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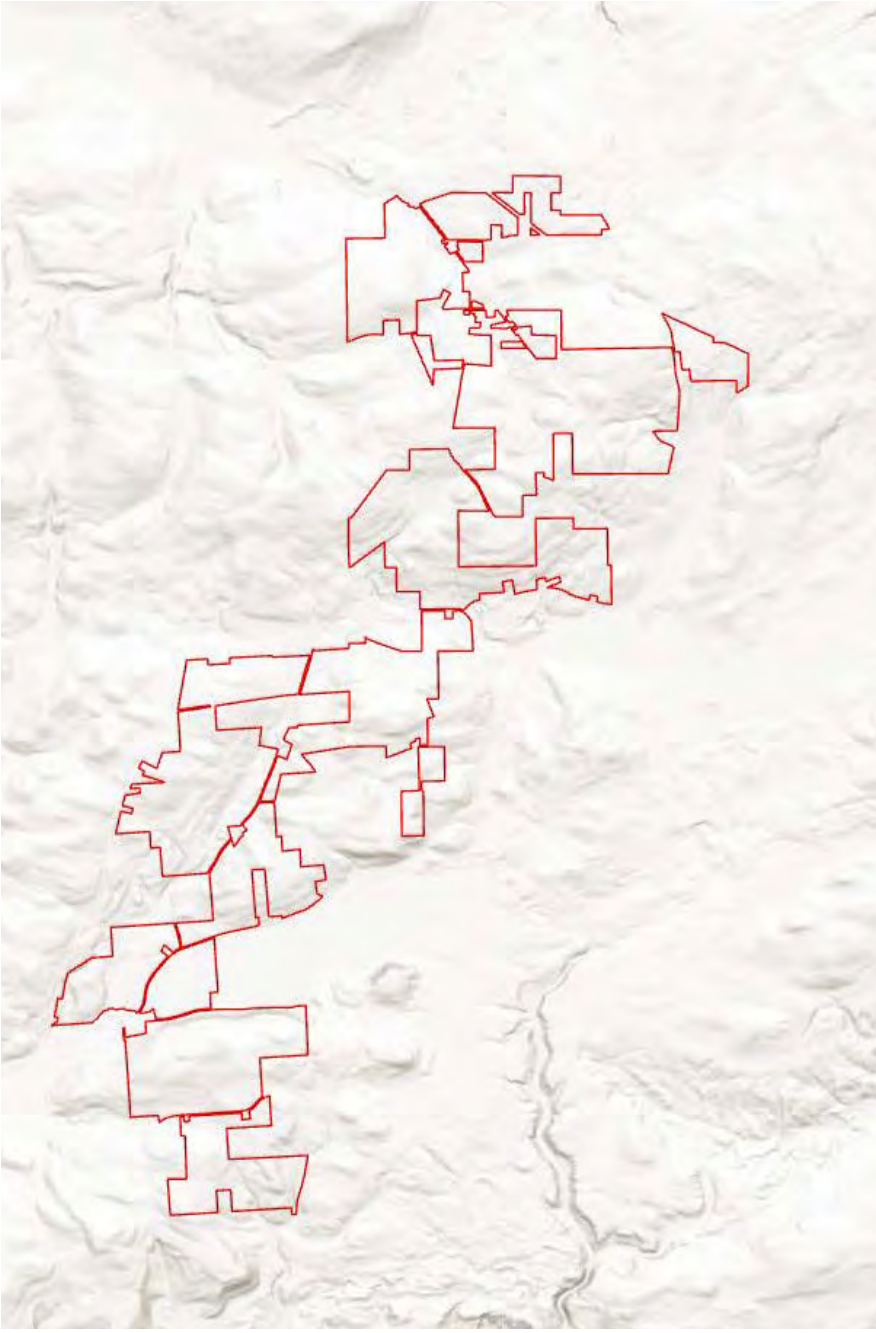

PHASE IA ARCHAEOLOGICAL SURVEY

Prepared by:

EDR
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
www.edrdpc.com

Hoffman Falls Wind Project

Towns of Fenner, Nelson, and Smithfield, Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207
https://liberty-renewables.com/

Redacted – Sensitive Archaeological Site Information Removed

liberty renewables

May 2023

Phase IA Archaeological Survey

Hoffman Falls Wind Project

Towns of Eaton, Fenner, Nelson, and Smithfield, Madison County, New York

Prepared for:

Liberty Renewables Inc.
90 State Street, Suite 700
Albany, NY 12207
https://liberty-renewables.com/

Prepared by:

Environmental Design & Research, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
www.edrdpc.com

May 2023

MANAGEMENT SUMMARY

NYSHPO Project Review Number:	21PR03978
Involved State and Federal Agencies:	New York State Office of Parks, Recreation and Historic Preservation (Section 14.09); New York State Office of Renewable Energy Services (ORES) (Section 94-c Application)
Phase of Survey:	Phase IA Archaeological Survey
Location Information:	Towns of Eaton, Fenner, Nelson, and Smithfield, Madison County, New York
USGS 7.5-Minute Quadrangles:	*Cazenovia, NY*; *Morrisville, NY*
Survey Area:	
Facility Description:	A proposed 100-megawatt (MW) wind-powered electric generating project consisting of up to 22 wind turbines and supporting infrastructure.
Facility Site:	An approximately 7,026-acre general area of land under consideration to host the proposed Facility.
Archaeological Resources Overview:	One NYSM Area associated with NYSM Site 3836 overlaps the Facility Site. Five archaeological sites have been previously recorded within 1 mile of the Facility Site.
Report Authors:	Matthew Victor Weiss, RPA; Moira Magni; Nicole Fragnito; Beth Peyser, RPA; Andrew Roblee
Date of Report:	May 2023

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ABSTRACT

Environmental Design & Research, Landscape Architecture, Engineering, and Environmental Services, D.P.C. conducted a Phase IA Archaeological Survey for the Hoffman Falls Wind Project (the Facility) on behalf of Liberty Renewables Inc. The Facility is a 100-megawatt wind-powered electric generating project located within the Towns of Eaton, Fenner, Nelson, and Smithfield, Madison County, New York. The Facility Site is 4,945 acres, of which 1,282 (25%) was identified as having elevated archaeological sensitivity for archaeological sites. Construction of the proposed Facility will include ground disturbing activities that have the potential to impact archaeological resources. The area of potential effect (APE) will include all areas within the limits of disturbance for proposed construction activities and will be determined based on the Facility Design, which is in the process of being developed by Liberty Renewables Inc. Portions of the APE that are within areas of Elevated Sensitivity for archaeological resources will be subjected to Phase IB survey consistent with the archaeological sensitivity field methods and research design presented in this report.

1.0 INTRODUCTION

On behalf of Liberty Renewables Inc. (the Applicant), Environmental Design & Research, D.P.C. (EDR) conducted a Phase IA Archaeological Survey for the proposed Hoffman Falls Wind Project (the Facility), located in the Towns of Eaton, Fenner, Nelson, and Smithfield in Madison County, New York. The information and recommendations included in this report are intended to assist the Office of Renewable Energy Siting (ORES), the New York State Office of Parks, Recreation and Historic Preservation (NYSHPO), the U.S. Army Corps of Engineers (USACE), and other New York State and/or federal agencies in their review of the Facility under Section 94-c of the New York State Executive Law, Section 14.09 of the New York State Parks, Recreation, and Historic Preservation Law, and/or Section 106 of the National Historic Preservation Act, as applicable. Please note that this report addresses only archaeological resources; information concerning the Facility's potential effect on historic architectural resources has been (and will continue to be) provided to NYSHPO under separate cover.

