebird hotspot between County Route 22 and Hemlock Ridge Road, which is located adjacent to the Facility Site (eBird, 2021a). However, no breeding short-eared owls were documented during the on-site breeding bird survey conducted by EDR. A total of 10 short-eared owls were recorded in the last five CBC surveys (Oak Orchard Swamp Circle), with numbers of individuals detected ranging between two and four per count (National Audubon Society, 2020a). Consultation with the NYNHP in 2020 and the NYSDEC in development of on-site surveys, along with review of aerial imagery and the NLCD, it was determined that portions of the Facility Site could provide suitable wintering habitat and potential breeding habitat for short-eared owl. Winter raptor surveys are currently under way at the Facility Site and to date, two short-eared owl observations have been recorded by EDR. Final results of this survey will be used to determine whether the site represents occupied habitat for short-eared owl.

4.2.11 Vesper Sparrow

Vesper sparrows occur throughout much of the United States and Canada and are partially migrant as northern populations may winter in the southern United States southward to Central America. They are found throughout most of New York State in open areas with short, sparse grass, and scattered shrubs. Vesper sparrows are most frequently found in old fields, pastures, hayfields, weedy fence lines and roadsides, and native grasslands. Vesper sparrows respond quickly to changes in habitat and colonize new areas swiftly when habitat becomes suitable. They forage low in the vegetation for seeds and insects. Nests are located on the ground in shallow depressions, often under or near clumps of vegetation, logs, or branches (Cornell Lab of Ornithology, 2021; NYSDEC, 2014f).

Within the last five years, a total of 28 vesper sparrows were recorded along the Byron BBS survey route, located approximately 7.9 miles east of the Facility Site (Pardieck et al., 2020). Additionally, preliminary results of the BBA III indicate that vesper sparrow was observed in the Knowlesville SE and Knowlesville CE Atlas blocks (eBird, 2020b). Review of aerial imagery and the NLCD indicates that there are areas of hayfields/pastureland within and adjacent to the Facility Site that could potentially be used by breeding vesper sparrows (see Figure 10), and nine individuals were observed during EDR's breeding bird survey in 2020. As mentioned previously, the vesper sparrow is a grassland species that forages low in the vegetation for seeds and invertebrates. Consequently, it is anticipated that this species is present on site and may be able to utilize the maintained early successional communities underneath and around the PV panel arrays for foraging and possibly breeding activity. See Section 4.3.3 for a discussion of Grassland Focus Areas within 5 miles and Section 4.5.3 for a discussion of land cover within the Facility Site.

4.3 LANDSCAPE FEATURES AND RESOURCES WITHIN FIVE MILES

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(iii) Landscape features and resources of potential concern within five (5) miles of the facility that may function to funnel or concentrate birds and bats, with a focus on NYS threatened or endangered species, during migration or for feeding, breeding, wintering, or roosting activities, such as national wildlife refuges, wildlife management areas, grassland focus areas, core forest blocks (contiguous areas one hundred fifty (150) acres or larger), Audubon Important Bird Areas, high elevation mountaintops, prominent ridgelines, forested riparian areas, known hibernacula, records of caves and mines, or other significant habitat areas.

The Facility Site is located in western New York, which lies along the Atlantic Flyway, a major north/south corridor utilized by migratory birds. Several of the resources identified in this Section are overlapping or coincide with protected landscape features (i.e., Iroquois National Wildlife Refuge, Tonawanda Wildlife Management Area, Oak Orchard Wildlife Management Area), as noted in the text below.

No high elevation mountain tops or known bat hibernacula occur within five miles of the Facility Site. However, a variety of other landscape features and resources of potential concern within 5 miles of the Facility that may function to funnel or concentrate birds and bats occur within 5 miles of the Facility Site. Each of these is discussed in detail below.

4.3.1 National Wildlife Refuges

The USFWS manages a diverse network of lands and waters dedicated to conserving fish, wildlife, and wildlife habitat resources through the National Wildlife Refuge System. The Iroquois National Wildlife Refuge (originally named the Oak Orchard National Wildlife Refuge) was founded in 1958. It encompasses approximately 11,000 acres of land, including emergent marsh and forested wetlands associated with the Oak Orchard Creek Floodplain, maintained grasslands, and other forested and shrubland areas.

At its nearest point, the Iroquois National Wildlife Refuge is approximately 0.1 mile southwest of the Facility Site, and approximately 10,013 acres of the Refuge occur within the 5-mile radius surrounding the site. Approximately 266 species of birds have been observed at the Refuge, with several state and federally listed species and state SGCN species having been documented. Of the listed threatened and endangered species identified in this location, three were observed during on site surveys of the Facility Site (bald eagle, northern harrier, short-eared owl).

4.3.2 Wildlife Management Areas

The NYSDEC Fish and Wildlife Division administers 128 Wildlife Management Areas across the state. These areas typically provide important habitat resources for a variety of wildlife to use and the NYSDEC actively manages portions of these areas to maintain quality habitat for targeted species (NYSDEC, 2018). These areas also provide recreational and educational opportunities to the public, primarily in the form of hunting, fishing, trapping, wildlife observation, hiking, and other passive recreation. Two NYSDEC Wildlife Management Areas are present within 5 miles of the Facility Site, both of which are primarily managed for migratory waterfowl, marsh bird, and grassland habitat.

The Tonawanda Wildlife Management Area encompasses a 5,600-acre area within the Tonawanda Creek floodplain, southwest of the Oak Orchard Swamp (where the Iroquois National Wildlife Refuge and Oak Orchard Wildlife Management Area are located). Approximately 11 acres of the Tonawanda Wildlife Management Area are within 5 miles of the Facility Site. The Oak Orchard Wildlife Management Area occurs entirely within the 5-mile radius and encompasses approximately 2,500 acres of the Oak Orchard Swamp. At its closest point, the Oak Orchard Wildlife Management Area is approximately 0.5 mile from the Facility Site.

4.3.3 Grassland Focus Areas

The entire Facility Site, as well as the majority of the area within 5 miles, lies within Grassland Focus Area 7, which encompasses over 1.5 million acres in the Northern Allegheny Plateau and Eastern Great Lakes Lowlands regions in western New York (see Figure 4). In New York State, Grassland Focus Areas were created because grassland birds are declining faster than any other habitat-species suite in the northeastern United States. The draft focus areas were initially delineated by including contiguous BBA blocks where grassland bird species were found to be breeding; with subsequent field surveys conducted to confirm habitat conditions and refine the focus area boundaries. The final

Grassland Focus Areas cover approximately 22% of the total land area covered by BBA blocks in New York State. However, the final Focus Areas include approximately 63% of those BBA survey blocks within which 12 specific grassland bird species were reported (Morgan & Burger, 2008).

Based on the preliminary results of the current BBA III, seven of the 12 grassland bird species considered in identifying the Grassland Focus Area 7 were identified in at least one of the three survey blocks overlapping the Facility Site. These include northern harrier, short-eared owl, bobolink, horned lark, vesper sparrow, eastern meadowlark, and savannah sparrow (eBird, 2020b). The Breeding Bird Survey identified four of the 12 grassland bird species along the Byron BBS route within the last five years: bobolink, horned lark, vesper sparrow, and savannah sparrow (Pardieck et al., 2020). It should be noted that two of these four species were identified as "the most ubiquitous" grassland bird species during the process of designating the Grassland Focus Areas (Morgan & Burger, 2008). In addition, the Applicant has completed a site-specific breeding bird survey at the Facility Site, which identified the same four grassland species in the spring and early summer of 2020.

4.3.4 Core Forest Blocks

New York's forests provide important breeding, migratory stop-over, and wintering habitat for more than a hundred species of birds. One of their most important ecological functions is to provide breeding habitat for bird species which are experiencing population declines due to a number of factors, such as habitat fragmentation and the loss of quality habitat (Treyger, 2019). Research has demonstrated that larger forest tracks typically support more species than smaller forest stands. The amount of forest cover, size of individual forest patches, forest type, and linkages to other patches in a landscape determine their ability to support wildlife species which depend on them, including area-sensitive and edge-intolerant species. This is particularly true for mammals and forest interior birds that require extensive, contiguous forests (Environment Canada, 2004). Ongoing development is resulting in the fragmentation of privately held forest cover habitats that connect publicly managed open space. If these trends continue, New York's future forest ecosystems will have a higher proportion of isolated forest patches that will be less connected across the landscape. Large blocks of core forest also play an important role by providing 'source' populations of plants and animals that can repopulate nearby smaller patches of habitat after disturbance events (NYSDEC, 2011).

In partnership with the NYNHP, The Nature Conservancy conducted an analysis to identify matrix forest blocks, which were defined as large contiguous areas whose size and natural condition allow for the maintenance of ecological processes, embedded large and small patch communities, and embedded species populations. The goal of the matrix forest selection was to identify viable examples of the dominant forest types that could serve as critical source areas for all species requiring interior forest conditions or associated with the dominant forest types. The analysis also identified linkage zones, which represent the least cost paths for forest species traveling between matrix forest blocks. Matrix occurrences are bounded by fragmenting features such as roads, railroads, major utility lines, and major

shorelines. Tier 1 occurrences represent the best examples of viable matrix forest, while Tier 2 occurrences are also viable matrix occurrences, but are not needed to meet representation goals for the portfolio (i.e., are considered "alternates").

The Iroquois matrix forest block is a Tier 1 forest occurrence that encompasses the Iroquois National Wildlife Refuge and the Oak Orchard and Tonawanda Wildlife Management Areas and overlaps southern portions of the Facility Site. As the only matrix forest block within a 5-mile radius of the site, the Iroquois block accounts for 31,012 acres, 1,769 (6%) of which overlap the Facility Site. Most of the Facility Site also lies within the linkage zone that connects the Iroquois matrix forest block with the Sandy Creek forest block, a Tier 2 occurrence approximately 12 miles northeast of the Facility Site (The Nature Conservancy, 2012). However, as described below, a desktop analysis of the 2016 National Land Cover Database shows that only approximately 4% of the Facility Site can be described as part of a core forest block. In addition, analysis of ecological communities at the site based on recent (i.e., 2020) aerial imagery suggests that only about 7% of the Facility Site is forested (see Section 4.5.3 for more information). The analysis of NLCD data and recent aerial imagery at the Facility Site suggests that the matrix forest blocks identified by The Nature Conservancy may not be an accurate representation of existing conditions.

EDR conducted a desktop analysis to identify core forest blocks (i.e., contiguous areas 150 acres or larger) in the vicinity of the proposed Facility using NLCD from 2016. There are 50 core forest blocks within 5 miles of the Facility Site (see Figure 5). These core forest blocks range in size from approximately 152 acres to 3,867 acres and collectively total 24,118 acres, or approximately 27% of the total land area within 5 miles of the Facility. This analysis included all areas classified as one of the four forest types documented within the NLCD dataset (i.e., deciduous forest, mixed forest, evergreen forest, and woody wetlands). As shown in Table 2, these four cover types together comprise 219.9 acres, or 8% of the Facility Site. However, the values in Table 2 include all forests, regardless of contiguity (e.g., the acreage includes small, isolated woodlots). Approximately 104 acres (4%) of the Facility Site, includes forestland that occurs within three of the core forest blocks identified within 5 miles of the Facility Site. In other words, the percentage of land within the Facility Site comprised of core forest blocks is much lower than in the surrounding area (4% of the Facility Site compared to 27% of the area within 5 miles). This demonstrates that the Facility Site is less susceptible to forest fragmentation impacts than the surrounding area.

4.3.5 Audubon Important Bird Areas

Audubon Important Bird Areas (IBAs) are part of an international avian conservation effort in 130 countries which began in 1996. Within New York State, there are more than 130 IBAs that have been recognized as significant places for birds. To become an IBA, an area must meet one of the following three criteria: 1) be a place where birds congregate in large numbers at one time, 2) be a place that provides habitat for species that are at-risk, or 3) be a place that

supports groups of birds representing certain habitats such as forests, wetlands, grasslands, and shrublands (National Audubon Society, 2020a).

The Iroquois IBA, otherwise known as the Alabama Swamp, encompasses the Iroquois National Wildlife Refuge and the NYSDEC Oak Orchard and Tonawanda Wildlife Management Areas (Figure 3). This is an important site for breeding and migratory waterfowl in springtime, and supports other at-risk species, including the following listed species which were identified by the NYSDEC EAF Mapper as possibly occurring in the Facility Site: pied-billed grebe, least bittern, bald eagle, northern harrier, upland sandpiper, and short-eared owl. At its closest point, this IBA is 0.08 mile from the Facility Site.

4.3.6 Prominent Ridgelines

Prominent ridgelines create physical barriers that can serve to concentrate or funnel wildlife movement. Along with being used as travel corridors by terrestrial mammals, major ridgelines can define avian migration corridors and create thermal updrafts which are used by soaring raptors.

The Facility Site is located within the Ontario Lowlands Ecoregion, and the area within 5 miles of the Facility lacks prominent ridgelines or other significant topographic features. Much of the area is associated with the floodplains of Tonawanda and Oak Orchard Creeks, as well as the Oak Orchard Swamp, and is therefore relatively flat (see Figure 6). The only exception occurs approximately three miles south of the Facility Site, where drumlin geological formations are present (Bryce et al., 2010). However, drumlins are rounded glacial hills that do not represent prominent ridgelines.

4.3.7 Forested Riparian Areas

The riparian area is the area of land located immediately adjacent to streams and rivers. Riparian areas differ from uplands because of high levels of soil moisture, frequent flooding, and a unique assemblage of plants and animals. Wildlife may be permanent residents of the riparian area or occasional visitors that use the area for food, water, or temporary shelter. The importance of a particular riparian area will depend on the surrounding land uses and the vegetation present. For example, in areas of intensive agriculture, forested riparian areas can provide important "islands" or refugia of natural habitat where species that depend on forests for their survival can live and reproduce (Klapproth & Johnson, 2009).

In New York State, mapped NYSDEC streams can be used as a preliminary screening tool to help identify forested riparian areas. There are numerous mapped streams within 5 miles of the Facility Site, including several NYSDEC-protected tributaries of Otter Creek (see Figure 8). Review of aerial imagery confirms that the following streams within 5 miles of the Facility Site have riparian corridors that are forested, at least in part: Otter Creek, Fish Creek, Oak Orchard Creek, West Branch of Sandy Creek, Jaddo Creek, Manning Muckland Creek, and portions of the Erie Canal. Of those, only tributaries of Oak Orchard Creek, and Fish Creek flow through the Facility Site. Forested riparian

corridors along these streams that flow through a primarily active agricultural landscape may help support in-stream habitat conditions for aquatic life as well as providing habitat and travel corridors for terrestrial species that prefer forest and edge habitat.

4.3.8 Caves and Mines

Large numbers of cave-dwelling bats now use abandoned subterranean mines as regular roosting sites. Like caves, abandoned mines offer bats the advantage of a stable microclimate, reduced risk from predation and disturbance, and protection from adverse weather. Hard-rock mining provides structures that cave-dwelling bats find attractive for roosting (Belwood & Waugh, 1991). There are no known caves or mines within the Facility Site. However, NYSDEC's downloadable mining database contains records of 19 mines within 5 miles of the Facility Site boundary (see Figure 7). Of these, 14 are sand and gravel mines, two are sandstone mines, one is a dolostone mine, one is a glacial till mine, and one is a gypsum mine. All of these are surface mines, except the gypsum mine (owned and operated by US Gypsum Co., and named the Oakfield Mine), which is active and operates underground (NYSDEC, 2020b, 2020c). This mine is located 4.5 miles south of the Facility Site and likely does not provide habitat for cave-dwelling bats as an active mine. As noted in Section 2.0, no state or federally listed bat species have been documented in the vicinity of the Facility Site.