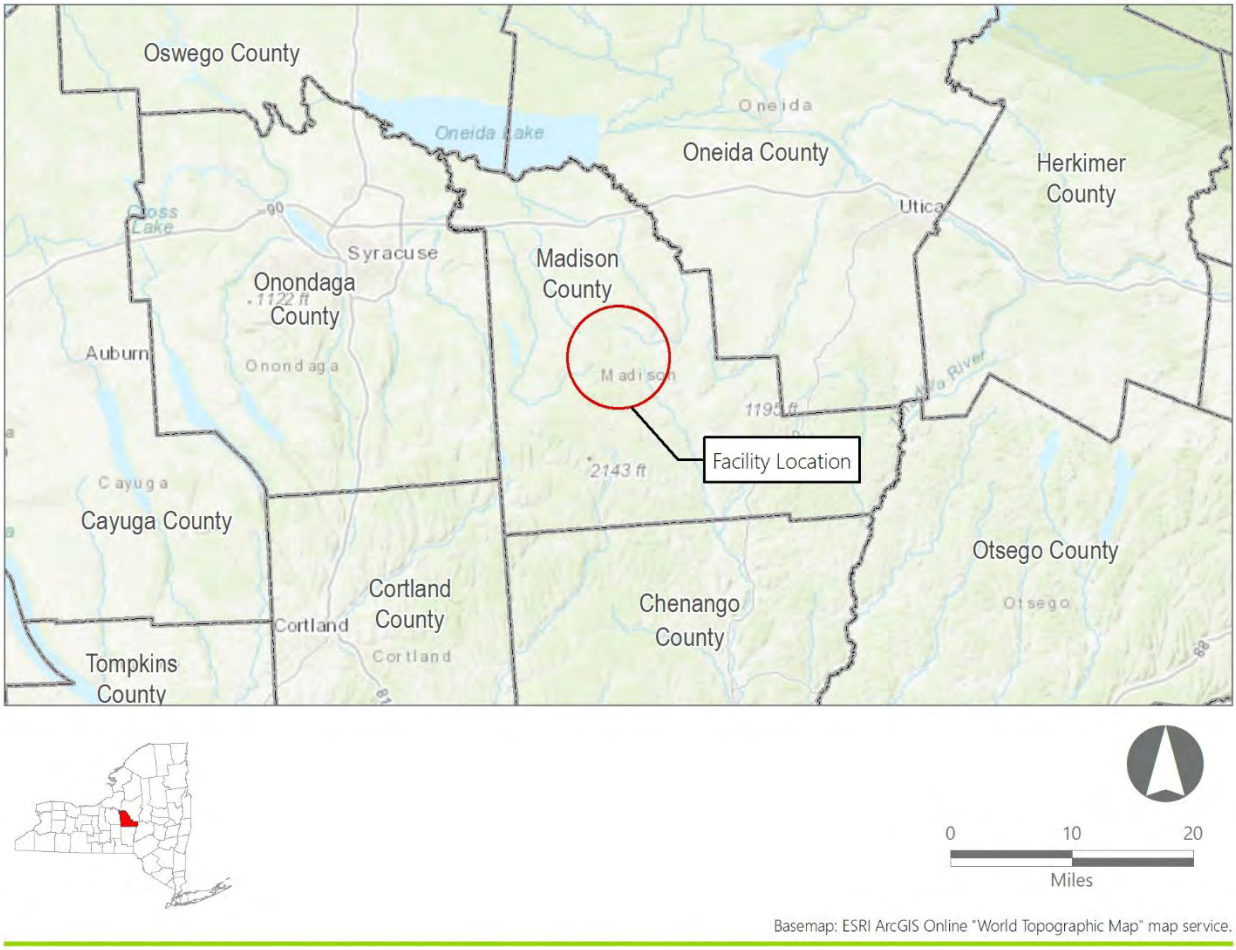
1.1 Purpose of the Investigation

The purpose of the Phase IA Archaeological Survey is to:

- Describe previously identified archaeological resources and/or sites of cultural or religious significance that are located within the Facility Site; and,
- Propose a methodology to identify archaeological resources within the Facility Site, evaluate their eligibility for the State/National Register of Historic Places (S/NRHP), and assess the potential effect of the Facility on those resources.

All cultural resources studies undertaken by EDR are conducted by or under the supervision of professionals who satisfy the qualifications criteria per the Secretary of the Interior's Standards for archaeology and historic preservation (36 CFR 61), as appropriate. This Phase IA report was prepared in accordance with applicable portions of NYSHPO's Phase I Archaeological Report Format Requirements (NYSHPO, 2005).

Figure 1. Regional Facility Location



1.2 Project Background

The former Blue Hill Wind Project and Hoffman Falls Wind Project were initially proposed by the Applicant in 2021 and consisted of two separate Facility Sites.

- The former **Blue Hill Wind Project** layout consisted of a proposed 27-megawatt (MW) wind-powered electric generating project consisting of up to six wind turbines and supporting infrastructure on approximately 1,489 acres of land in the Town of Eaton, Madison County, New York.
- The **Hoffman Falls Wind Project** layout consisted of a proposed 72-MW wind-powered electric generating project consisting of up to 16 wind turbines and supporting infrastructure on approximately 8,385-acres of land in the Towns of Fenner, Nelson, and Smithfield, Madison County, New York.

Following the submission of *Phase IA Archaeological Survey (Revised), Blue Hill Wind Project, Town of Eaton, Madison County, New York* (EDR, 2022) and concurrence of the NYSHPO (NYSHPO, 2022), the proposed layout was revised to incorporate portions of both Facility Sites into one combined 4,945-acre Facility Site.

1.3 Facility Location and Description

The proposed Facility is an approximately 100-megawatt (MW) wind-powered electric generating project located within the Towns of Eaton, Fenner, Nelson, and Smithfield, Madison County, New York (Figure 1). The Facility layout is still in development and will consist of up to 22 wind turbines and supporting infrastructure, which will include access roads, collection lines, meteorological towers, laydown yards, a collection substation, and an associated point-of-interconnection (POI), as well as other Facility components.

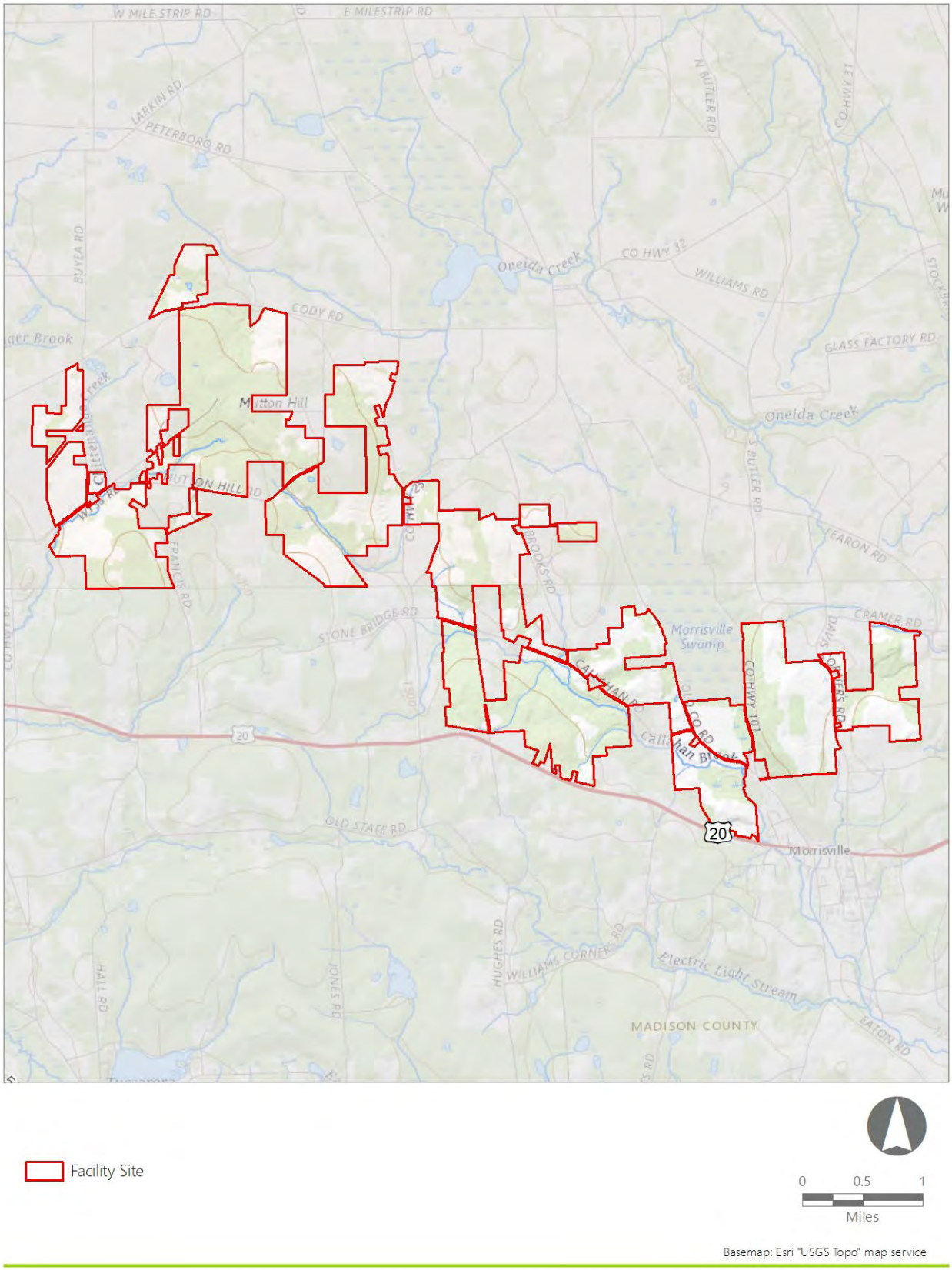
The following terms are used throughout this document to describe the proposed project:

Facility	Collectively refers to all components of the proposed project, including wind turbines and supporting infrastructure.
Facility Site	The general area of land within which all Facility components will ultimately be located. The Facility Site includes 4,945-acres.
Area of Potential Effect (APE)	The Area of Potential Effect (APE) for the Facility is the area within which all proposed construction activities associated with the Facility will occur.