4.4 GEOGRAPHICAL, TOPOGRAPHICAL, OR OTHER PHYSICAL FEATURES WITHIN FIVE MILES

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(iv) Geographical, topographical, and other physical features within five (5) miles of the facility, interconnections, connecting lines, and access roads.

Migrating raptors and other soaring birds tend to concentrate along linear ridges, which create updrafts or thermals that raptors use to fly long distances with minimal exertion (Berthold, 2001). As discussed above in Section 4.3.6 there are no ridgelines or topographical features within 5 miles that would function to funnel or concentrate birds and bats. Other geographical and physical features within 5 miles are discussed below.

4.4.1 Geographical Features

Every spring and fall, millions of birds and bats migrate through the Great Lakes region as they travel between their wintering and breeding grounds. The Facility Site is located within the Atlantic Flyway, a major north-south route for migratory birds that encompasses much of eastern North America. The Atlantic Flyway is home to a wide variety of ecosystems, as well as more than a third of the human population of the United States (National Audubon Society, 2020b). On a smaller scale, birds and bats often follow migration corridors. The migration corridor system is not well understood, but areas near Great Lakes shorelines are known to host concentrated movements of birds and bats. The Great Lakes can act as barriers to migrating birds and bats because they are devoid of safe places to land and require substantial energy to cross. Conversely, shorelines concentrate migrants by providing the last refuge near a

geographic obstacle and are likely used for navigation (USFWS & USGS, 2012; Heist et al., 2018a). A radar study conducted by the USFWS and partners quantified this effect by using two avian radar units to compare migration patterns at shoreline and inland sites along the eastern shoreline of Lake Michigan. Shoreline activity was 27% greater than inland activity over all time periods, and 132% greater during the hour surrounding dawn (Heist et al., 2018b).

The NYSDEC has also identified large river corridors (e.g., the Hudson, St. Lawrence) as features that can host concentrated movements of migrating birds and bats (NYSDEC, 2016). There are no Great Lakes shorelines or large river corridors within 5 miles of the Facility Site.

4.4.2 Other Physical Features

As described in Section 4.3.6, no prominent ridgelines exist within five miles of the Facility. Other physical features in the vicinity of the Facility include the Oak Orchard Swamp where the Iroquois National Wildlife Refuge and Oak Orchard Wildlife Management Area are located, and the Village of Medina, approximately 3.5 miles northwest of the Facility Site.

4.5 MAPPED WETLANDS, STREAMS, STATE FORESTS, PARKS, AND LAND USE

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(v) National Wetlands Inventory (NWI) and NYSDEC mapped wetlands, streams, waterbodies, state forests, parks, land use, and other available information relevant to siting the facility.

4.5.1 Mapped Wetlands, Streams, and Waterbodies

The Facility Site is located entirely within the Oak Orchard-Twelvemile Hydrologic Unit (04140202), which occupies approximately 649,287 acres (1,015 square miles). Most of the surface hydrology within the Facility Site is generated by precipitation and surface water run-off from adjacent land. Total annual precipitation in the vicinity of the Facility Site averages 37.26 inches at the nearby Medina, NY weather station (NOAA, 2020).

National Wetlands Inventory (NWI) mapping indicates the presence of 67 wetland communities within the Facility Site, totaling 178 acres (see Figure 8). Forested/shrub wetlands are the dominant community types mapped on site, totaling approximately 139 acres. Other NWI-mapped communities within the Facility Site include emergent wetland communities (6 acres), open water ponds (1 acre), and riverine wetlands (32 acres, see Figure 8).

New York State Freshwater Wetlands maps indicate that portions of five wetlands regulated under Article 24 of the Environmental Conservation Law occur within the Facility Site (see Figure 8). Three of these are Class III wetlands (KN-4, KN-8, and KN-10), while one is a Class II wetland (KN-7), and the remaining wetland is a Class I wetland (KN-3). Based on available NYSDEC stream classification mapping, the Facility Site includes several branches of two Class C streams; (847-673 and 847-687) (see Figure 8).

According to Federal Emergency Management Agency map services, no portion of the Facility Site is located within a mapped floodplain.

4.5.1.1 Wetland and Stream Delineations

EDR was retained by the Applicant to identify all wetlands and streams within the Facility Site. Wetland and stream delineations took place between September 23 and November 19, 2020. During the delineations, EDR identified 77 wetlands totaling 224 acres (see Figure 9). EDR also identified 54 perennial, intermittent, and ephemeral streams totaling 85,491 linear feet.

Wetland boundaries were identified following the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the methodologies presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (USACE, 2012) and the *New York State Freshwater Wetland Delineation Manual* (NYSDEC, 1995). Attention was given to the identification of potential hydrologic connections between wetlands and areas that could influence their jurisdictional status. In accordance with the Cowardin et al. (1979) classification system, the waters delineated at the proposed Facility consist of the following community types: open water wetland (POW), palustrine emergent wetland (PEM), palustrine forested wetland (PFO), palustrine scrub-shrub wetland (PSS), perennial stream (R3), intermittent stream (R4), ephemeral stream (R6). Many wetlands identified contained more than one community type. Data regarding stream gradient (gentle, moderate, or steep), stream bank and channel width, water depth, stream bed substrate, in-stream cover, and biological indicators were also collected.

Of the wetlands and streams identified in the field, all intermittent and perennial streams on site appear to have surface water connections to other waters of the United States (WOTUS), and therefore, are likely to be considered jurisdictional by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. In addition, five delineated wetlands are expected to fall under state jurisdiction pursuant to Article 24 due to their total size and/or proximity to NYSDEC mapped freshwater wetlands. None of the streams at the Facility Site are mapped as protected streams, and therefore are not anticipated to be protected under Article 15 of the Environmental Conservation Law.

Wetland delineation shapefiles and cursory information (i.e., wetland and stream tables with location and cover information) was submitted to ORES initially on December 2, 2020. A detailed wetland and stream delineation report, including figures and data sheets, was submitted to NYSDEC and ORES on January 27, 2021.

4.5.2 State Forests and Parks

There are no state parks or state forests within 5-miles of the Facility Site. The closest state parks are Lakeside Beach State Park, 12.4 miles north of the Facility, and Darien Lakes State Park, located approximately 15.6 miles south west of the Facility Site. The closest state forest is a Sonyea State Forest, located approximately 39.5 miles southeast of the Facility Site near Letchworth State Park.

4.5.3 Land Use/Land Cover

The Facility Site is primarily composed of agricultural land that is actively managed to produce cultivated row crops, and to a lesser extent, used for hay production. Woody wetlands also comprise a significant land cover within the Facility Site. According to USGS National Land Cover Dataset (NLCD) from 2016, cultivated crops represents approximately 87% of the Facility Site, while pasture/hay represents approximately 2%, and woody wetlands represent approximately 7% (see Figure 10). The remaining lands can be classified as mixed or evergreen forest, open, low, or medium intensity developed land (Impervious surfaces = 50% to 79% of the total cover)., emergent herbaceous wetlands, and open water (USGS, 2019). Table 2 summarizes the NLCD land cover types found within the Facility Site.

Table 2. Land Cover Classes Found within the Facility Site

Land Cover Class	Acres	Percent Cover
Cultivated Crops	2,332.0	87.4
Woody Wetlands	187.5	7.0
Pasture/Hay	49.1	1.8
Developed, Open Space	37.7	1.4
Deciduous Forest	29.5	1.1
Developed, Low Intensity	23.1	0.9
Emergent Herbaceous Wetlands	6.8	0.3
Mixed Forest	2.9	0.1
Developed, Medium Intensity	0.6	<0.1
Open Water	0.4	<0.1
Evergreen Forest	0.0	0.0
Total	2,669.6	100.0

Source: USGS, 2019.

Ecological communities within the Facility Site were also organized into the more specific community descriptions based on those provided in *Ecological Communities of New York State* (Edinger et al., 2014). EDR identified and mapped each plant community using a combination of desktop review of aerial imagery (NYSDOP, 2020) and data collected during on-site biological field surveys and assessments conducted from 2019 through 2021 (e.g., wetland delineations, habitat assessments, wintering raptor surveys, and breeding bird surveys). Table 3 shows the ecological communities identified within the Facility Site.

Table 3. Ecological Communities within the Facility Site

Community	Acres	Percent Cover
Row Crops - Corn	1,416.3	53.1
Row Crops – Soybeans	638.8	23.9
Fallow Field	236.9	8.9
Deciduous Forest	200.1	7.5
Successional Shrubland	94.9	3.6
Developed/Disturbed	26.2	1.0
Hay Field	19.8	0.7
Row Crops – Squash	19.7	0.7
Open Water/Wetland	9.7	0.4
Pasture	3.3	0.1
Successional Old Field	2.9	0.1
Total	2,668.5	100.0

Ecological communities found at the Facility Site are generally common in the vicinity of the Facility and within New York State. The Facility Site consists of active agricultural lands devoted to the production of corn, soybeans, and squash, as well as hay fields, and pasturelands. Other ecological communities include successional field, successional shrubland, deciduous forest, and open water features and wetlands. These communities are described in greater detail below and shown in Figure 11.

Active Agricultural Lands

Combined, active agricultural lands in the Facility Site represent approximately 79% (2,098 acres) of all lands on site. The primary agricultural crops are corn and soybeans, with much more limited occurrences of squash, hay, and pastureland. In some locations, emergent wetlands were observed within small portions of agricultural lands. Emergent wetlands were characterized by the dominance of erect, rooted herbaceous wetland plants and evidence of persistent inundation or saturation. Agricultural lands are typically heavily managed, and row crop fields are not considered quality habitat for most wildlife species, including grassland birds.

Fallow and Successional Fields

According to the USDA, fallow fields, also known as idle cropland, include lands that are in cover crops and/or soil-improvement crops and lands that may not be harvested or used in a given year due to physical and/or economic reasons (USDA, 2019). As defined by Edinger et al. (2014), a successional old field is a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed for farming and/or development. This includes fields that are mowed at infrequent intervals (typically less than once per year), which promotes the reproduction of characteristic successional old field species, such as goldenrods (*Solidago* spp.), asters (*Symphiotrichum* spp.), and various upland grasses. Together, fallow fields and successional old fields comprise approximately 9% (239.8 acres)

of the Facility Site. These communities, along with active pasturelands and hay fields, can provide habitat for grassland birds. Within the Facility Site, this community is located primarily along roadsides and adjacent to active agricultural fields.

Deciduous Forest

The Facility Site includes a variety of primarily deciduous forest communities, which are present in approximately 7.5% (200.1 acres) of the area. Common forest types found in the Facility Site include successional northern hardwoods, Appalachian oak-hickory forest, and red maple-swamp white oak swamp, as defined in Ecological Communities of New York State (Edinger et al., 2014). These forests occur throughout the Facility Site on hillsides, hedgerows and in woodlots interspersed among agricultural fields. Common tree species in the deciduous forest communities within the Facility Site include red maple (*Acer rubrum*), ash (*Fraxinus americana, F. pennsylvanica*), red oak, shagbark hickory (*Carya ovata*), and swamp white oak (*Quercus bicolor*), among others. The understory is comprised of saplings of these species, dogwoods, multiflora rose (*Rosa multiflora*), arrowwood (*Viburnum dentatum*), wild grape (*Vitis* spp.), sedges (*Carex* spp.), and various ferns, along with other woody and herbaceous plants.

Successional Shrubland

Successional shrubland occurs on sites that have been previously cleared for farming, logging, development, or otherwise disturbed (Edinger et. al., 2014). Within the Facility Site, successional shrublands comprise approximately 3.6% (94.9 acres) of the area. Species observed within this community include dogwoods (*Cornus* spp.), wild grape (*Vitus* sp.), and arrowwood (*Viburnum dentatum*). Other species typically found in this community include raspberries (*Rubus* spp.), choke-cherry (*Prunus virginiana*), staghorn sumac (*Rhus typhina*), and invasive shrubs such as multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), bush honeysuckles (*Lonicera* spp.), and common buckthorn (Edinger et. al., 2014). Scrub-shrub wetlands were occasionally observed within this ecological community type.

Developed/Disturbed

Disturbed/developed land consists of a combination of several "cultural communities" as defined in the *Ecological Communities of New York State* (Edinger et. al., 2014). Disturbed/developed land occurs throughout the Facility Site, and is characterized by the presence of buildings, paved and unpaved roads, lawns, quarries, or transmission line rights-of-way. Vegetation in these areas is generally either lacking or highly managed (e.g., mowed lawns or routinely maintained rights-of-way). Developed/disturbed lands comprise approximately 1% (26.2 acres) of the Facility Site.

Open Water and Wetlands

Open water features and emergent wetlands are present at the Facility Site. Open water features include streams, ponds, farm ponds, and open water wetlands. Forested and scrub-shrub wetlands have been included in the deciduous

forest and successional shrubland community type descriptions, above. Emergent wetlands included in this class include large wetland areas that are not intermixed with active agricultural areas and developed or disturbed areas. These communities comprise approximately 0.4% (9.7 acres) of the Facility Site. Although some open waters exist at the Facility, none of the individual features are considered large enough (i.e., greater than 1.5 acres) to support marshland bird populations which frequent the large wetland complexes south of the Facility Site.

4.6 CLIMATE CHANGE MODELING FOR LISTED SPECIES

This section provides information in response to the following requirement of §900-1.3(g)(1):

With respect to NYS threatened or endangered species or species of special concern, the wildlife site characterization shall include:

(vi) A review of National Audubon Society climate change modeling for listed bird species documented in the wildlife site characterization, and review of other climate change models relevant to listed bird species and other wildlife species documented at the facility site, as available.

Climate change is accelerating many threats that challenge rare species and the natural ecosystems they depend on. Consequently, successful conservation strategies will require an understanding of climate change and the ability to predict how it will affect both species and habitats. Birds have been the focus of many studies on the ecological effects of climate change and have also been the subject of a wide variety of correlative models to predict potential future distributions. Data show that birds are responding to recent climate change in a variety of ways, including shifting their breeding and non-breeding ranges to higher latitudes (La Sorte and Jetz, 2010). For example, a National Audubon Society study investigated the center of abundance for North American bird species using CBC data, and found a strong northward shift over the past 40 years. Of the 305 species evaluated, 208 (68%) shifted north. Wetland birds, forest birds, shrub birds, and generalists all had a majority of the species shifting northward, while grassland birds did not (Niven et al., 2009).

4.6.1 National Audubon Society Climate Change Modeling

The National Audubon Society assessed the climate change vulnerability of North American bird species under multiple warming scenarios, ranging from 1.5 degrees Celsius (°C) [2.7 degrees Fahrenheit (°F)] warming, which is considered imminent, to a 3°C (5.4°F) warming, which is expected to occur by 2080-2100. The study found that 389 of 604 (64%) were moderately or highly vulnerable to climate change. However, climate change vulnerability was not evenly distributed across habitats. The most vulnerable groups include Arctic bird species, boreal forest birds, western forest birds, and waterbirds (Wilsey et al., 2019). The National Audubon Society *Survival by Degrees* climate change modeling platform was queried for Orleans County, where the Facility Site is located. Overall results indicate that under a 3°C warming scenario in the summer months, there are 12 high vulnerability species, 41 moderate vulnerability species, 29 low vulnerability species, and 48 stable species whose range may be at risk due to climate change (National Audubon Society, 2021). Table 4 summarizes the climate change vulnerability of the state-listed bird species observed in the vicinity of the Facility Site within the last five years. As this table indicates, most of these listed species are considered stable or of low vulnerability of the effects of climate change.

Table 4. Climate Change Vulnerability of State-listed Bird Species Observed Within the Last Five Years

Species	NYS Status	SGCN Status[1, 2]	Summer[3]	Winter[3]
Cooper's hawk *Accipiter cooperii*	Special Concern	SGCN	stable	low vulnerability
sharp-shinned hawk* *Accipiter striatus*	Special Concern	SGCN	moderate vulnerability	stable
short-eared owl* *Asio flammeus*	Endangered	SGCN-HP	n/a	stable
American bittern *Botaurus lentiginosus*	Special Concern	SGCN	low vulnerability	n/a
red-shouldered hawk* *Buteo lineatus*	Special Concern	SGCN	stable	n/a
black tern *Chlidonias niger*	Endangered	SCGN	low vulnerability	n/a
northern harrier* *Circus cyaneus*	Threatened	SGCN	low vulnerability	stable
horned lark* *Eremophila alpestris*	Special Concern	SGCN	low vulnerability	low vulnerability
peregrine falcon *Falco peregrinus*	Endangered	SCGN	stable	stable
bald eagle* *Haliaeetus leucocephalus*	Threatened	SGCN	low vulnerability	stable
osprey *Pandion haliaetus*	Special Concern	SGCN	stable	n/a
pied-billed grebe *Podilymbus Podiceps*	Threatened	SGCN	stable	stable
vesper sparrow* *Pooecetes gramineus*	Special Concern	SGCN	moderate vulnerability	n/a

[1] SGCN Status refers to status under the Comprehensive State Wildlife Strategy. SGCN = Species of Greatest Conservation Need, SGCN-HP = High Priority Species of Greatest Conservation.
[2] Sources for status include: Cornell Laboratory of Ornithology's eBird; Audubon Christmas Bird Count, Oak Orchard Swamp Count Circle; USGS Breeding Bird Survey, Byron route; The New York Breeding Bird Atlas III.
[3] Source: National Audubon Society, 2021.
*Denotes a species observed during on-site surveys.

With climate change, the ranges of many species will shift farther north into Canada, with much of the current ranges in New York State being lost. For example, moderately vulnerable sharp-shinned hawks and the least vulnerable horned lark are projected to lose up to 55% and 36% of their current summer ranges, respectively, including the entirety of New York State, and gain new territory further north. It should be noted that the vulnerability assessments are not specific to Orleans County or New York State; they cover the full range of each species within North America. This means some species have an overall vulnerability rating that is based of effects not predicted to occur within New York. For example, red-headed woodpeckers are considered a high vulnerability species because they are projected to lose

up to 94% of their current range, disappearing from most of the southern and central U.S. However, this species will gain 33% at the northern edge of its current range, and consequently, may breed more frequently in New York State under the 3°C warming scenario. According to Audubon, short-eared owls do not commonly occur in New York State during the summer months and are not projected to shift into the area under any of the modeled scenarios. Therefore, although these species have moderate vulnerability to climate change range-wide, climate change is not anticipated to impact the range of these species in the vicinity of the Facility Site.

Overall, two of the thirteen state-listed avian species (15%) are considered moderately vulnerable to climate change during the summer months, while none are considered moderately vulnerable to climate change during the winter months. There are no listed avian species in the vicinity of the Facility which are classified by Audubon as highly vulnerable to climate change in either summer or winter. These values are significantly lower than the overall percentage (64%) of North American birds that are moderately or highly vulnerable to climate change, suggesting that the Facility Site's location will minimize impacts to avian species that are particularly vulnerable to climate change.

Of those species classified as moderately vulnerable to climate change, only sharp-shinned hawk and the vesper sparrow are predicted to experience adverse effects within New York State. Both of these species have been observed at the Facility Site during spring breeding bird or winter raptor surveys. Forested habitat that could support nesting and foraging sharp-shinned hawks is present within and adjacent to the Facility Site; approximately 7.5% of the Facility Site is currently comprised of forestland. Limited potential habitat for vesper sparrow also occurs in the area; pasture/hay cover comprises less than 2% of the Facility Site. Although vesper sparrow does not occur in New York State in winter and are not anticipated to shift into the state under the modeled climate change scenarios for this season, some loss of summer habitat range is anticipated in New York State, specifically in the western New York Region according to the Audubon's *Survival by Degrees* climate change modeling platform.

4.6.2 New York Natural Heritage Program Vulnerability to Climate Change Assessment

The NYNHP conducted a vulnerability assessment for 119 of the 366 animals designated as SGCN in New York State using NatureServe's Climate Change Vulnerability Index (CCVI). Species were included in the assessment that represent the range of taxonomic groups that are 1) designated as SGCN, 2) might be susceptible to climate change, 3) are indicators of vulnerability of other species in similar habitats, and 4) have sufficient data available to allow conducting the assessment. The CCVI determines vulnerability to climate change based on both exposure and sensitivity. Of the 13 state-listed species observed in the vicinity of the Facility Site within the last five years (see Table 4), only the black tern was evaluated in the NYNHP vulnerability assessment. Black tern was classified as not vulnerable/presumed stable, meaning that the abundance and/or range extent of this species will not substantially change (increase/decrease) by 2050, although the actual range boundaries may change (Schlesinger et al., 2011). As described above in Section 4.2.2, there is not suitable habitat for this species at the Facility and no direct impacts are

anticipated. As such, the proposed Facility will not contribute to potential impacts from climate change and other threats to the black tern.

5.0 CONCLUSIONS

In accordance with the requirements of the Section 94-c permitting process, publicly available data sources were queried to identify wildlife species that have the potential to be present within the Facility Site. This review suggests that the Facility Site is likely to include a wildlife community dominated by relatively common species typically found in agricultural and forest habitats. The results of the database queries are summarized in a Wildlife Species List (Appendix C). This list includes six state-listed threatened or endangered species and seven SGCN species that have been documented in the vicinity of the Facility Site within the last five years: bald eagle, short-eared owl, peregrine falcon, black tern, pied-billed grebe, northern harrier, Cooper's hawk, sharp-shinned hawk, horned lark, red-shouldered hawk, vesper sparrow, osprey, and American bittern. Most of these species were recorded during BBSs, BBAs, or CBCs, which have large survey areas that extend far beyond the Facility Site boundaries (see Figure 3), and in some cases, encompass different habitats that do not occur within the Facility Site (e.g., extensive marshlands). However, seven of these species (bald eagle, horned lark, vesper sparrow, sharp-shinned hawk, red-shouldered hawk, northern harrier, and short-eared owl) have been confirmed at the Facility Site during site-specific surveys for spring breeding birds and wintering raptors.

Evaluation of habitat suitability for the state-listed species documented in the vicinity of the Facility Site within the last five years resulted in the determination that potential habitat may exist within the Facility Site for three of the six species listed as threatened or endangered, and for two of the seven species listed as special concern: bald eagle, horned lark, northern harrier, short-eared owl, and vesper sparrow. There is no suitable habitat within the Facility Site for the remaining eight species (i.e., American bittern, black tern, Cooper's hawk, osprey, pied-billed grebe, peregrine falcon, red-shouldered hawk, and sharp-shinned hawk).

As described in Section 4.3, several landscape features and resources are present within 5-miles of the Facility Site that could attract wildlife or provide habitat for rare species, including: the Iroquois National Wildlife Refuge, Tonawanda, and Oak Orchard Wildlife Management Areas, NYSDEC Grassland Focus Area 7, 50 blocks of core forest, an Audubon Important Bird Area, and forested riparian areas. However, as mentioned previously, of the 13 state-listed threatened, endangered, or SGCN species identified through publicly available data sources within the last five years, only seven were observed at or near the Facility Site during on-site surveys (i.e., breeding bird and wintering raptor surveys), and analysis of habitat conditions within the Facility Site suggests that this location would not provide suitable habitat for the pied-billed grebe, black tern, peregrine falcon, osprey, and American bittern, all of which require marshland habitat not present where the Facility is proposed.

Analysis of publicly available data and results of on-site surveys conducted to date suggests that the Facility Site's location is less sensitive for marshland birds than other places within 5 miles of the site (i.e., public lands and landscape resources overlapping Oak Orchard Swamp). In addition, although suitable grassland habitat is present within the Facility Site, areas within Grassland Focus Area 7 and other public lands in the vicinity provide significant, higher-quality habitat for these species (i.e., not active agricultural row crop lands which comprise nearly 70% of the Facility Site). In addition, approximately 4% of the Facility Site lies within a core forest block, compared to 27% of the area within 5 miles of the Facility Site, indicating that forest cover is relatively low within the Facility Site compared to the surrounding area. There are several small, segmented forested riparian areas primarily associated with creeks within the Facility Site that likely provide habitat for a range of wildlife species, but such corridors make up a small portion of the site and appear to be relatively common in the area surrounding the Facility Site. The state-listed threatened or endangered species documented in the area are also not considered particularly vulnerable to the range-shifting effects of climate change. Consequently, based on the findings of this Wildlife Site Characterization Report, the proposed Facility Site appears to present limited risk to state-listed species.

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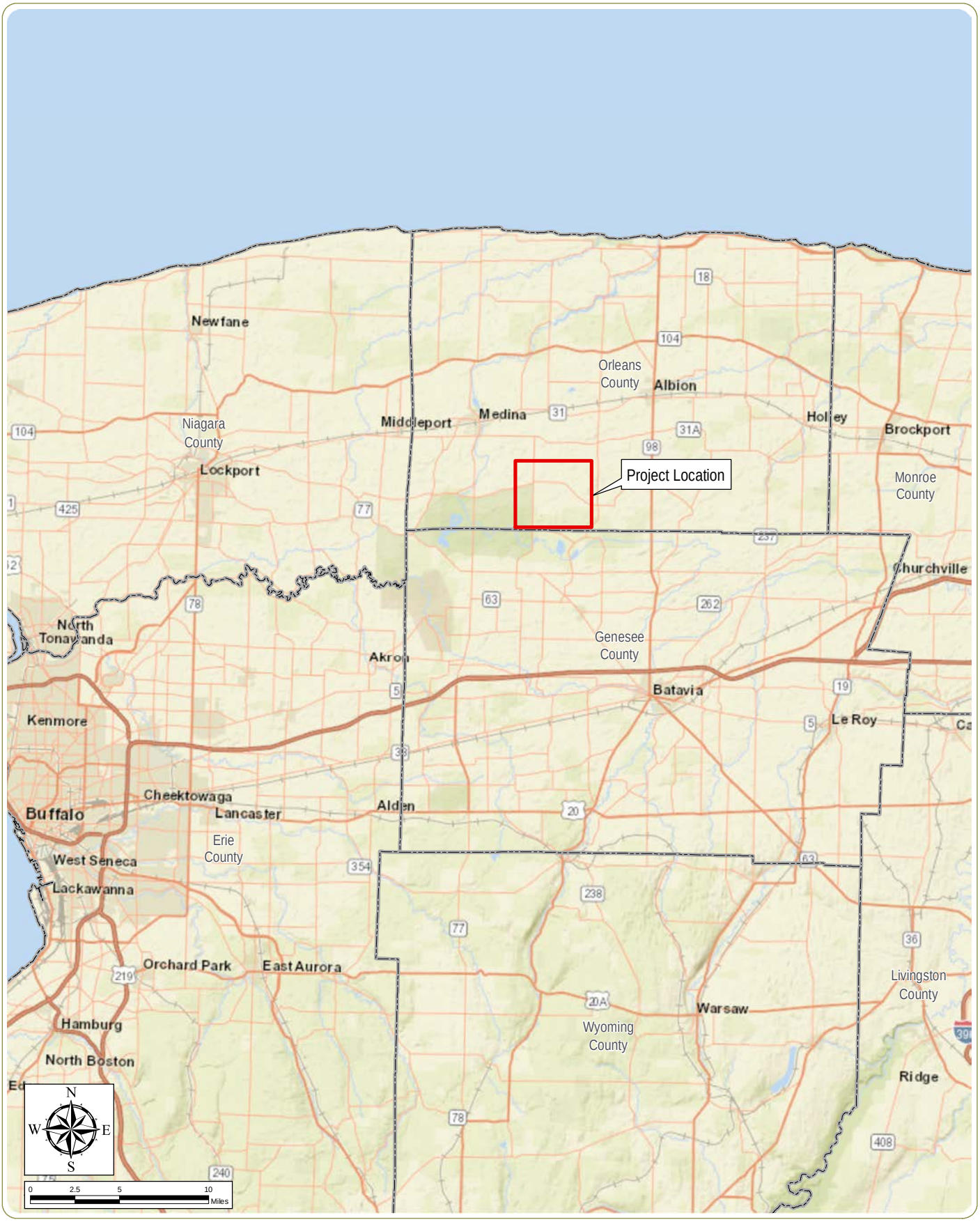
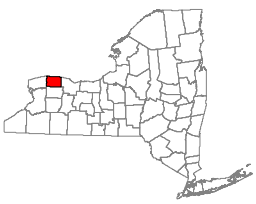
Figures