The lands being evaluated to host the Facility are rural and agricultural in nature (Figure 2). Not all land included in the Facility Site will ultimately be developed as part of the project. The Facility Site consists of a general 4,945-acre area, within which a more limited subset of land will be selected for the siting, design, construction, and operation of the Facility. It is anticipated that the Facility will consist of the following components:

- Up to 22 wind turbines;
- Temporary and permanent meteorological towers to collect wind and weather data;
- A collection system that will aggregate the electrical output from the turbines;
- A collection substation where the Facility's electrical output voltage will be combined and its voltage increased to the transmission line voltage via step-up transformers;
- A generation tie line that will connect the Facility to the designated POI;
- Access roads to facilitate maintenance during operations; and
- Temporary laydown areas for equipment staging during construction.

Figure 2. Facility Site



1.4 Agency Guidelines and Stakeholder Outreach

This Phase IA archaeological survey report has been prepared based on NYSHPO guidance concerning the development of archaeological sensitivity models and required locations of Phase IB archaeological testing for similar renewable energy projects.

Agency and stakeholder outreach and consultation for the Facility has included the following:

- June 15, 2021: On behalf of the Applicant, EDR sent a letter and maps (via email) to Jesse Bergevin, Historical Resources Specialist for the Oneida Indian Nation (OIN), to formally introduce the project to the Nation and request a dialog regarding cultural resources and other potential areas of concern that could be affected by the Facility. The Applicant anticipates ongoing consultation with the OIN throughout the development and environmental review of the Facility. (EDR, 2021a, 2021b).
- June 16, 2021: On behalf of the Applicant, EDR initiated formal consultation with the NYSHPO via the Cultural Resources Information System (CRIS) website. EDR proposed to conduct a Phase IA archaeological survey in accordance with the above guidance (EDR, 2021c, 2021d).
- June 21, 2021: NYSHPO issued a project review letter requesting that the Applicant prepare a Phase IA archaeological survey (NYSHPO, 2021a, 2021b). This correspondence is included as Appendix A.
- July 2, 2021: NYSHPO issued a response to the initial request for consultation and request for a historic resources survey work plan (NYSHPO, 2021c, 2021d).
- July 9, 2021: The OIN inquired if federal permits or assistance is anticipated (OIN, 2021a).
- July 20, 2021: On behalf of the Applicant, EDR replied to the OIN that the USACE Nationwide Permit is assumed (EDR, 2021e).
- July 21, 2021: The OIN inquired if the Facility Site could be amended to avoid the OIN-owned parcel it currently includes in the Hoffman Falls Wind Project, and if not, why it needs to be included (OIN, 2021b).
- August 12, 2021: On behalf of the Applicant, EDR clarified that the Facility Site depicts the general project area for the Hoffman Falls Wind Project and that no components are proposed to be sited on OIN-owned parcels (EDR, 2021f).
- August 30, 2022: On behalf of the Applicant, EDR submitted *Phase IA Archaeological Survey, Blue Hill Wind Project, Town of Eaton, Madison County, New York* to NYSHPO (EDR, 2021g).
- September 7, 2021: On behalf of the Applicant, EDR held a meeting/call to discuss anticipated cultural resources studies and environmental permitting review for both the Blue Hill Wind Project and Hoffman Falls Wind Project. Liberty Renewables reiterated that the Facility Site just depicts the general project area and that no components are proposed to be sited on OIN-owned parcels. Regardless, OIN requested that the Facility Site be amended to exclude OIN-owned parcels. OIN also requested a copy of the Phase IA Archaeological Survey and that a project introduction letter be sent to the OIN leadership (EDR, 2021h).
- September 9, 2021: NYSHPO issued a request for revisions to the Blue Hill Phase IA Archaeological Survey (NYSHPO, 2021e).
- March 21, 2022: On behalf of the Applicant, EDR submitted *Phase IA Archaeological Survey (Revised), Blue Hill Wind Project, Town of Eaton, Madison County, New York* to NYSHPO (EDR, 2022).

- April 14, 2022: NYSHPO issued concurrence with the revised Phase IA Archaeological Survey (NYSHPO, 2022).
- February 2, 2023: On behalf of the Applicant, EDR submitted *Phase IA Archaeological Survey (Revised), Hoffman Falls Wind Project, Towns of Eaton, Fenner, Nelson, and Smithfield, Madison County, New York* to NYSHPO (EDR, 2023).
- February 15, 2023: NYSHPO issued concurrence with the revised Phase IA Archaeological Survey (NYSHPO, 2023)

Following submission and review of this Phase IA Archaeological Survey report to the NYSHPO and the Oneida Indian Nation, it is anticipated the Applicant will conduct a Phase IB archaeological survey, in accordance with the methodology requested above by NYSHPO and as further described in this report.

As stated above, this report addresses only archaeological resources; information concerning the Facility's potential effect on historic architectural resources is being provided to the NYSHPO under separate cover.

2.0 BACKGROUND AND SITE HISTORY

The following subsections provide environmental and historic contexts for the Facility Site, as well as information about cultural resources surveys that have bene previously conducted in the vicinity.