Orleans Solar

Towns of Shelby & Barre, Orleans County, New York

Figure 1: Regional Project Location



Notes: 1. Basemap:ESRI ArcGIS Online "World Shaded Relief" map service. 2. This map was generated in ArcMap on January 25, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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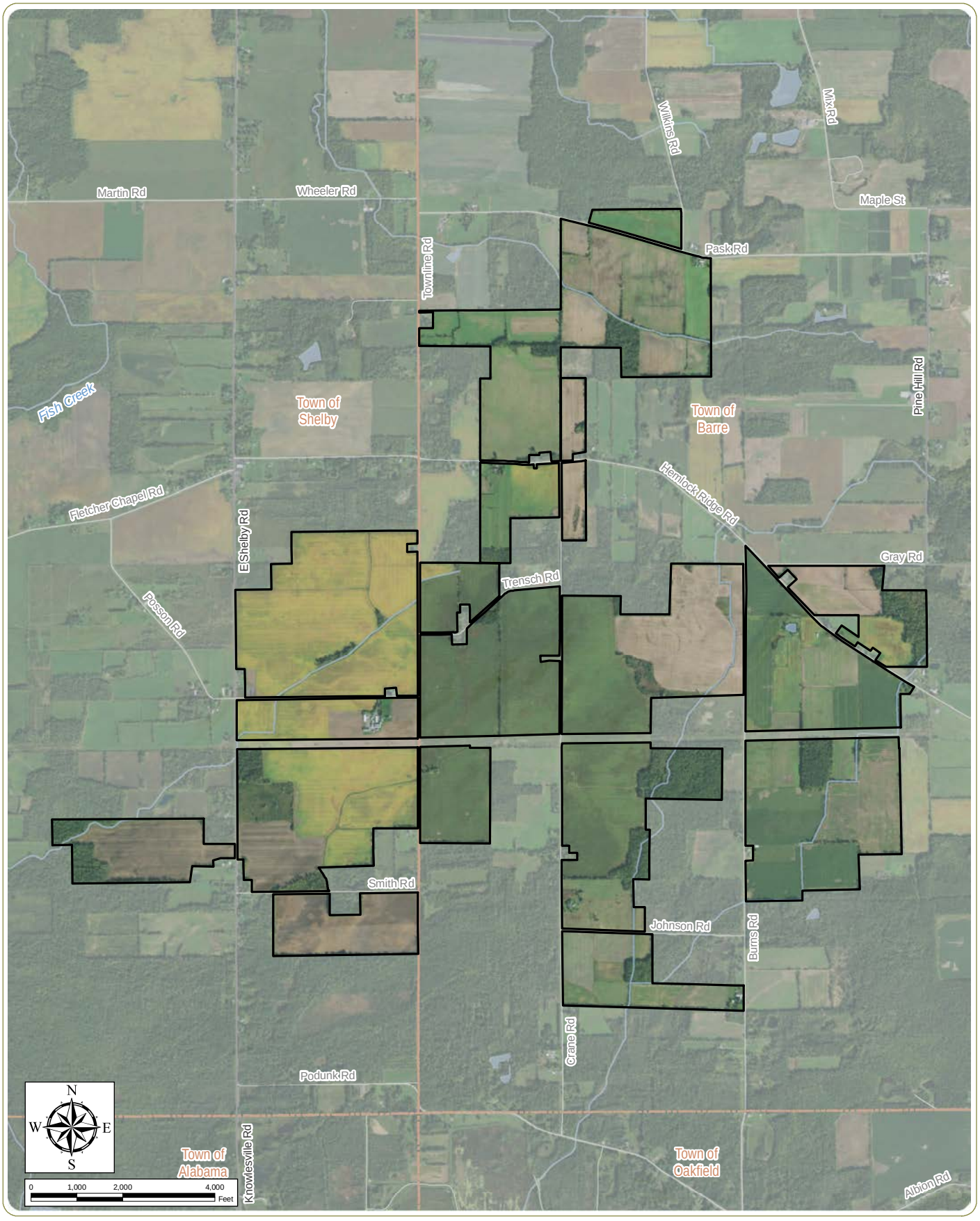

Orleans Solar

Towns of Shelby & Barre, Orleans County, New York

Figure 2: Facility Site

Facility Site

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on January 25, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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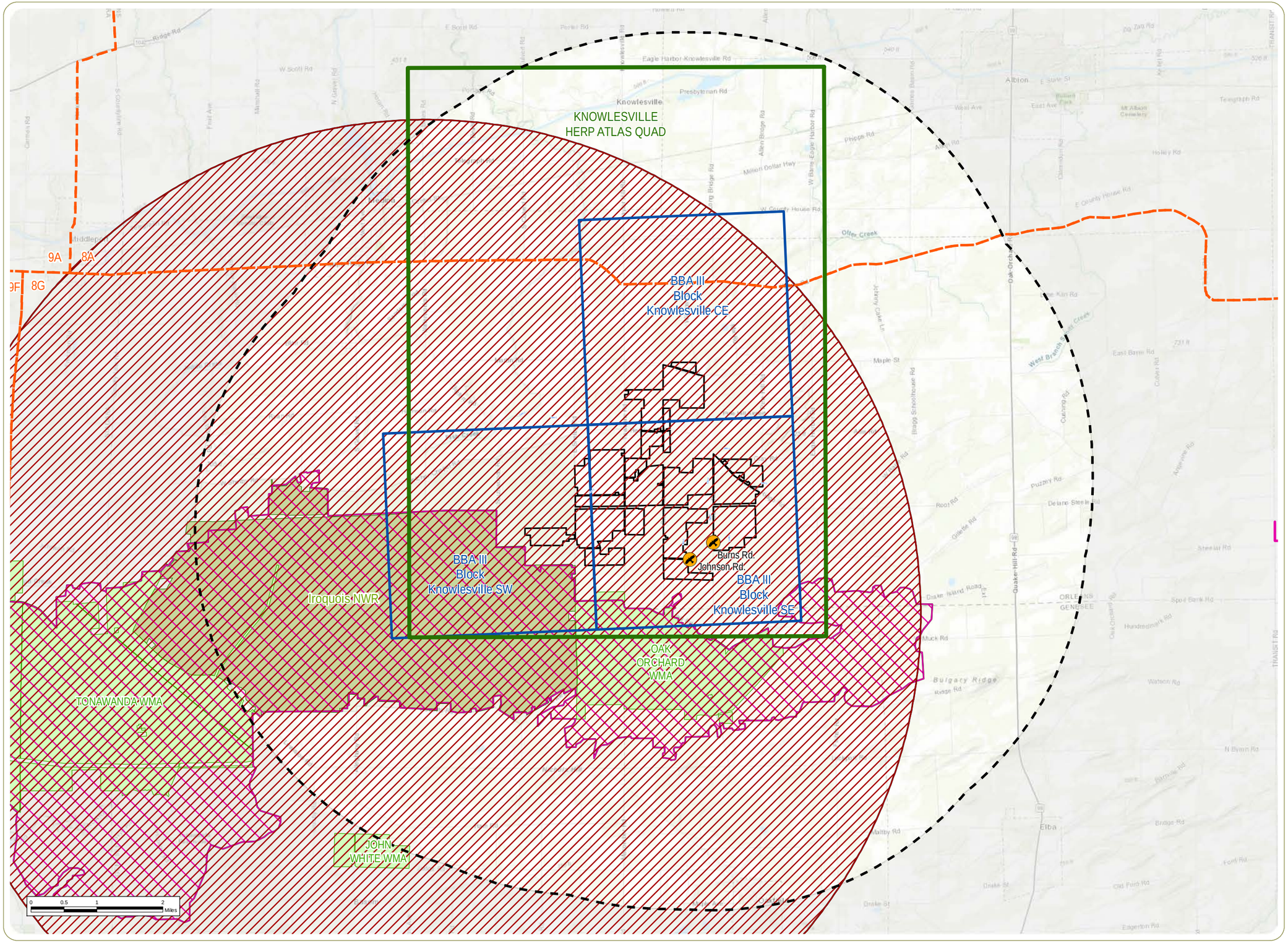
Orleans Solar

Towns of Shelby & Barre, Orleans County, New York

Figure 3: Ecologically Sensitive Resources and Publicly Available Data Sources



- eBird Hotspot
- USGS BBS Route
- NYS Wildlife Management Unit
- Herp Atlas Quad
- BBA III Block
- Christmas Bird Count Count Circle
- Audubon Important Bird Area
- NYSDEC Land
- National Wildlife Refuge
- Facility Site
- 5-Mile Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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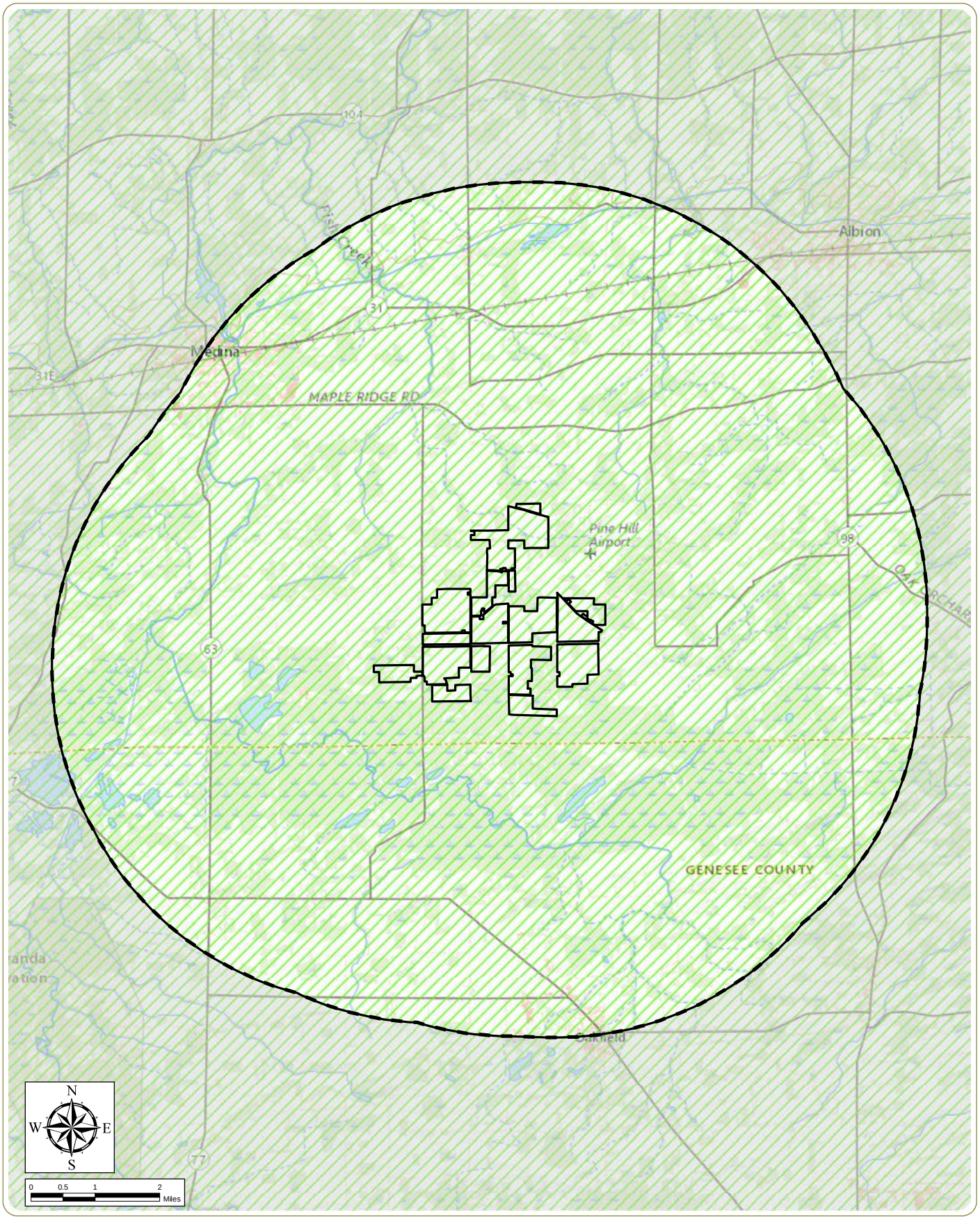


Orleans Solar

Towns of Shelby & Barre, Orleans County, New York

Figure 4: Grassland Focus Areas

NYSDEC Grassland Focus Areas

Facility Site

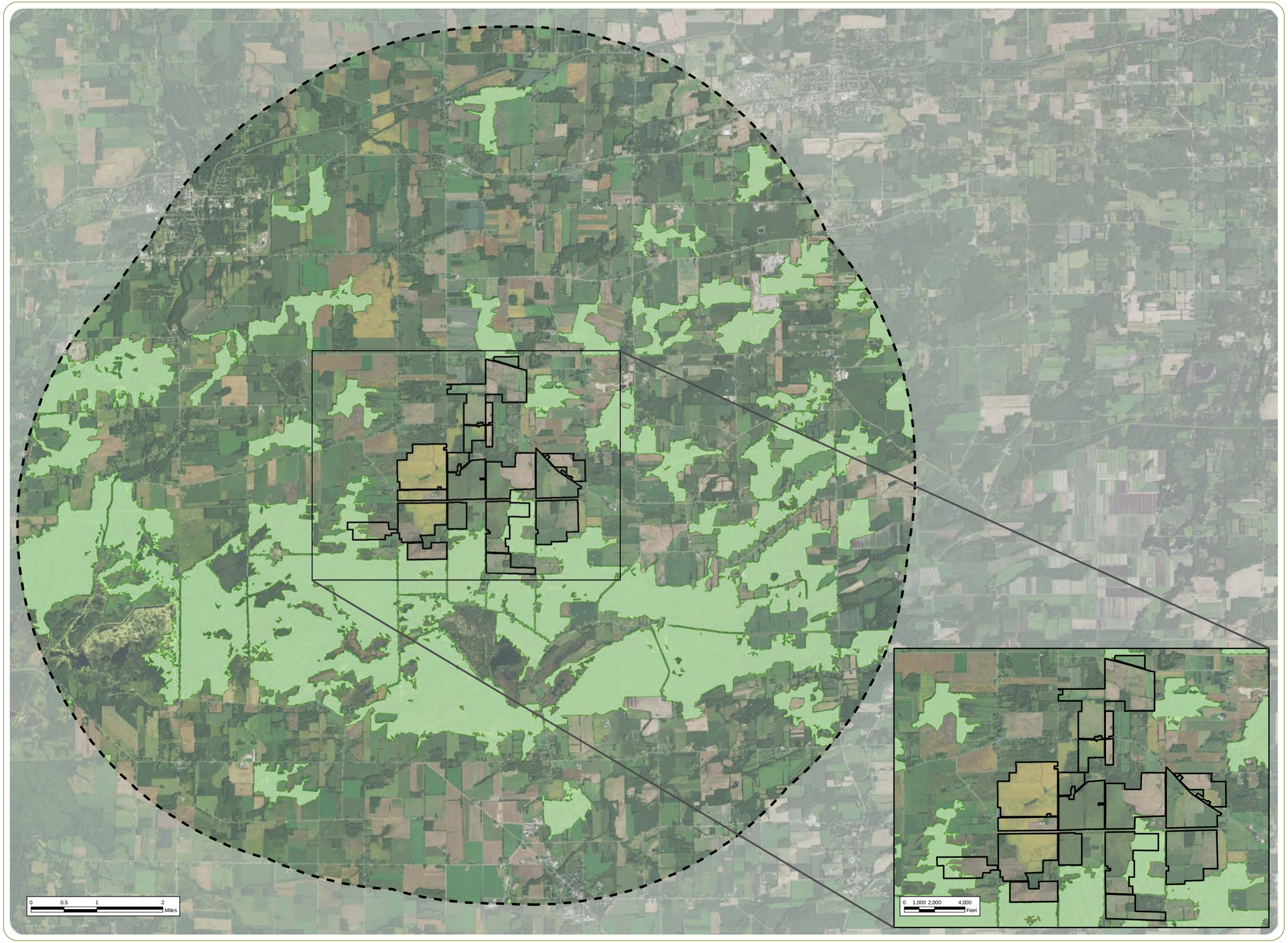
5-Mile Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "USA Topo Maps" map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Orleans Solar

Towns of Shelby & Barre,
Orleans County, New York

Figure 5: Core Forest Blocks



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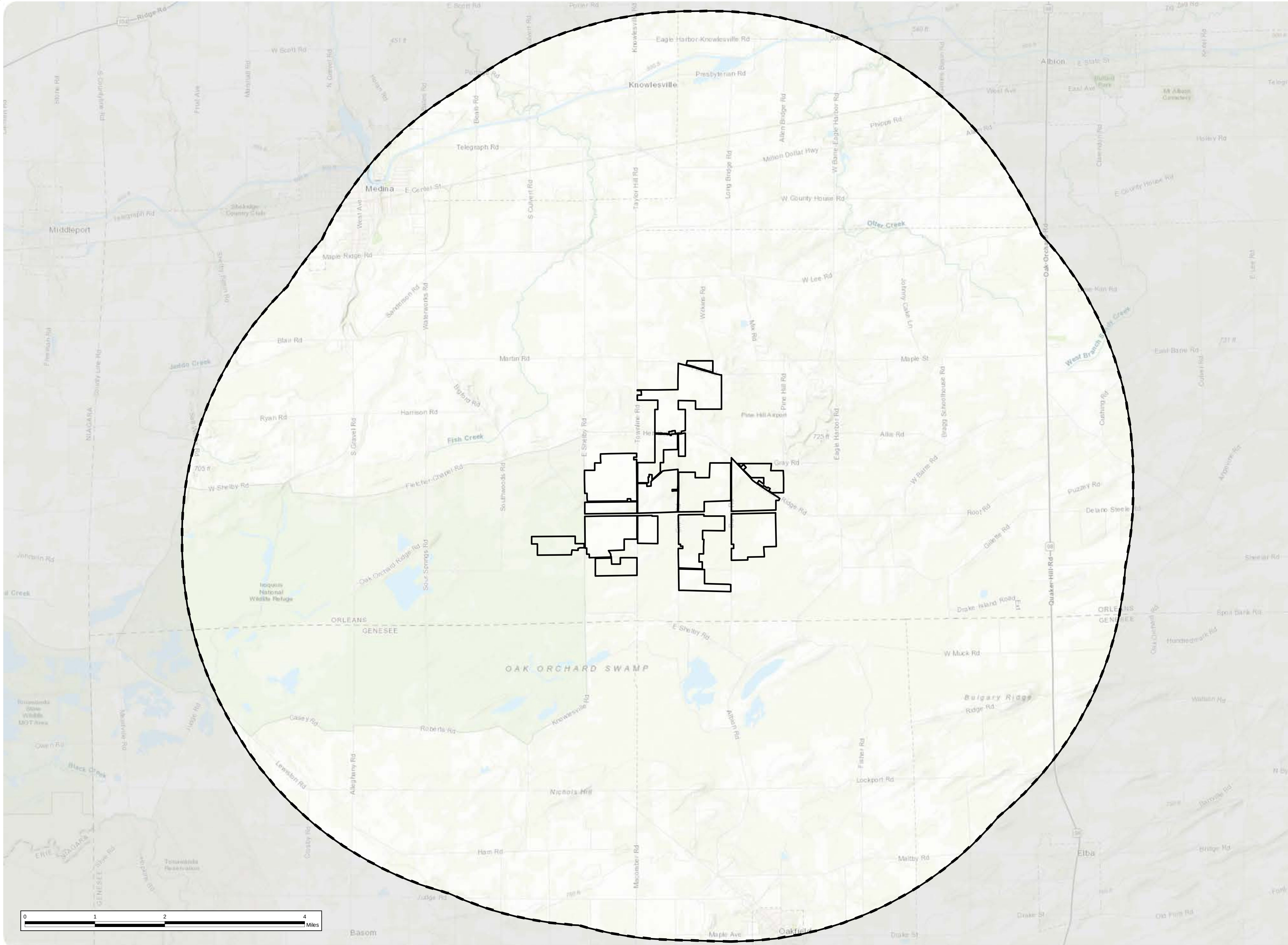

Orleans Solar

Towns of Barre and Shelby, Orleans County, New York

Figure 6: Topography

Facility Site

5-Mile Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "USA Topo Maps" map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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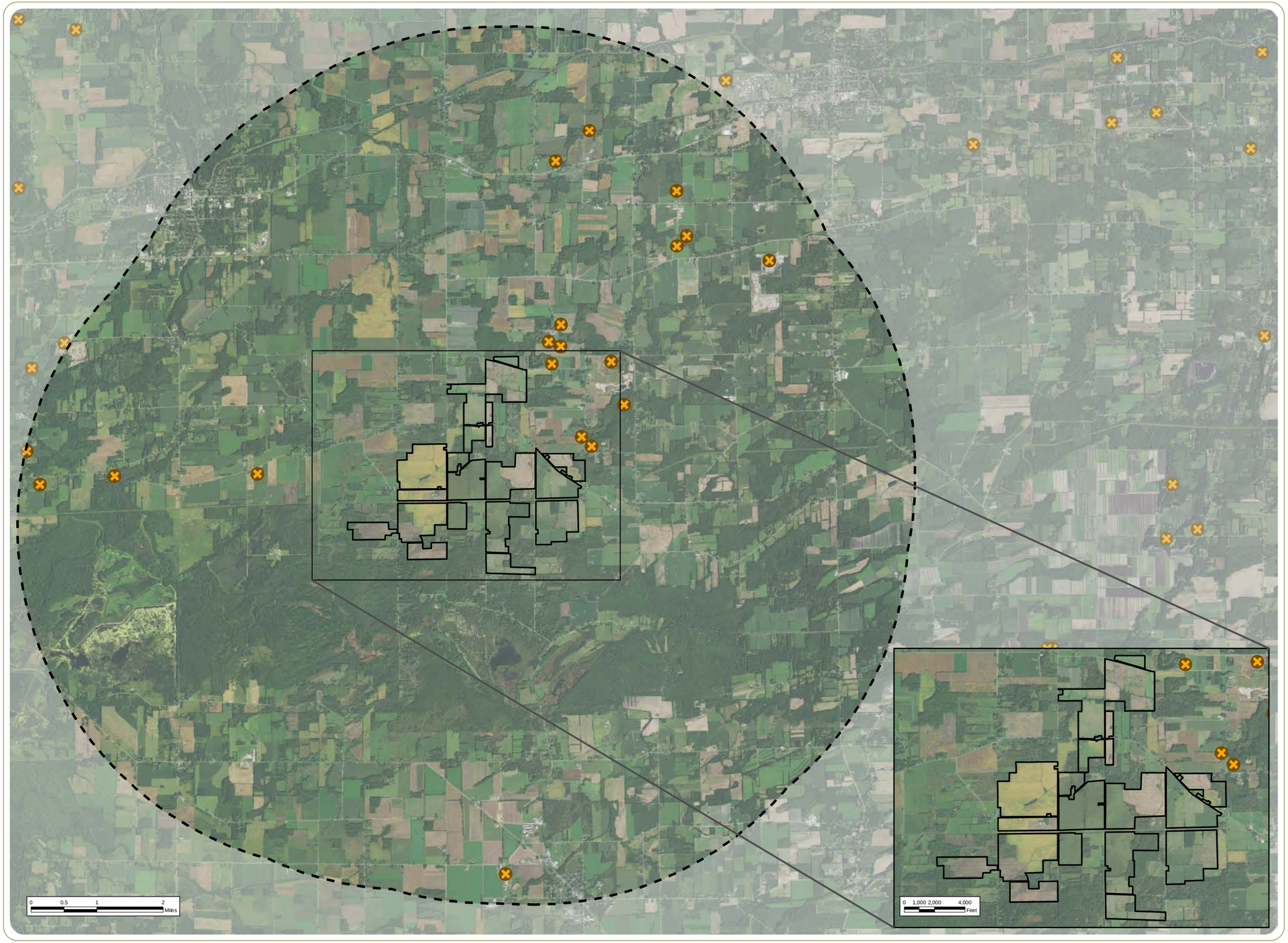
Towns of Shelby & Barre,
Orleans County, New York

Figure 7: Mines



Mines
Facility Site
5-Mile Study Area

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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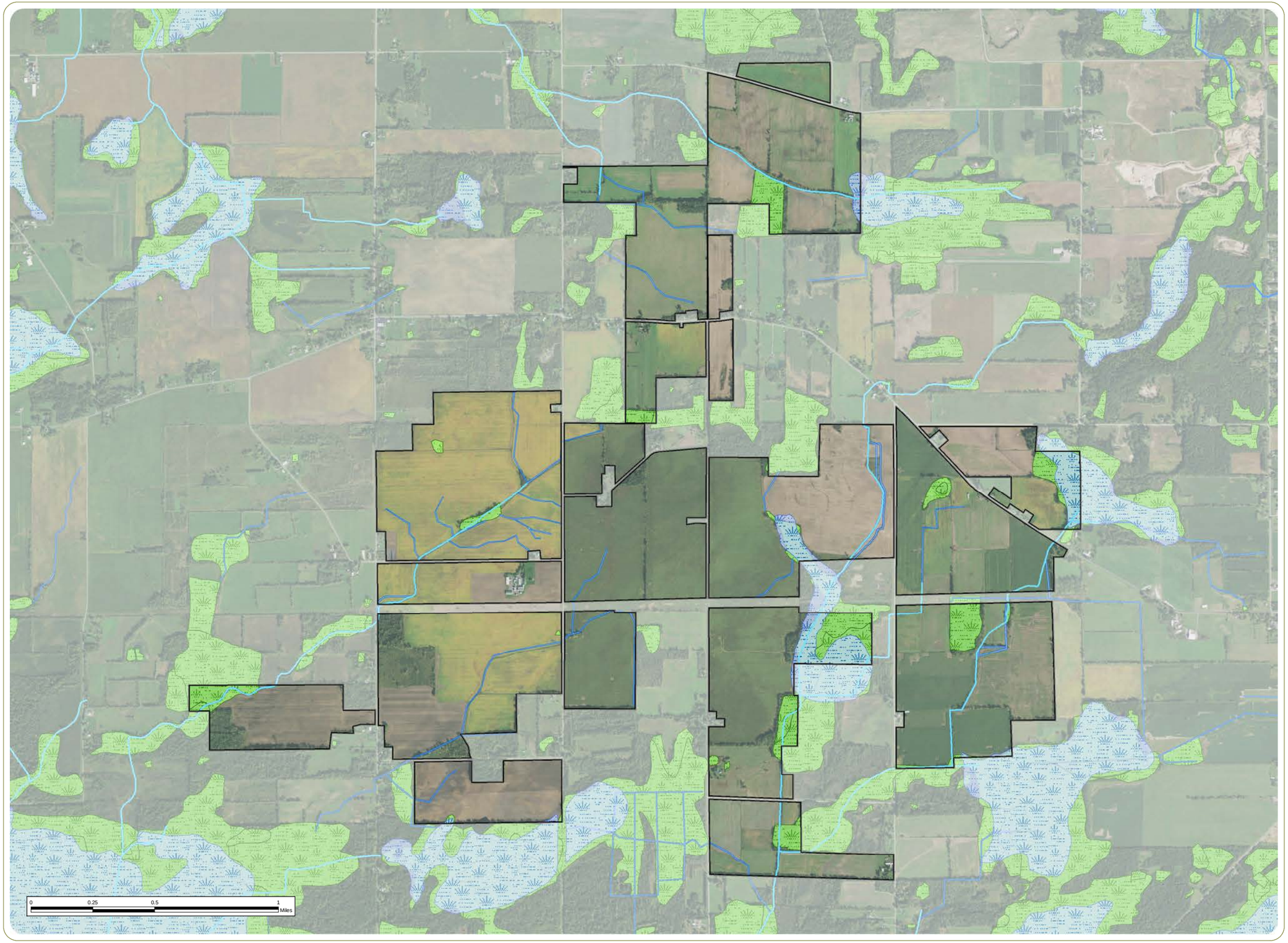
Towns of Shelby & Barre,
Orleans County, New York

Figure 8: Mapped
Wetlands and Streams



NYSDEC Stream Classification
- Class A, B, C(TS), or C(T) Stream
- Class C or D Stream
- NYSDEC Mapped Wetland
- NWI Mapped Wetland
- NWI Mapped Lake/Pond/Riverine
- Facility Site

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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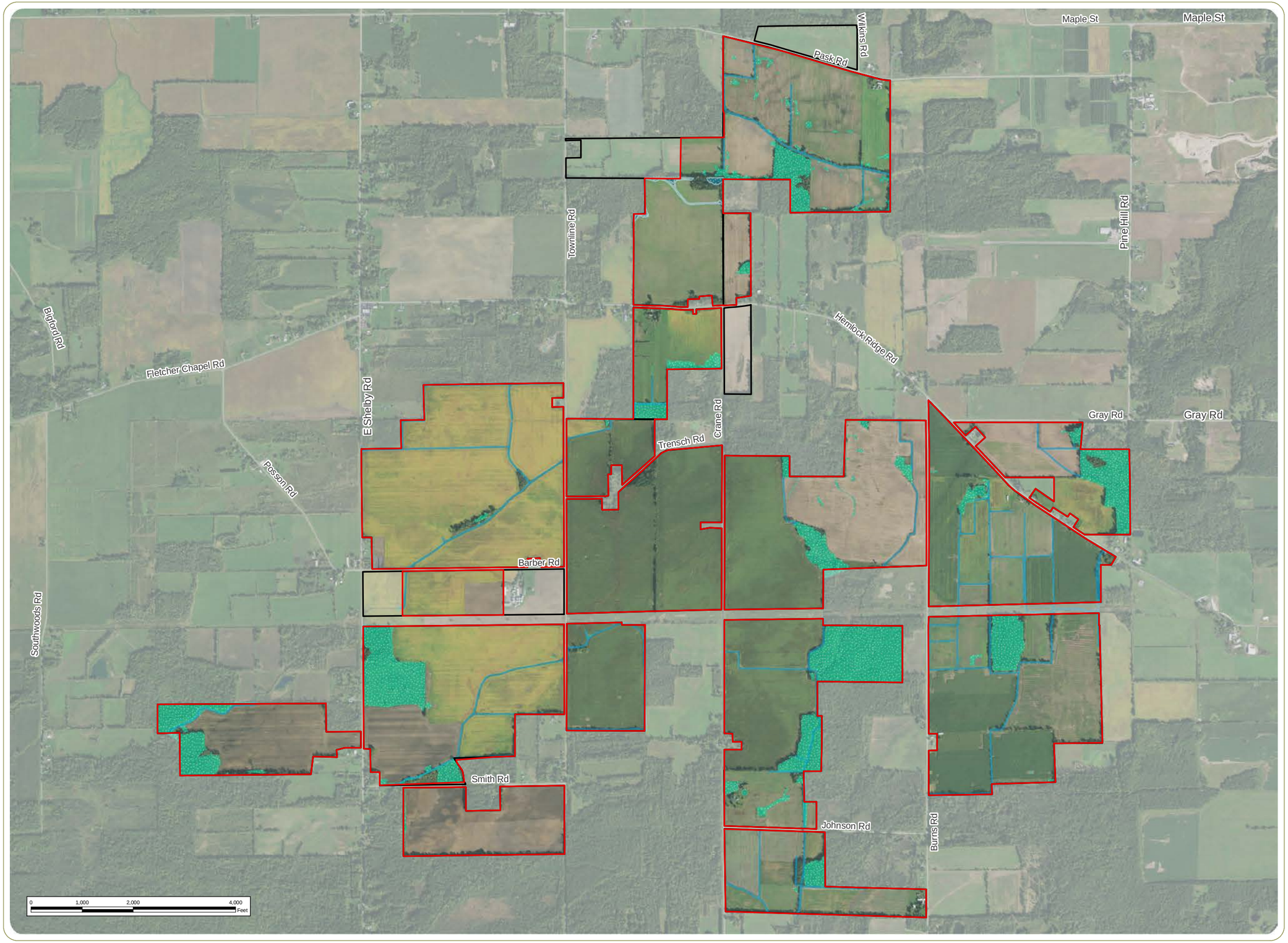
Orleans Solar