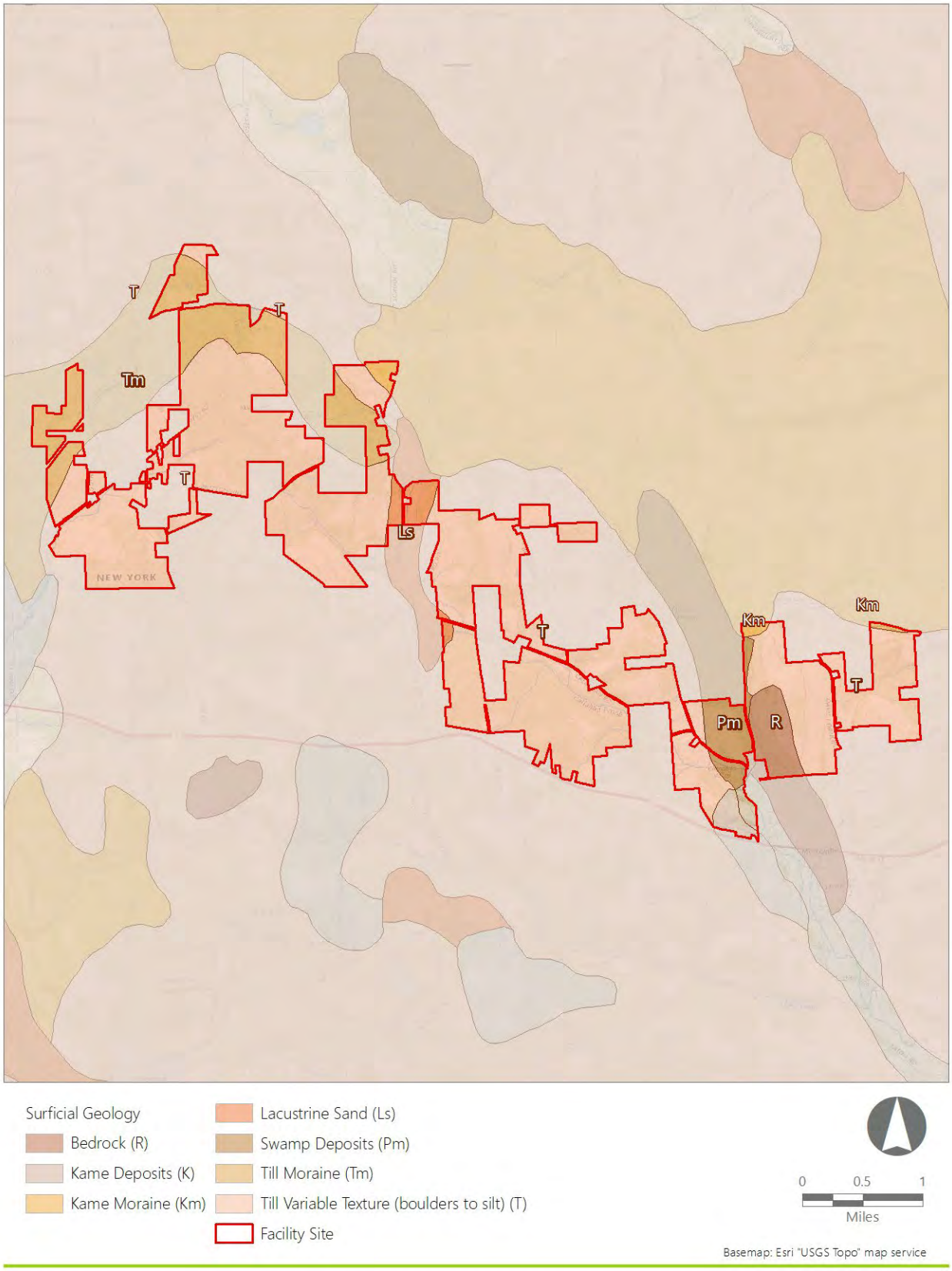
2.1 Geology and Soils

The Facility Site is located in Madison County, NY, located within the Appalachian Uplands physiographic province. Topography within the Facility Site is characterized by rugged hills with gently to steeply-sloping sides and gently-sloping to nearly level benches and saddles. Elevations within the Facility Site range from approximately 1,300 to 1,900 feet above mean sea level. The Facility Site is bisected by several small headwater streams that flow into Cedar Swamp to the southwest, Peterboro Swamp to the northeast, Electric Light Stream to the southeast, Callahan Brook to the east, and Munger Brook to the northwest. Portions of the Facility Site are poorly drained with wetlands and small pockets of swampland common throughout. Some of these areas have been transformed into artificial ponds. The bedrock underlying the Facility Site is composed of the Skaneateles, Ludlowville, and Marcellus Formations, which are made up of Middle Devonian shale, limestone, and sandstone (USGS, 2021).

Repeated glaciation throughout the Pleistocene Epoch is the primary agent in the creation of topography, surficial geology, and soils present throughout Madison County today. The final maximal extent of Pleistocene glaciers in New York occurred between approximately 28,000 and 24,000 calendar years before present (cal. BP), when the Laurentide ice sheet began to recede, with minor periodic re-advances. By approximately 15,500 cal. BP the ice sheet had receded as far as modern-day Albany. After that point, ice withdrawal occurred more quickly and the ice sheet receded into modern-day Quebec around 13,100 cal. BP (Ridge, 2003; Lothrop and Bradley, 2012). Within the northern portion of Madison County, within the Ontario Lowlands, topography and soils are the product of former, proglacial Lake Iroquois, which deposited glaciolacustrine sediments across these lowlands. Within the Appalachian Uplands, however, where the

Facility is located, topography and soils are the product of glacial scouring and deposition of till (SCS, 1981:116).

Figure 3. Facility Site Topography and Surficial Geology



Due to the Facility's upland setting, surficial geology within the Facility Site is dominated by poorly-sorted glacial till deposits dropped by the retreating glacier. A sizeable portion of the Facility Site is also composed of till moraine deposits along its northern and western sides. To a lesser extent, the Facility Site also includes lacustrine sand, kame moraine, and swamp deposits along its eastern, southern, and western sides. A small area in the southern portion of the Facility Site is dominated by bedrock (NYSM, 1999). The surficial geology of the Facility Site is summarized below in Table 1 and depicted on Figure 3.

Table 1. Facility Site Surficial Geology (NYSM, 1999).

Surficial Geology	Acres in Facility Site	Percent of Facility Site	Composition[1]
Till Variable Texture (boulders to silt) (T)	3,871	78	Variable texture (boulders to silt); usually poorly sorted sand-rich diamict; deposition beneath glacier ice; permeability varies with compaction; thickness variable (1-50 meters).
Till Moraine (Tm)	553	11	Variable texture (size and sorting); generally low permeability; deposition adjacent to ice; thickness variable (10-30 meters).
Lacustrine Sand (Ls)	91	2	Generally quartz sand, well sorted, stratified; usually deposited in proglacial lakes, but may have been deposited on remnant ice; generally a near-shore deposit or near a sand source; permeable; thickness variable (2-20 meters).
Kame Moraine (Km)	50	1	Variable texture (size and sorting) from boulders to sand; deposition at an active ice margin during retreat; constructional kame and kettle topography; locally, calcareous cement; thickness variable (10-30 meters).
Swamp Deposits (Pm)	159	3	Peat-muck, organic silt and sand in poorly drained areas, unoxidized, commonly overlies marl and lake silt, potential land instability (2-20 meters).
Bedrock (R)	148	3	Exposed or generally within 1 meter of surface, in some areas saprolite is preserved.
Recent Alluvium	24	0	Oxidized fine sand to gravel, permeable, generally confined to flood plains within a valley, in larger valleys may be overlain by silt, subject to flooding, thickness 1-10 meters,
Kame Deposits	50	1	Coarse to fine gravel and/or sand, includes kames, eskers, kame terraces, kame deltas, ice contact, or ice cored deposition, lateral variability in sorting, texture and permeability, may be firmly cemented with calcareous cement, thickness variable (10-30 meters).

[1] Composition information derives from material explanation used by New York State Museum (NYSM; 2021).

2.2 Existing Conditions

The proposed Facility is located in a rural part of Madison County, approximately 0.1-mile north of the Village of Morrisville and 1.4 miles southwest of the hamlets of Nelson and Peterboro, respectively. Existing

conditions within the Facility Site were evaluated with aerial imagery, topographic maps, digital elevation model (DEM) data, and National Land Cover Database (NLCD) data (MRLCC, 2016). General observations of existing conditions within the Facility Site include the following:

- Terrain within the Facility Site is characteristic of the Appalachian Uplands physiographic province. As stated in Section 2.1 above, the Facility Site is situated across rugged hills with gently to steeply-sloping sides and gently-sloping to nearly level benches and saddles. Elevations within the Facility Site range from approximately 1,200 to 1,900 feet above mean sea level. The Facility Site is bisected by several small headwater streams that flow into Chenango River to the south, Blue Creek to the southeast, Morrisville Swamp to the southeast, Electric Light Stream to the southeast, Callahan Brook to the east, and Munger Brook to the northwest.
- Land use within the Facility Site is typical for a rural, agricultural area in Central New York and consists of cultivated crop fields, hay fields, pastures, fallow fields in various stages of secondary succession, shrubland, and large patches of undeveloped, second-growth forest.
- Forest comprises the largest portion of the Facility with deciduous and coniferous woodland (including woody wetlands) accounting for approximately 54 percent of the Facility Site. A substantial portion of the Facility is utilized for agriculture; approximately 26 percent of the Facility Site consists of pasture and hay fields while approximately 18 percent is used for cultivated crops (MRLCC, 2016).
- Portions of the Facility Site are poorly drained with wetlands (including former wetlands that have been transformed into artificial ponds) accounting for approximately 6 percent of the Facility Site (MRLCC, 2016). These ponds appear to have been created primarily for recreational purposes, although some may have been formerly used for watering livestock.
- No areas of concentrated settlement occur within the Facility Site. Residential development occurs along roadways and consists of scattered homes and farms, often widely spaced apart. Roadways within the Facility Site are paved, generally bounded by ditches, and are generally oriented roughly north-south and east-west as a result of topography.

2.3 Previous Archaeological Surveys

EDR consulted the NYSHPO's online CRIS database, and county maps used by the NYSHPO prior to the implementation of the CRIS database, to determine if previous archaeological surveys have been conducted within or adjacent to (i.e., within 500 feet) the Facility Site. According to the CRIS database, four previous archaeological surveys overlap with portions of the Facility Site. One additional previous archaeological survey has been conducted adjacent to the Facility Site. These previous surveys are described below and depicted on Figure 4.