Towns of Shelby & Barre,
Orleans County, New York

Figure 9: Delineated Wetlands and Streams



Delineated Stream
Delineated Wetland
Approximate Wetland
Wetland Study Area
Facility Site

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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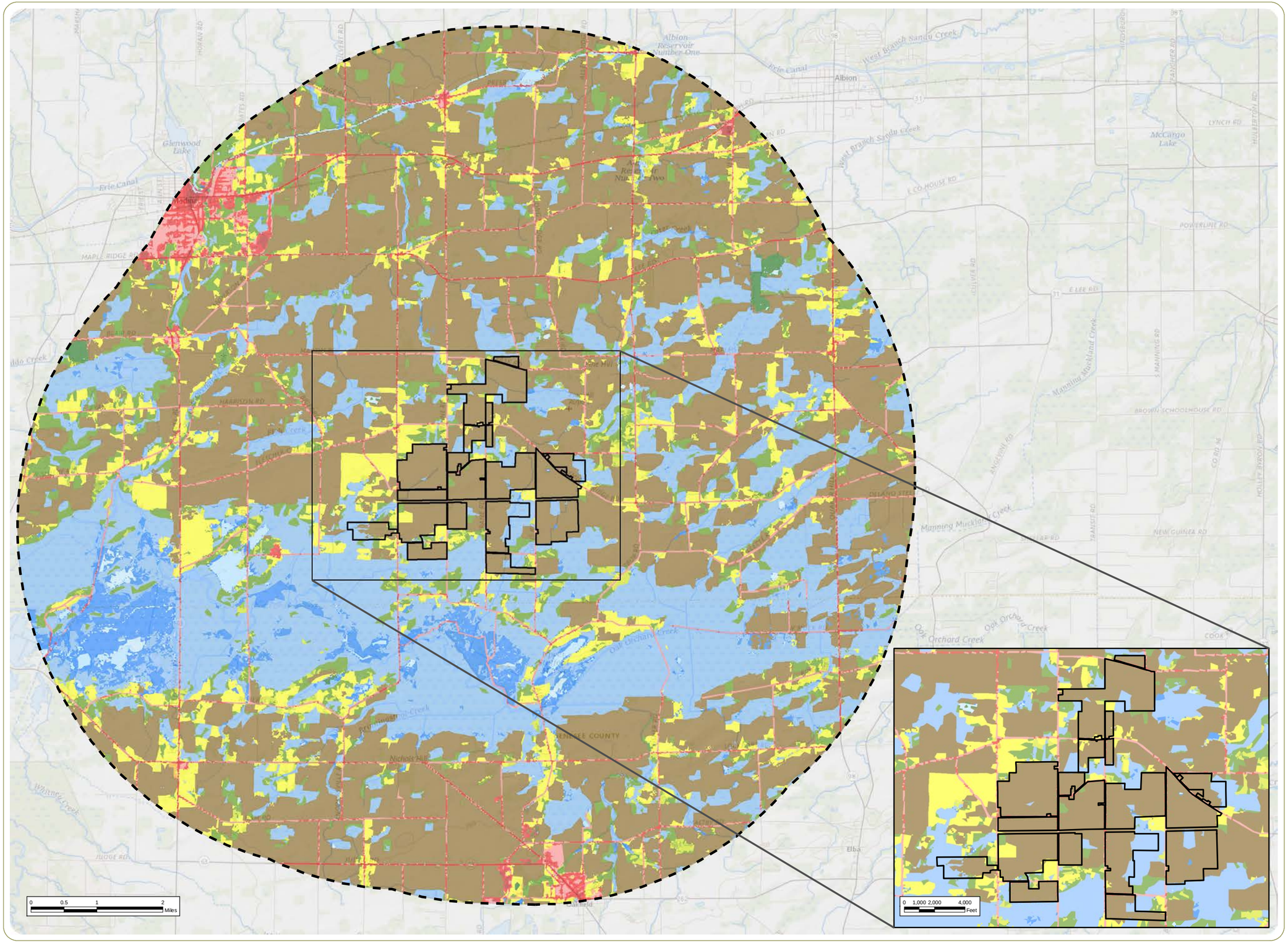
Towns of Shelby & Barre,
Orleans County, New York

Figure 10: NLCD Land Cover



2016 NLCD Land Cover
- 11 - Open Water
- 21 - Developed, Open Space
- 22 - Developed, Low Intensity
- 23 - Developed, Medium Intensity
- 24 - Developed, High Intensity
- 31 - Barren Land
- 41 - Deciduous Forest
- 42 - Evergreen Forest
- 43 - Mixed Forest
- 52 - Shrub/Scrub
- 71 - Dwarf Scrub
- 81 - Pasture/Hay
- 82 - Cultivated Crops
- 90 - Woody Wetlands
- 95 - Emergent Wetlands
- Facility Site
- 5-Mile Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "USA Topo Maps" map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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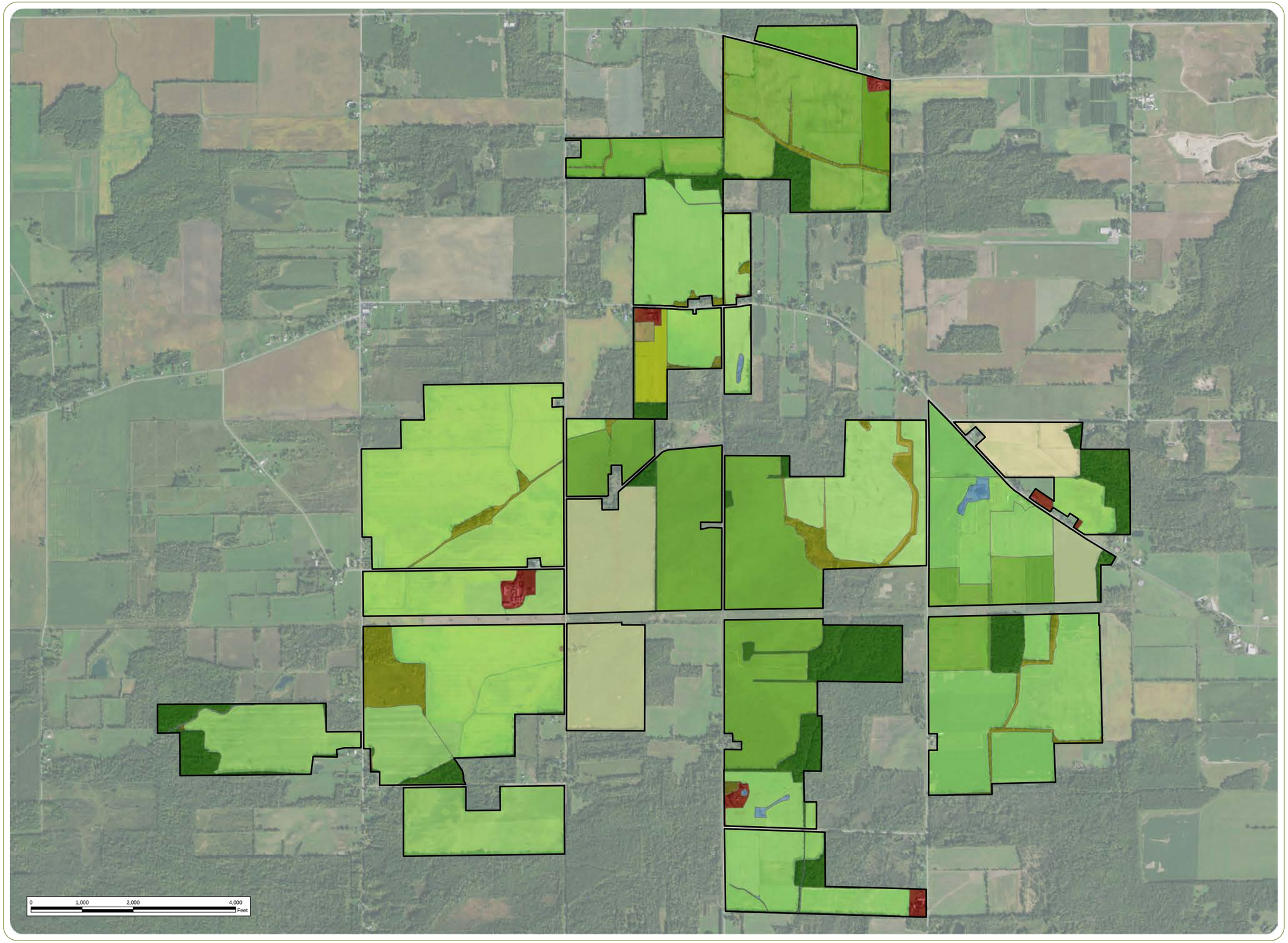
Towns of Shelby & Barre,
Orleans County, New York

Figure 11: Ecological Communities



Ecological Community
- Deciduous Forest
- Developed/Disturbed
- Fallow Field
- Hay Field
- Open Water/Wetland
- Pasture
- Row Crops - Corn
- Row Crops - Soy Beans
- Row Crops - Squash
- Successional Old Field
- Successional Shrubland
- Facility Site

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on February 9, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Appendix A. New York State Database Reports

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project:		
Project Location (describe, and attach a general location map):		
Brief Description of Proposed Action (include purpose or need):		
Name of Applicant/Sponsor:	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☐No		
b. City, Town or Village Planning Board or Commission ☐Yes ☐No		
c. City, Town or Village Zoning Board of Appeals ☐Yes ☐No		
d. Other local agencies ☐Yes ☐No		
e. County agencies ☐Yes ☐No		
f. Regional agencies ☐Yes ☐No		
g. State agencies ☐Yes ☐No		
h. Federal agencies ☐Yes ☐No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☐No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☐No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Heritage Areas:West Erie Canal Corridor, Federal Recreation Land:Iroquois National Wildlife Refuge

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☐No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☐ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?

_____
_____

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☐ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? _____

b. What police or other public protection forces serve the project site?

_____

c. Which fire protection and emergency medical services serve the project site?

_____

d. What parks serve the project site?

_____
_____

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?

_____

b. a. Total acreage of the site of the proposed action? _____ acres
b. Total acreage to be physically disturbed? _____ acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:

- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

_____
_____

f. Does the project include new residential uses? ☐Yes ☐No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☐Yes ☐No

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☐No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☐No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☐No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☐No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☐No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☐No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☐No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

_____

_____

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

n. Will the proposed action have outdoor lighting? ☐ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

_____

_____

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

_____

_____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☐ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

_____

_____

_____

_____

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____

  _____
- Operation: _____

  _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____

  _____
- Operation: _____

  _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☐ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☐ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

_____

_____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

_____

_____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

_____

_____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

_____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

_____

_____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)

☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

_____

_____

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces			
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____ _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☐ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☐ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☐ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☐ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☐ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☐ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: _____ _____%
_____ _____%
_____ _____%

d. What is the average depth to the water table on the project site? Average: _____ feet

e. Drainage status of project site soils: ☐ Well Drained: _____% of site
☐ Moderately Well Drained: _____% of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes: ☐ 0-10%: _____% of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 847-687, 847-673 Classification C
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, NYS Wetland, Federal Waters, Fe... Approximate Size NYS Wetland (in a...
- Wetland No. (if regulated by DEC) OK-1, KN-8, KN-7, KN-4, KN-...

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☐ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site: _____

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☑ Yes ☐ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

Deep Emergent Marsh, Hemlock-Northern Hardwood Forest

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: 393.7, 21.06 acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): _____

Northern Harrier, Least Bittern, Pied-billed Grebe, Bald Eagle, Upland Sandpiper, Short-eared Owl

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☐ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑ Yes ☐ No

If Yes, provide county plus district name/number: GENE002, ORLEcn1

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☐ No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: Eligible property:4721 Pine Hill Road, Barre, Eligible property:4764 Pine Hill Road, Barre, Eligible property:Pine ...

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☐ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☐ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

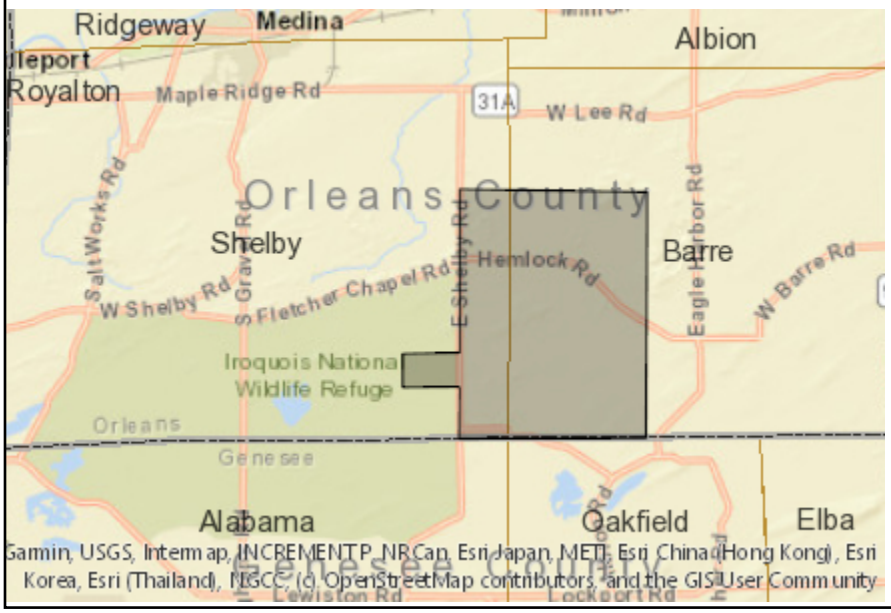
Applicant/Sponsor Name _____ Date_____

Signature_____ Title_____

PRINT FORM

EAF Mapper Summary Report

Thursday, December 3, 2020 10:30 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

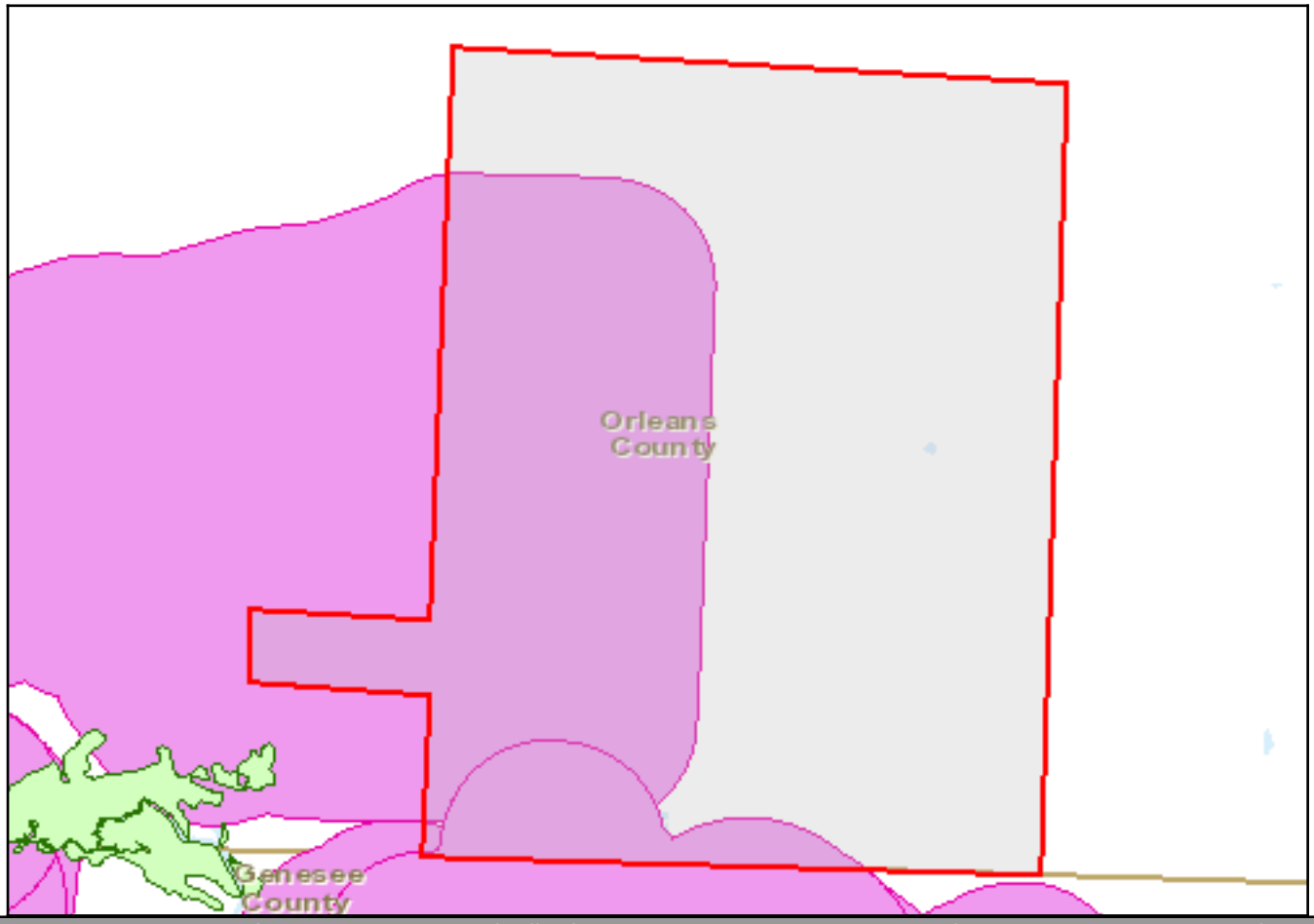
B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas:West Erie Canal Corridor, Federal Recreation Land:Iroquois National Wildlife Refuge
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	847-687, 847-673
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):5246.7, NYS Wetland (in acres):63.5, NYS Wetland (in acres):80.6, NYS Wetland (in acres):165.5, NYS Wetland (in acres):144.7, NYS Wetland (in acres):17.8, NYS Wetland (in acres):39.3

E.2.h.iv [Surface Water Features - DEC Wetlands Number]	OK-1, KN-8, KN-7, KN-4, KN-3, KN-16, KN-10
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	Yes
E.2.n.i [Natural Communities - Name]	Deep Emergent Marsh, Hemlock-Northern Hardwood Forest
E.2.n.i [Natural Communities - Acres]	393.7, 21.06
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Northern Harrier, Least Bittern, Pied-billed Grebe, Bald Eagle, Upland Sandpiper, Short-eared Owl
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	GENE002, ORLEcn1
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:4721 Pine Hill Road, Barre, Eligible property:4764 Pine Hill Road, Eligible property:Pine Hill Cemetery, Eligible property:East Shelby Community Bible Church, Eligible property:East Shelby Cemetery, Eligible property:4980 East Shelby Road, Shelby, Eligible property:5457 Crane Road
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

New York Nature Explorer

Orleans Solar

Criteria: Selected Map Area



Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status		Conservation Rank	
				State	Federal	State	Global
Animal: Birds							
Prothonotary Warbler *Protonotaria citrea*	Wood-Warblers	Recently Confirmed	2014	Protected Bird		S2B	G5

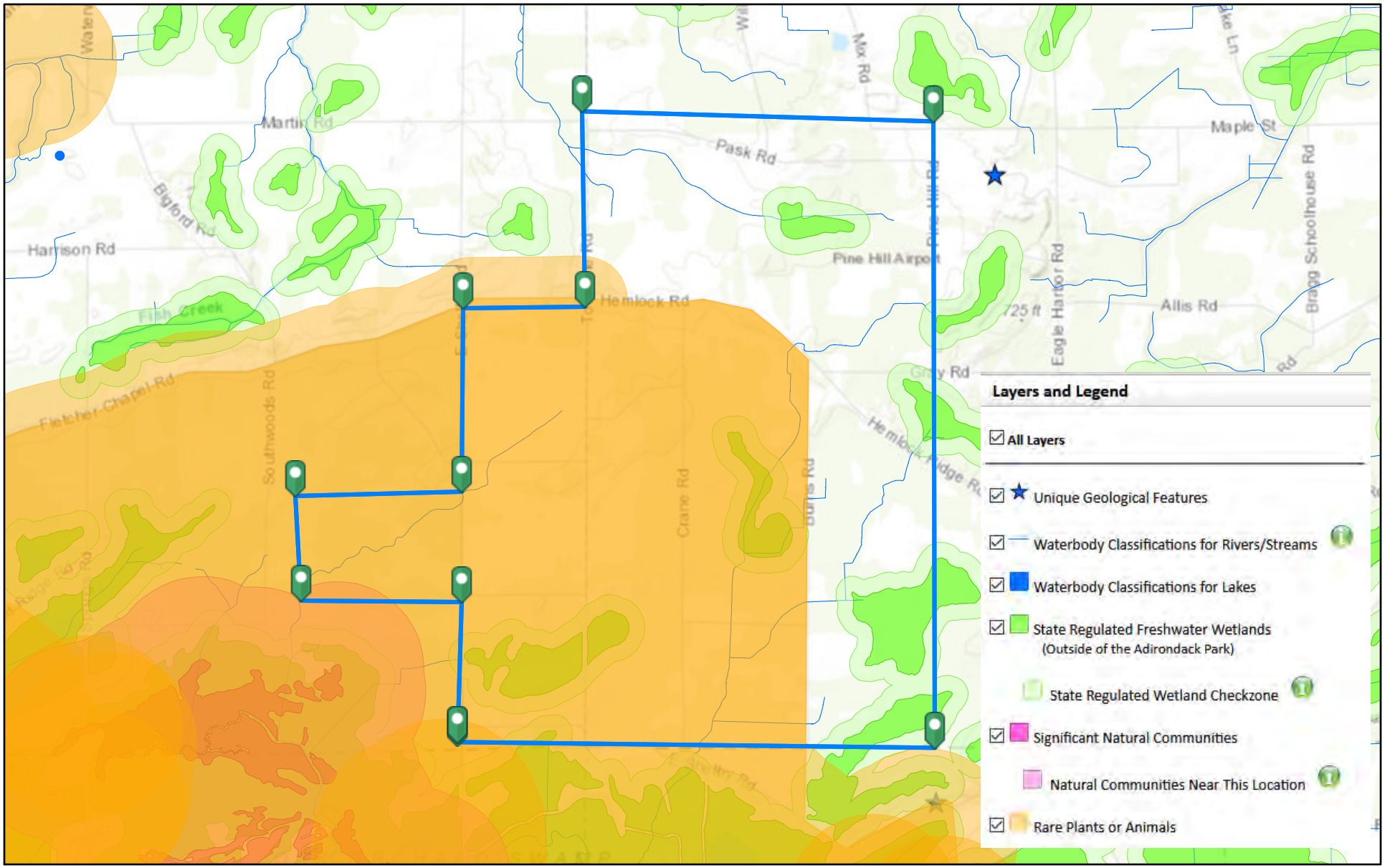
New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status		Conservation Rank	
				State	Federal	State	Global

Note: Restricted plants and animals may also have also been documented in one or more of the Towns or Cities in which your user-defined area is located, but are not listed in these results. This application does not provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. A list of the restricted animals and plants documented at the corresponding county level can be obtained via the County link(s) on the original User Defined Search Results page. Any individual plant or animal on this county's restricted list may or may not occur in this particular user-defined area.

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.

Orleans Solar



January 19, 2021

1:72,224

0 0.45 0.9 1.8 mi

0 0.5 1 2 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

NYS Department of Environmental Conservation
Not a legal document

Appendix B. Agency Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

January 7, 2020

Caitlin Graff
Environmental Design & Research, DPC
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: Orleans Solar
County: Orleans Town/City: Barre, Shelby

Dear Ms. Graff:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 8 Office, Division of Environmental Permits at dep.r8@dec.ny.gov, (585) 226-5400.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

1504

The following state-listed animals have been documented at the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 8 Office at dep.r8@dec.ny.gov, (585) 226-5400.

The following species have been documented at the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Northern Harrier *Nonbreeding*	*Circus hudsonius*	Threatened		15013
Short-eared Owl *Breeding and nonbreeding*	*Asio flammeus*	Endangered		11106
Upland Sandpiper *Breeding*	*Bartramia longicauda*	Threatened		7196

Note that this area is also a state-significant Raptor Winter Concentration Area.

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following significant natural community has been documented in the vicinity of the project site.

We recommend that potential impacts of the proposed project on this community be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following natural community is considered significant from a statewide perspective by the NY Natural Heritage Program. By meeting specific, documented criteria, the NY Natural Heritage Program considers this community occurrences to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Upland/Terrestrial Communities			
Hemlock-Northern Hardwood Forest			High Quality Occurrence

Documented within 0.5 mile south of the project site at Oak Orchard Swamp. Small, but old and mature, with no disturbance, not easily accessible, and receiving almost no public use. 3743

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: January 15, 2021
Consultation Code: 05E1NY00-2021-SLI-1028
Event Code: 05E1NY00-2021-E-03284
Project Name: Orleans Solar Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind

energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

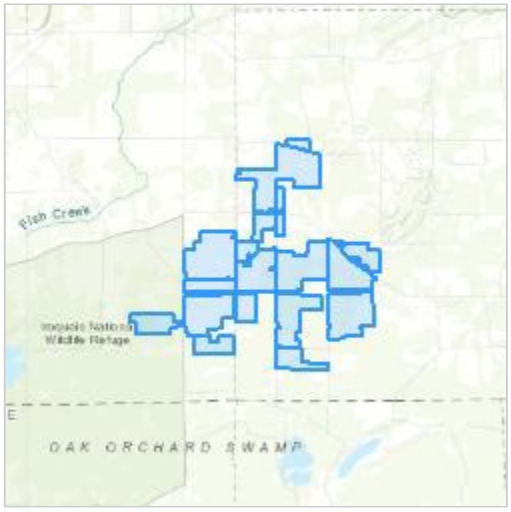
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2021-SLI-1028
Event Code: 05E1NY00-2021-E-03284
Project Name: Orleans Solar Project
Project Type: POWER GENERATION
Project Description: 200 MW Utility scale solar facility in the Towns of Barre and Shelby, Orleans County, New York

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.1773966,-78.29828255203736,14z



Counties: Orleans County, New York

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

From: naturalheritage@nynhp.org
To: Megan Quinn
Subject: Confirmation of your submitted request to New York Natural Heritage
Date: Friday, January 15, 2021 10:09:28 AM

[EXTERNAL SENDER]

Submission ID: 5360
Submitted on Friday, January 15, 2021 - 10:07
Submitted values are:

Company, Organization, or Agency: EDR, DPC
Requestor Name: Megan Quinn
Requestor Address (Street/PO Box): 217 Montgomery Street, Suite 1000
Requestor City: Syracuse
Requestor State: New York
Requestor Zip Code: 13201
Requestor Telephone #: 3154710688
Requestor Email: mquinn@edrdpc.com
Project Type: solar utility
Project Name: Orleans Solar Project
Project Applicant: Community Energy
Project County: Orleans
Town (Orleans County):
- Barre
- Shelby

Project Summary: 200 MW utility scale solar facility being permitted under Section 94-c of the Public Service Law
Current Land Use: Primarily active agriculture with small patches of successional fields, shrublands, and forest.
Tax parcel number:
Latitude:
Longitude:
Street Address of Project:
Project Notes: Total area of 2760 acres. This is a follow up request to update our files from 1 year ago.

Appendix C. Wildlife Species List

WILDLIFE SPECIES LIST

The following species have been documented in the vicinity of the Facility Area. Bold indicates a NYS-listed species observed within the last five years.

Notes	Common Name	*Scientific Name*	Conservation Status
Bird Species			
	Ducks, Geese, and Waterfowl	*Anatidae*	
1,2,3,4	wood duck	*Aix sponsa*	
2,3,4	northern pintail	*Anas acuta*	SGCN
2,4	green-winged teal	*Anas crecca*	
1,2,3,4,8	mallard	*Anas platyrhynchos*	
2,3,4	American black duck	*Anas rubripes*	SGCN-HP
2	greater white-fronted goose	*Anser albifrons*	
3	redhead	*Aythya americana*	
2,3	ring-necked duck	*Aythya collaris*	
1,2,3,4,8	Canada goose	*Branta canadensis*	
2,3	Cackling goose	*Branta hutchinsii*	
2	bufflehead	*Bucephala albeola*	
3	common goldeneye	*Bucephala clangula*	SGCN
9	snow goose	*Chen caerulescens*	
2	trumpeter swan	*Cygnus buccinator*	
3	mute swan	*Cygnus olor*	
3,4	tundra swan	*Cygnus columbianus*	
2,3,4	hooded merganser	*Lophodytes cucullatus*	
2,3,4	American wigeon	*Mareca americana*	
2,3	gadwall	*Mareca strepera*	
3	common merganser	*Mergus merganser*	
2	ruddy duck	*Oxyura jamaicensis*	SGCN
2,3	northern shoveler	*Spatula clypeata*	
2,3	blue-winged teal	*Spatula discors*	SGCN
	Pheasants, Grouse, and Allies	*Phasianidae*	
1,2,3,4,8	wild turkey	*Meleagris gallopavo*	
1,2,3,4	ring-necked pheasant	*Phasianus colchicus*	
	Grebes	*Podicipedidae*	
2	**pied-billed grebe**	***Podilymbus podiceps***	**ST, SGCN**
	Pigeons, Doves	*Columbidae*	
1,2,3,4,8	rock pigeon	*Columba livia*	
1,2,3,4,8	mourning dove	*Zenaida macroura*	
	Cuckoos	*Cuculidae*	
1,2,8	yellow-billed cuckoo	*Coccyzus americanus*	
1,2,8	black-billed cuckoo	*Coccyzus erythropthalmus*	SGCN
	Swifts	*Apodidae*	
1	chimney swift	*Chaetura pelagica*	
	Hummingbirds	*Trochilidae*	
1,2,8	ruby-throated hummingbird	*Archilochus colubris*	

WILDLIFE SPECIES LIST

The following species have been documented in the vicinity of the Facility Area. Bold indicates a NYS-listed species observed within the last five years.