- Survey 23SR00080 is a previous version of this Phase IA survey, conducted in 2023 by EDR, in advance of the proposed Hoffman Falls Wind Project (EDR, 2023).
- Survey 15SR00124 is a combined Phase IA and IB survey, conducted in 2015 by EDR, in advance of a proposed substation (EDR, 2015). The survey was conducted along the north side of Cody Road, located within the northwestern portion of the Facility Site. Shovel testing identified no archaeological resources.

- Survey 21SR00524 is a Phase IA survey, conducted in 2021 by EDR, in advance of the proposed Blue Hill Wind Project (EDR 2022). This survey is located entirely within the Facility Site. A review of this survey did not identify any additional archaeological sites located within 1 mile of the Facility Site that were not already depicted in the CRIS database (see Section 2.3 below).
- Survey 21SR00376 is a Phase IA survey, conducted in 2021 by EDR, in advance of the proposed Oxbow Hill Solar, LLC solar project (EDR, 2021i). This survey overlaps with a portion in the northwest corner of the Facility Site (Figure 4). A review of this survey did not identify any additional archaeological sites located within 1 mile of the Facility Site that were not already depicted in the CRIS database (see Section 2.3 below).
- Survey 08SR58220 represents a Phase IA-level inventory, conducted in 2008 by Eugene Boesch, of all known archaeological sites on-file with the NYSHPO, New York State Museum (NYSM), and the Office of the Oneida Indian Nation Historian located within 1,000 feet of Oneida Nation-owned parcels placed into federal trust in 2008 (Boesch, 2008). (see Section 2.3 below).

2.4 Previously Identified Archaeological Sites

EDR consulted the NYSHPO's online CRIS database to determine if previously recorded archaeological sites **BEGIN CONFIDENTIAL<** [redacted] **>END CONFIDENTIAL**

The previously identified sites consist of four Native American and one historic-period archaeological site (Table 2). **BEGIN CONFIDENTIAL<** [redacted] **>END CONFIDENTIAL** Little information is available regarding the four Native American sites due to a lack of formal investigation; however, it should be noted that NYSM sites depicted in CRIS typically indicate areas of elevated archaeological sensitivity and should not be considered equivalent to formally tested and delineated archaeological sites. One historic archaeological site, The Gillman Site, has been formally documented:

- The Gillman Site **BEGIN CONFIDENTIAL<** [redacted] **>END CONFIDENTIAL** The site was identified in 2002 during Phase I survey for a proposed waterline and further evaluated by Phase II investigation in 2006 (PAF, 2002; 2006). Shovel testing and test unit excavations identified 350 artifacts within the topsoil and fill deposits including ceramics, faunal remains, architectural material, lighting material, and personal items. The site was recommended ineligible for inclusion in the S/NRHP due to limited integrity and research potential as a result of disturbance.

Figure 4. Previous Archaeological Surveys and Previously Identified Archaeological Sites

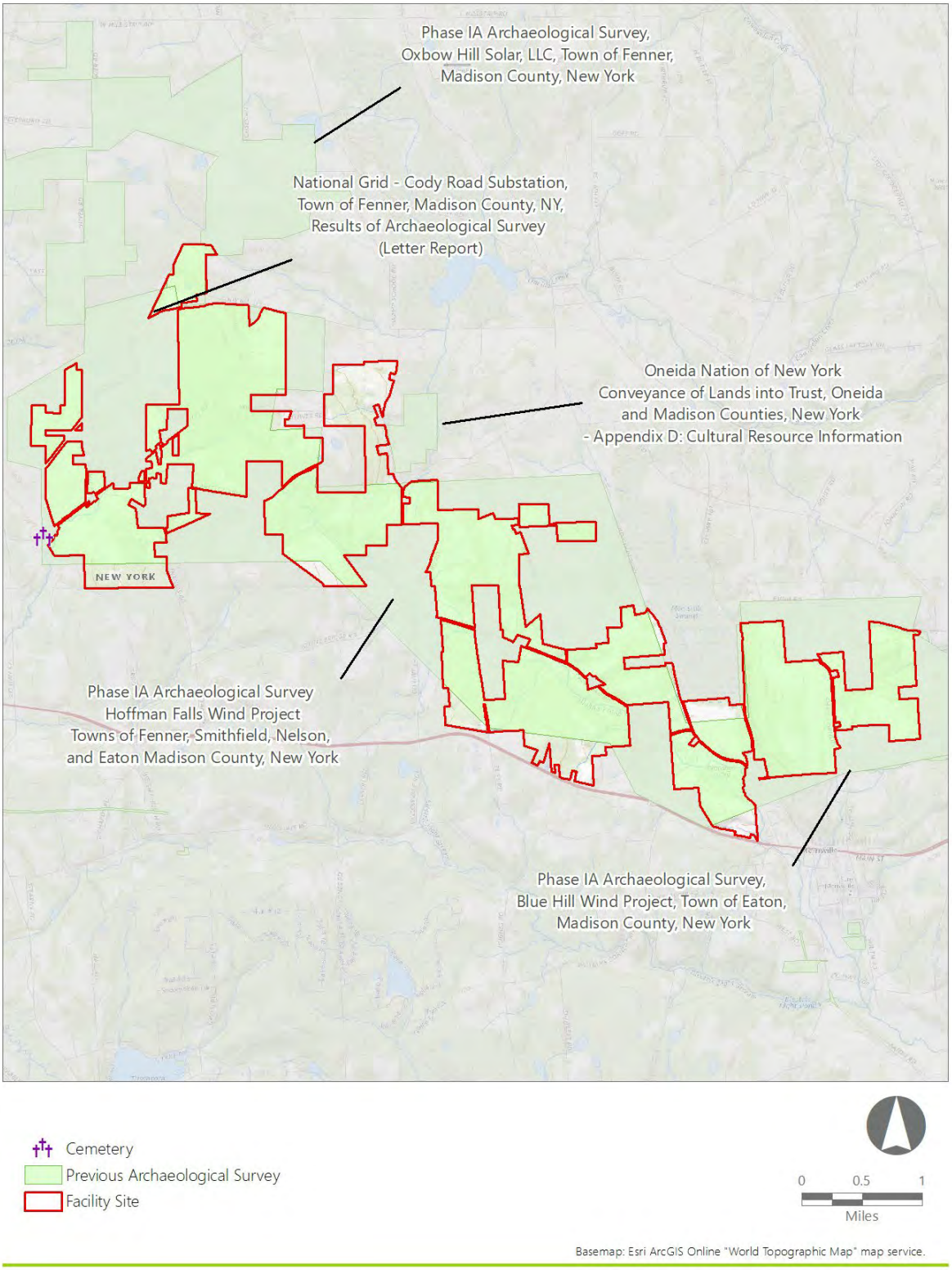


Table 2. Previously Identified Archaeological Sites within 1-Mile of the Facility Site.
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Site/Area Number	Site Name	S/NRHP-Eligibility	Site Description	Distance from Facility Site (miles)
[redacted]	-	Undetermined	Native American traces of occupation	[redacted]
[redacted]	-	Undetermined	Native American earthwork	[redacted]
[redacted]	-	Undetermined	Native American traces of occupation	[redacted]
[redacted]	Gillman Site [redacted]	Ineligible	Nineteenth century residential artifact scatter associated with an extant house dating to ca. 1848	[redacted]
[redacted]	-	Undetermined	Apparent Native American lithic/tool scatter	[redacted]

>END CONFIDENTIAL

2.5 Cemeteries

EDR consulted the NYSHPO's online CRIS database and U.S. Geological Survey (USGS) topographic quadrangles to determine if previously identified/mapped cemeteries are located within or adjacent to (i.e., within 500 feet) the Facility Site. According to the CRIS database and USGS, no cemeteries are located within the Facility Site. One cemetery, Lyons Cemetery, is adjacent to the Facility Site. The Applicant will ensure that the cemetery and its immediate vicinity are avoided by all Facility-related impacts. Although no mapped cemeteries are located within the Facility Site, it is possible that additional private family plots that have not been previously reported in published and available mapping sources may also be present.

2.6 History of the Facility Site

Archives and repositories consulted during EDR's research for the Facility included the online digital collections of the Library of Congress, New York State Library, New York Public Library, American Antiquarian Society, David Rumsey Historical Map Collection, and USGS.