Notes	Common Name	*Scientific Name*	Conservation Status
	Rails, Gallinules, and Coots	*Rallidae*	
3	American coot	*Fulica americana*	
2	common gallinule	*Gallinula galeata*	
2	sora rail	*Porzana carolina*	
2,8	Virginia rail	*Rallus limicola*	
	Cranes	*Gruidae*	
2,3,8	sandhill crane	*Grus canadensis*	
	Plovers	*Charadriidae*	
1,2,4,8	killdeer	*Charadrius vociferus*	
	Sandpipers	*Scolopacidae*	
1,4	spotted sandpiper	*Actitus macularius*	
6	upland sandpiper	*Bartramia longicauda*	ST, SGCN-HP
2,4	Wilson's snipe	*Gallinago delicata*	
2,8	American woodcock	*Scolopax minor*	SGCN
2,4	greater yellowlegs	*Tringa melanoleuca*	SGCN
	Gulls, Terns	*Laridae*	
2	black tern	*Chlidonias niger*	
2	Caspian tern	*Hydroprogne caspia*	
2,3,4	herring gull	*Larus argentatus*	
1,2,3,4,8	ring-billed gull	*Larus delawarensis*	
	Comorants	*Phalacrocoracidae*	
2	double crested cormorant	*Phalacrocorax auritus*	
	Pelicans	*Pelecanidae*	
4	American White Pelican	*Pelecanus erythrorhynchos*	
	Herons and Bitterns	*Ardeidae*	
2	great egret	*Ardea alba*	SGCN
2,3,4,8	great blue heron	*Ardea herodias*	
2	**American bittern**	***Botaurus lentiginosus***	**SSC, SGCN**
1,2	green heron	*Butorides virescens*	
	American Vultures	*Cathartidae*	
1,2,3,4,8	turkey vulture	*Cathartes aura*	
	Osprey	*Pandionidae*	
2,4	**osprey**	***Pandion haliaetus***	**SSC**
	Hawks	*Accipitridae*	
2,3,9	**Cooper's hawk**	***Accipiter cooperii***	**SSC**
2,3,9	**sharp-shinned hawk**	***Accipiter striatus***	**SSC**

WILDLIFE SPECIES LIST

The following species have been documented in the vicinity of the Facility Area. Bold indicates a NYS-listed species observed within the last five years.

Notes	Common Name	*Scientific Name*	Conservation Status
1,2,3,4,8,9	red-tailed hawk	*Buteo jamaicensis*	
3	rough-legged hawk	*Buteo lagopus*	
2,8	**red-shouldered hawk**	***Buteo lineatus***	**SSC, SGCN**
2	broad-winged hawk	*Buteo platypterus*	
2,3,4,6,9	**northern harrier**	***Circus cyaneus***	**ST, SGCN**
1,2,3,4,8,9	**bald eagle**	***Haliaeetus leucocephalus***	**ST, SGCN**
	Owls	*Strigidae*	
3	northern saw-whet owl	*Aegolius acadicus*	
2,3,4,6,9	**short-eared owl**	***Asio flammeus***	**SE, SGCN-HP**
3	long-eared owl	*Asio otus*	SGCN
3	snowy owl	*Bubo scandiacus*	
2,3,4,9	great horned owl	*Bubo virginianus*	
2,3,4	eastern screech owl	*Megascops asio*	
2,3	barred owl	*Strix varia*	
	Kingfishers	*Alcedinidae*	
2,3	belted kingfisher	*Ceryle alcyon*	
	Woodpeckers	*Picidae*	
1,2,3,4,8	northern flicker	*Colaptes auratus*	
1,2,3,4,8	pileated woodpecker	*Dryocopus pileatus*	
1,2,3,4,8	downy woodpecker	*Dryobates pubescens*	
1,2,3,4	hairy woodpecker	*Dryobates villosus*	
1,2,3,4,8	red-bellied woodpecker	*Melanerpes carolinus*	
2,3,4	yellow-bellied sapsucker	*Sphyrapicus varius*	
	Falcons	*Falconidae*	
3	merlin	*Falco columbarius*	
3	**peregrine falcon**	***Falco peregrinus***	**SE, SGCN**
1,2,3,4,8	American kestrel	*Falco sparverius*	SGCN
	Tyrant Flycatchers	*Tyrannidae*	
1,2,8	eastern wood-pewee	*Contopus virens*	
1,2,8	alder flycatcher	*Empidonax alnorum*	
1,2	least flycatcher	*Empidonax minimus*	
1,2,8	willow flycatcher	*Epidonax traillii*	
2	Acadian flycatcher	*Epidonax viresceus*	
1,2,8	great crested flycatcher	*Myiarchus crinitus*	
1,2,3,4,8	eastern phoebe	*Sayornis phoebe*	
1,2,8	eastern kingbird	*Tyrannus tyrannus*	
	Vireos	*Vireonidae*	
1,2,8	yellow-throated vireo	*Vireo flavifrons*	
1,2,4,8	warbling vireo	*Vireo gilvus*	
1,2,4,8	red-eyed vireo	*Vireo olivaceus*	
2	blue-headed vireo	*Vireo solitarius*	

WILDLIFE SPECIES LIST

The following species have been documented in the vicinity of the Facility Area. Bold indicates a NYS-listed species observed within the last five years.

Notes	Common Name	*Scientific Name*	Conservation Status
	Shrikes	*Laniidae*	
2,3,4	northern shrike	*Lanius borealis*	
	Jays, Crows	*Corvidae*	
1,2,3,4,8	American crow	*Corvus brachyrhynchos*	
2,3	common raven	*Corvus corax*	
1,2,3,4,8	blue jay	*Cyanocitta cristata*	
	Titmice	*Paridae*	
1,2,3	tufted titmouse	*Baeolophus bicolor*	
1,2,3,4,8	black-capped chickadee	*Poecile atricapillus*	
	Larks	*Alaudidae*	
1,2,3,4,8	**horned lark**	***Eromophila alpestris***	**SSC, SGCN-HP**
	Swallows	*Hirundinidae*	
1,2,4,8	barn swallow	*Hirundo rustica*	
2	purple martin	*Progue subis*	
1,2,4	bank swallow	*Riparia riparia*	
2	northern rough-winged swallow	*Stelgidopteryx serripennis*	
1,2,4,8	tree swallow	*Tachycineta bicolor*	
	Kinglets	*Regulidae*	
2,3,4	ruby-crowned kinglet	*Regulus calendula*	
3,4	golden-crowned kinglet	*Regulus satrapa*	
	Nuthatches	*Sittidae*	
2,3	red-breasted nuthatch	*Sitta canadensis*	
1,2,3,4,8	white-breasted nuthatch	*Sitta carolinensis*	
	Treecreepers	*Certhiidae*	
2,3,4	brown creeper	*Certhia americana*	
	Gnatcatchers	*Polioptilidae*	
2	blue-gray gnatcatcher	*Polioptila caerulea*	
	Wrens	*Troglodytidae*	
2	marsh wren	*Cistothorus palustris*	
2,3	Carolina wren	*Thryothorus ludovicianus*	
1,2,4,8	house wren	*Troglodytes aedon*	
2	winter wren	*Troglodytes hiemalis*	
	Starlings	*Sturnidae*	
1,2,3,4,8	European starling	*Sturnus vulgaris*	
	Mimic Thrushes	*Mimidae*	

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Notes	Common Name	*Scientific Name*	Conservation Status
1,2,4,8	gray catbird	*Dumetella carolinensis*	
1,2,3,8	northern mockingbird	*Mimus polyglottos*	
2,8	brown thrasher	*Toxostoma rufum*	SGCN-HP
	Thrushes and Allies	*Turdidae*	
1,2,8	veery	*Catharus fuscescens*	
2,3,8	hermit thrush	*Catharus guttatus*	
2	gray-cheeked thrush	*Catharus minimus*	
2,8	Swainson's thrush	*Catharus ustulatus*	
1,2,8	wood thrush	*Hylocichla mustelina*	SGCN
1,2,3,4,8	eastern bluebird	*Sialia sialis*	
1,2,3,4,8	American robin	*Turdus migratorius*	
	Waxwings	*Bombycillidae*	
1,2,3,4,8	cedar waxwing	*Bombycilla cedrorum*	
	Old World Sparrows	*Passeridae*	
1,2,3,4,8	house sparrow	*Passer domesticus*	
	Wagtails and Pipits	*Mortacillidae*	
2	American pipit	*Anthus rubescens*	
	Finches and Allies	*Fringillidae*	
3	common redpoll	*Acanthis flammea*	
3	evening grosbeak	*Coccothraustes vespertinus*	
1,2,3	house finch	*Haemorhous mexicanus*	
1,2,3	purple finch	*Haemorhous purpureus*	
3	pine siskin	*Spinus pinus*	
1,2,3,4,8	American goldfinch	*Spinus tristis*	
	Longspurs	*Calcariidae*	
3	Lapland longspur	*Calcarius lapponicus*	
3,4	snow bunting	*Plectrophenax nivalis*	

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Notes	Common Name	*Scientific Name*	Conservation Status
	New World Sparrows	*Passerellidae*	
2,3,4,8	dark-eyed junco	*Junco hyemalis*	
1,2,3,4	swamp sparrow	*Melospiza georgiana*	
1,2,3,4,8	song sparrow	*Melospiza melodia*	
1,2,3,4,8	savannah sparrow	*Passerculus sandwichensis*	
2,8	eastern towhee	*Pipilo erythrophthalmus*	
1,2,8	**vesper sparrow**	***Pooecetes gramineus***	**SSC, SGCN-HP**
1,2,4,8	chipping sparrow	*Spizella passerina*	
1,2,3,8	field sparrow	*Spizella pusilla*	
2,3,4	American tree sparrow	*Spizelloides arborea*	
2,3,4	white-throated sparrow	*Zonotrichia albicollis*	
2,3	white-crowned sparrow	*Zonotrichia leucophrys*	
	Blackbirds	*Icteridae*	
1,2,3,4,8	red-winged blackbird	*Agelaius phoeniceus*	
1,2,8	**bobolink**	***Dolichonyx oryzivorus***	**SSC, SGCN-HP**
2,4	rusty blackbird	*Euphagus carolinus*	SGCN-HP
1,2,8	Baltimore oriole	*Icterus galbula*	
1,2,3,4,8	brown-headed cowbird	*Molothrus ater*	
1,2,4,8	common grackle	*Quiscalus quiscula*	
2	eastern meadowlark	*Sturnella magna*	SGCN-HP
	New World Warblers	*Parulidae*	
2	Canada warbler	*Cardellina canadensis*	SGCN-HP
2	Wilson's warbler	*Cardellina pusilla*	
1,2	mourning warbler	*Geothlypis philadelphia*	
1,2,4,8	common yellowthroat	*Geothlypis trichas*	
2	Tennessee warbler	*Leiothlypis peregrina*	
2	Nashville warbler	*Leiothlypis ruficapilla*	
2	black-and-white warbler	*Mniotilta varia*	
2	northern waterthrush	*Parkesia noveboracensis*	
2,7	Prothonotary Warbler	*Protonotaria citrea*	
1,2,8	ovenbird	*Seiurus aurocapillus*	
2	northern parula	*Setophaga americana*	
2	black-throated blue warbler	*Setophaga caerulescens*	SGCN
2	bay-breasted warbler	*Setophaga castanea*	SGCN-HP
2	**cerulean warbler**	***Setophaga cerulea***	**SSC, SGCN**
1,2	hooded warbler	*Setophaga citrina*	
2,3,4,8	yellow-rumped warbler	*Setophaga coronata*	
2,8	Blackburnian warbler	*Setophaga fusca*	
2	magnolia warbler	*Setophaga magnolia*	
2	palm warbler	*Setophaga palmarum*	
2,8	chestnut-sided warbler	*Setophaga pensylvanica*	
1,2,4,8	yellow warbler	*Setophaga petechia*	
2	pine warbler	*Setaphaga pinus*	
1,2	American redstart	*Setophaga ruticilla*	
2	blackpoll warbler	*Setophaga striata*	

WILDLIFE SPECIES LIST

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Notes	Common Name	*Scientific Name*	Conservation Status
2	Cape May warbler	*Setophaga tigrina*	SGCN-HP
2	black-throated green warbler	*Setophaga virens*	
1,2	blue-winged warbler	*Vermivora cyanoptera*	SGCN
	Cardinals and Allies	*Cardinalidae*	
1,2,3,4,8	northern cardinal	*Cardinalis cardinalis*	
1,2,8	indigo bunting	*Passerina cyanea*	
1	rose-breasted grosbeak	*Pheucticus ludovicianus*	
1,2,8	scarlet tanager	*Piranga olivacea*	SGCN
	dickcissel	*Spiza americana*	
Amphibian Species			
	Newts	*Salamandridae*	
5	red-spotted newt	*Notophthalmus viridescens*	
	Lungless Salamanders	*Plethodontidae*	
5	eastern red-backed salamander	*Plethodon cinereus*	
	Tree Frogs	*Hylidae*	
5	gray treefrog	*Hyla versicolor*	
5	spring peeper	*Pseudacris crucifer*	
5	western chorus frog	*Pseudacris triseriata*	SGCN
	Toads	*Bufonidae*	
5	American toad	*Anaxyrus americanus*	

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Notes	Common Name	*Scientific Name*	Conservation Status
	True Frogs	*Ranidae*	
5	bull frog	*Lithobates catesbeianus*	
5	green frog	*Lithobates clamitans*	
5	northern leopard frog	*Lithobates pipiens*	
5	wood frog	*Lithobates sylvaticus*	
Reptile Species			
	Snapping Turtles	*Chelydridae*	
5	common snapping turtle	*Chelydra serpentina*	SGCN
	Box and Water Turtles	*Emydidae*	
5	painted turtle	*Chrysemys picta*	
	Colubrids	*Colubridae*	
5	black rat snake	*Elaphe obsoleta*	
5	eastern milk snake	*Lampropeltis triangulum*	
5	northern water snake	*Nerodia sipedon*	
5	common garter snake	*Thamnophis sirtalis*	

Notes

1. Species identified in the 2015-2019 USGS Breeding Bird Survey (Baron, NY Route).
2. Species identified in the 2020-2024 NYS Breeding Bird Atlas (Survey Blocks: Knowlesville CE, Knowlesville SW, and Knowlesville SE.)
3. Species identified in the 2015-2019 Audubon Christmas Bird Count (Oak Orchard Swamp Count).
4. Reported by eBird users in the Burn Rd and Johnson Rd hotspots 2016-2021.
5. Species identified in the 1990-1999 NYS Amphibian & Reptile Atlas Project (Knowlesville Quad).
6. Identified by the NYNHP as occurring within 0.5 mile of the Facility Site in correspondence dated 01/07/2020.
7. Likely to occur in the vicinity of the Facility Site based on information from NYSDEC, NatureServe Explorer.
8. Species identified during on-site breeding bird surveys conducted by EDR in 2020.
9. Species identified during on-site winter raptor surveys conducted by EDR in 2020-2021.

Conservation Status Codes

SE	NYS Endangered Species
ST	NYS Threatened Species
SSC	NYS Species of Special Concern
SGCN	NYS Species of Greatest Conservation Need
SGCN-HP	NYS Species of Greatest Conservation Need – High Priority

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eBird. 2020a. Hotspots. Cornell Lab of Ornithology, Ithaca, New York. Available at: https://ebird.org/hotspots (Accessed January 2021).

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