Sources reviewed for the Facility include the:

- *Gazetteer of the State of New York: Embracing A Comprehensive View of the Geography, Geology, and General History of the State, and A Complete History and Description of Every County, City, Town, Village, and Locality* (French, 1860);
- *History of Madison County, State of New York* (Hammond, 1872);
- *History of Chenango and Madison Counties*, Vol. 2 (Smith, 1880);

- *Our County and Its People, A Descriptive and Biographical Record of Madison County, New York* (Smith, 1899);
- *Handbook of North American Indians*, Vol. 15: Northeast (Trigger, 1978);
- *The Iroquois* (Snow, 1994);
- *Mohawk Valley Archaeology: The Sites* (Snow, 1995);
- *Oneida Iroquois, Folklore, Myth, and History: New York Oral Narrative from the Notes of H.E. Allen and Others* (Wonderley, 2004)
- *The Encyclopedia of New York State* (Eisenstadt, 2005); and,
- *Current Research in New York Archaeology: A.D. 700-1300* (Rieth and Hart, 2011).

Historic maps consulted during EDR's research for the Facility include the:

- 1776 Sauthier and Ratzer *A Map of the Province of New-York* (Sauthier and Ratzer, 1776; Figure 5);
- 1779 Sauthier *A Chorographical Map of the Province of New-York in North America* (Sauthier, 1779);
- 1792 De Witt *State-Map of New-York* (De Witt, 1792; Figure 6);
- 1796 Reid and Winterbotham *The State of New York, Compiled from the most authentic information* (Reid and Winterbotham, 1796);
- 1804 De Witt *A Map of the State of New York* (De Witt, 1804; Figure 7);
- 1829 Burr *Map of the County of Madison* (Burr, 1829);
- 1840 Burr *Map of the County of Madison* (Burr, 1840);
- 1853 Evans *Topographical Map of Madison County, New York* (Evans, 1853; Figure 8);
- 1859 French *Gillette's Map of Madison Co., New York* (French, 1859);
- 1875 Beers *Atlas of Madison County, New York* (Beers, 1875);
- 1895 Bien *Madison, Chenango, and Broome Counties* (Bien, 1895);
- 1899 USGS *Cazenovia, NY* and 1902 USGS *Morrisville, NY* 1:62500 Topographic Quadrangles (USGS, 1899; 1902 Figure 9); and,
- 1943 USGS *Cazenovia, NY* and *Morrisville, NY* 1:24000 Topographic Quadrangles (USGS, 1943a; 1943b; Figure 10).

Since at least the last glacial recession, humans have occupied the traditional Homeland of the Oneida Indian Nation, which encompasses four recognized "ecoregions:" the Uplands and Gorges of the Finger Lakes (part of the broader Allegheny Plateau), the Mohawk Valley Lowlands, and the Erie-Ontario Lake Plain. In addition, the Oneida hunting grounds previously extended north into the Tug Hill Plateau, Adirondack Mountains, and St. Lawrence River Valley. In many respects, the Oneida Indian Nation Homeland sits at a physiographic and cultural crossroads of eastern North America: it contains portions of the Great Lakes/St. Lawrence watershed, the Mohawk/Hudson watershed, and the Susquehanna watershed. These waterways have provided essential corridors for transportation, communication, and commerce throughout the history of human occupation in North America. According to Dean's (1915) account of the Oneida Creation (reproduced in Wonderley, 2004:62-68), the Oneida descend from the race of the turtle who "came up out of the ground in human form, and for some time multiplied in peace and spread extensively over the surface." The Oneidas "…used to show the precise spot of ground, a small hollow, where they said their ancestors came up" (Wonderley, 2004: 67). Therefore, by this reckoning, the Oneida people have occupied their ancestral territory since time immemorial.

Archaeological evidence suggests that initial occupation in what is now Central New York and the Oneida Indian Nation Homeland began with Paleoindian groups following the retreating Laurentide Ice Sheet around 13,000 years before present (BP). During the ice sheet's retreat, much of Central New York, including the portions of the Oneida Indian Nation Homeland around Oneida Lake, was inundated by pro-glacial Lake Iroquois (essentially a major expansion of Lake Ontario), which quickly drained out the Mohawk and later St. Lawrence River Valleys as the ice sheet receded to the north (Lothrop et al., 2014). The first groups to enter this post-glacial landscape specialized in hunting large game (likely caribou; and possibly mammoth and mastodon) in the recently exposed periglacial tundra and spruce forests. These groups also exploited the diverse floral resources, small game, and fish available in the post-glacial ecosystems (Ritchie and Funk, 1973). Although populations during this time were never high, Central New York was densely settled relative to other parts of the continent. Lothrop et al. (2014) note that the earliest sites in Central New York occur within the former footprint of pro-glacial Lake Iroquois, the eastern end of which was located within the Oneida Indian Nation Homeland. These early groups were highly mobile, but there is also evidence of moderate to large aggregations in certain places during the year (e.g., the Bull Brook sites in Massachusetts) (Curran, 1999).

Post-Glacial conditions stabilized by approximately 10,000 BP, and small groups of hunter-gatherers reduced their mobility to exploit the diverse resources available to them in the newly emerging mixed deciduous/coniferous forests. Although megafauna were now extinct, larger to medium game such as deer, elk, and moose, and perhaps woodland caribou, were still available, as were small game, fish, and wild plants (Funk, 1978). Material culture during this time is characterized by stemmed and corner-notched projectile points as well as the first appearance of notched stone net-sinkers (Funk, 1978). Groundstone plant processing technology, including nutting stones which indicate the first systematic exploitation of mast resources such as acorns, hickory nuts, and chestnuts, was first used after approximately 6,000 BP (Funk, 1978; Ritchie and Funk, 1973:7). Beginning approximately 3,500 BP, regional diversity led to a greater variety of stone tools, including broad, side-notched projectile points, as well as gouges, plummets, and ground slate artifacts (Funk, 1978; Ritchie 1980). Between approximately 4,000 and 3,000 BP, steatite (soapstone) bowls, ceramic vessels, decorative steatite gorgets, and burial ceremonialism appear in the archaeological record (Whitthoft, 1949; Ritchie and Funk, 1973; Tuck, 1978).

The establishment of agriculture in northeastern North America began approximately 2,500 BP, possibly in response to favorable climatic conditions during the Medieval Climatic Anomaly (Fitting, 1978:44). Central and Western New York at this time were within the northeastern edge of the Hopewell cultural sphere, characterized by mound burials and other earthworks, dentate-stamped and rocker-stamped ceramic vessels, elaborate tobacco pipes, and stemmed, side-notched, and triangular unnotched Levanna projectile points (Engelbrecht, 2014; Ritchie and Funk, 1973). Groups in the northeast during this period also maintained extensive trade networks, as evidenced by the presence of exotic goods like fossil shark teeth and some ceramic motifs (Fitting, 1978; Ritchie 1980; Ritchie and Funk, 1973). Smaller settlements were more common during this period, but larger settlements are not documented in Western and Central New York until approximately 1,000 BP. In the centuries following, the appearance of maize (corn), beans, and squash agriculture led to the growth of more substantial village sites, including some protected with

palisades and earthwork defenses (Ritchie and Funk, 1973; Ritchie, 1980). These villages were occupied year-round, although people still traveled far to hunt, fish, harvest plants, and trade (Cowan, 1999).

Archaeological evidence for the development of Iroquoian[1] culture points to a gradual in situ development in Central and Western New York, as opposed to the immigration of Iroquoian groups from outside the region (MacNeish, 1952; Tuck, 1971; Snow, 1994; Hart and Brumbach 2003; 2005; 2009; Brumbach, 2011; Hart, 2011). Haudenosaunee oral history also supports a deep history of occupation within Central and Western New York (Wonderley, 2004).

Archaeologically, the earliest Oneida (or ancestral Oneida) longhouse villages are known from the western portion of the Oneida Indian Nation Homeland, dating between approximately 1350 and 1450 CE. Linguistically, the Oneida language is most closely related to the Mohawk language, and interpretation of linguistics suggests that the ancestral Oneida and Mohawk were a single people. Over time, the western settlements of the group eventually gravitated toward the Onondaga Nation, becoming the Oneida Nation, while the eastern settlements became the Mohawk Nation. This is consistent with the archaeological record where the earliest recognizably Oneida settlements occur at the western edge of the Oneida Indian Nation Homeland, near the lands of the Onondaga Nation (Pratt, 1976; Snow, 1995; Wonderley, 2004).

While sources differ on the specific date of the emergence of the Haudenosaunee, many researchers agree that a formalized Confederacy of five nations (also, the Great League of Peace; the Five Nations; or, the Six Nations) took shape during the late fifteenth or early sixteenth century. The initial five nations of the Haudenosaunee included, loosely from west to east, the Seneca, Cayuga, Onondaga, Oneida, and Mohawk. The Tuscarora later became a member nation in 1722. Initially, the Confederacy functioned indirectly as a religious council, calming internal conflicts through ceremonies associated with the Great Law as prescribed by the Peacemaker (Deganawidah) and Hiawatha. As conflicts arose with neighboring nations and European settlers, the Confederacy's role became more political; however, the member nations largely retained their autonomy (Richter, 2005).

In the seventeenth century, the Oneida Indian Nation occupied a single principal village which was relocated every 10 to 50 years as the need arose. This period was typically the time it took to deplete the locally available wood and fertile soil immediately proximate to a village, and for the houses in the village to fall into disrepair (Wonderley, 2004; Jones, 2010). At the time of European contact, the main Oneida village (located near present-day Munnsville) was described by a Dutch journalist in 1634 as being palisaded and containing 66 houses (Beauchamp, 1900; Jameson, 1909; Pratt, 1976; Campisi, 1978). Over the following century and a half, the principal village of the Oneida Indian Nation moved several times, but was always located along Oneida Creek (Campisi, 1978).

European explorers and traders began visiting Central New York by the mid-seventeenth century. Dutch and English land companies and settlers claimed land farther west into the Mohawk River Valley, thus fueling

[1] The terms Iroquois and Iroquoian are used here to describe indigenous groups with a suite of cultural traits (e.g., ceramic styles and settlement patterns) and linguistic traits. The term Haudenosaunee is used specifically to denote the five (and later) six nation confederacy present from approximately the sixteenth century onward.

pre-existing tensions with the Haudenosaunee regarding the competitive fur trade, international wars, and diseases. Conflicts between the Haudenosaunee and the French continued into the eighteenth century as French forts were established throughout New York. Following the French and Indian War, the 1768 Treaty of Fort Stanwix established a boundary line to demarcate the Haudenosaunee, Delaware, and Shawnee territories and regulate westward colonial expansion. This boundary, sometimes referred to as the "Line of Property," extended southwest from the Susquehanna River in New York to the mouth of the Tennessee River. In exchange, the Haudenosaunee forfeited their claims to the Ohio River Valley. Although the treaty bound colonists to remain east of the line, many continued to migrate and settle on Native land (Obomsawin, 2005; Preston, 2005; Thomas, 2005).

During the early- to mid-eighteenth century, there were at least 24 Oneida villages between the St. Lawrence and Susquehanna Rivers (Figure 5). In 1722, the Oneida sponsored the Tuscarora in joining the Haudenosaunee as a sixth nation of the Confederacy, who then settled in Central New York in lands adjacent to the Oneida (Figure 5).

By the 1780s, the Oneida also incorporated the Brotherton and Stockbridge Nations into their territory (Smith, 1880; Obomsawin, 2005; Britannica, 2021; Oneida Indian Nation, 2019). During the American Revolutionary War, both the British and the Americans embraced the aid of various Haudenosaunee member nations, despite the Confederacy's official policy of neutrality. The war divided the Haudenosaunee, with the Oneida and Tuscarora aiding the American colonists and the remaining nations providing support to the British. In retaliation, Washington ordered the Sullivan-Clinton campaign of 1779, where Haudenosaunee homes and crops were burned throughout Central and Western New York. Rev. Samuel Kirkland served as a Presbyterian missionary among the Oneida during the mid- to late-eighteenth century and was instrumental in dissuading the Oneida from joining the British forces during the American Revolutionary War. Kirkland encouraged the adoption of Christianity and the support of the colonists among the Oneida; subsequently, the Oneida fractured into the "First Christian Party" and the "Pagan (traditional) Party" (Smith, 1880; Obomsawin, 2005; Britannica, 2021).

The Haudenosaunee were forced to cede all land west of New York State and Pennsylvania in the second Treaty of Fort Stanwix in 1784; however, the treaty stated that the Oneida and Tuscarora "shall be in possession of the lands on which they are settled" (Lehman, 1990; Oneida Indian Nation, 2019). The following year, the Oneida were forced to sell approximately 300,000 acres (121,406 hectares) in Broome and Chenango counties to New York State to maintain the state's protection. Through a series of treaties negotiated between 1784 and 1789, the Oneida and Tuscarora ceded nearly all their remaining land to the state and federal governments. Lands acquired from the 1788 Treaty of Fort Schuyler were designated as the Chenango Twenty Townships (also referred to as the Governor's Twenty Townships, Governor's Purchase, or Clinton's Purchase) and comprised parts of Oneida, Madison, and Chenango counties. The following year, the 484,000 acres were surveyed by Horace P. Schuyler into twenty numbered townships, which were further subdivided into 250-acre lots (McFee, 2005).

Figure 5. 1776 Sauthier and Ratzer *A Map of the Province of New-York*

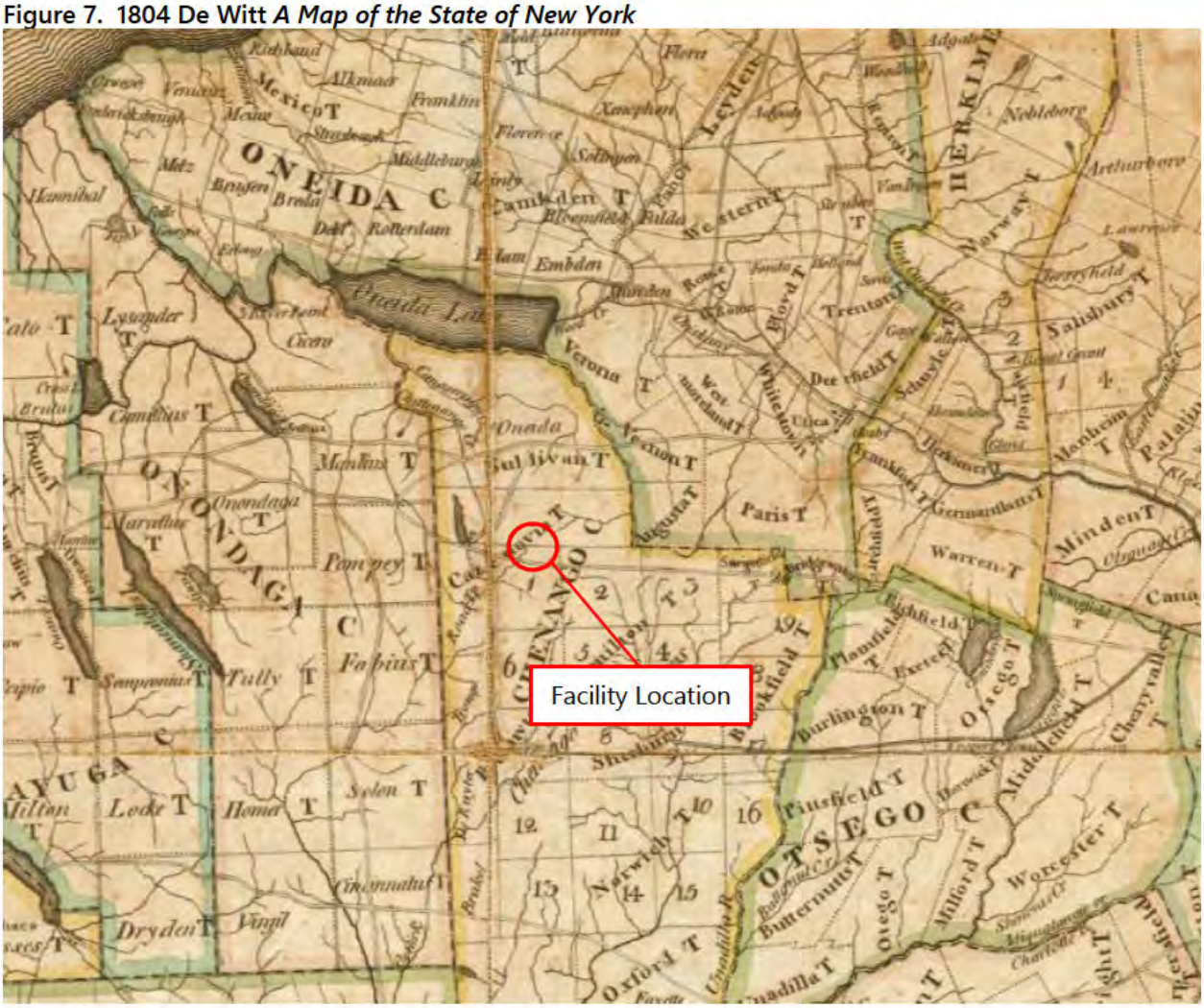
During the eighteenth century, several Oneida villages were present east and south of Oneida Lake. Note the absence of villages in the vicinity of the Facility as well as a Tuscarora village within the Oneida Indian Nation Homeland (Sauthier and Ratzer, 1776; Collections of the Library of Congress).

The 1792 De Witt *State-Map of New-York* depicts the diminished territory guaranteed in previous treaties as the "Oneida Reservation" (Figure 6). The Oneida Reservation appears within the former boundaries of Herkimer County in the late-eighteenth century. The "Onondago" (Onondaga) Reservation is depicted to the west in what is now Syracuse. It is located on lands that were formerly part of Herkimer County, and bordered by Oneida Lake and the Town of Steuben to the north, the Town of Westmoreland to the east, the Town of Paris to the south-southeast, and the Towns of Pompey, Manlius, and Cicero to the west (De Witt, 1792). The Trade and Intercourse Act (also, the Non-Intercourse Act) of 1790 and the Treaty of Canandaigua in 1794 prohibited the sale of Native lands without the participation and consent of the federal government, and reaffirmed Oneida Indian Nation sovereignty, respectively (MacLeitch, 2005; Obomsawin, 2005; Oneida Indian Nation, 2019). While the 1796 Reid and Winterbotham map, *The State of New York, Compiled from the most authentic information*, is less detailed than the 1792 De Witt map, the reservation is not shown with any significant differences to its location or size (Reid and Winterbotham, 1796).

Figure 6. 1792 De Witt *State-Map of New-York*

Despite the aforementioned policies protecting Oneida sovereignty, a series of more than twenty-five treaties with New York State stripped the Oneida of nearly five million acres (2,023,400 hectares) between 1795 and 1846. The 1804 De Witt *A Map of the State of New York* (Figure 7) does not identify the Oneida Reservation, but instead shows the towns and villages established throughout it (De Witt, 1804). During this period, approximately 700 Oneidas left New York and established the Oneida Nation of Wisconsin in Green Bay by 1836. In 1839, another Oneida faction purchased land in what is now Ontario, Canada. By 1845, the New York State Census recorded only 210 Oneidas residing in the state, and in 1849 the state enacted an allotment act that encouraged the division of communally owned land into separate parcels, accelerating the loss of Oneida land (Obomsawin, 2005; Oneida Indian Nation, 2019). The following year, two Oneida communities were established within their ancestral Homeland: the Orchard (later called Marble Hill), a 65-acre parcel in Oneida County, and a 750-acre parcel in Madison County which was eventually named the Windfall (Wonderley, 2004:24).

Figure 7. 1804 De Witt *A Map of the State of New York*



Prior to the formal organization of Madison County in 1806, non-Native settlement was rapid as the expropriated Oneida lands were systematically surveyed by the state, then bought and re-sold by land speculators. Much of Madison County, including the Towns of Fenner and Smithfield which encompass the northern half of the Facility, are located are within the Oneida Reservation. Following the Oneida's displacement, the county's population increased rapidly from 8,036 in 1800 to 25,144 in 1810 as new settlers arrived from New England, elsewhere in New York State, and the British Isles (particularly Wales). There was also a notable population of freed African Americans connected to abolitionist Gerrit Smith in the hamlet of Peterboro.

By 1829, as shown on the Burr *Map of the County of Madison*, the Towns of Fenner, Nelson, and Smithfield, as well as most of the communities within the vicinity of the Facility, were established, including the hamlets of Peterboro and Perryville and the larger settlements of Cazenovia (county seat from 1810 to 1815), Morrisville (county seat from 1815 to 1907), and Canastota. Land within the towns were platted into parcels that were approximately one-half-mile square while roads connected the hamlets and villages (Hammond, 1872; Smith, 1880; Burr, 1829; Burr, 1840; Smith, 1899; Helmer, 2005a; Madison County, 2021).

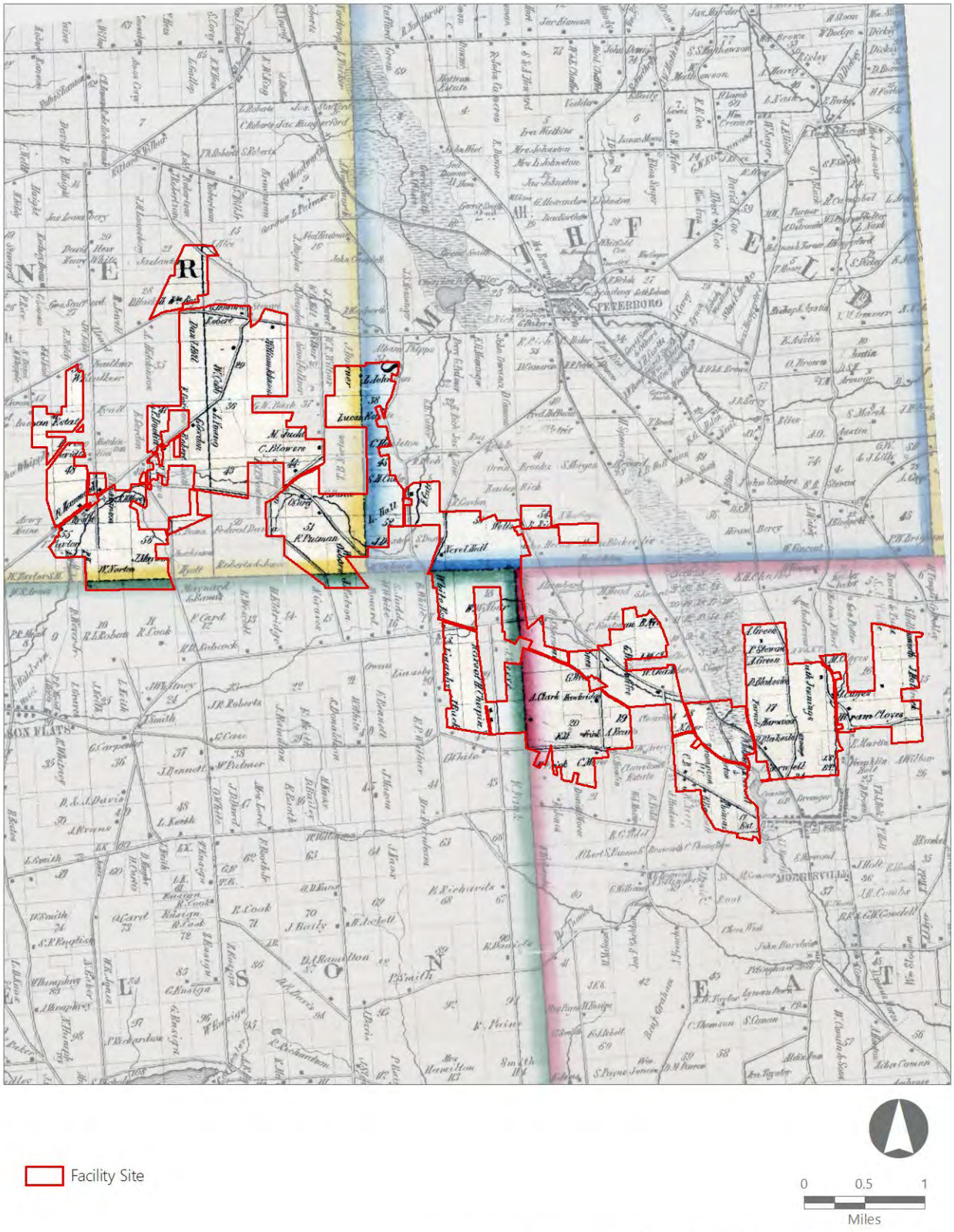
Construction of the Erie Canal commenced on July 4, 1817 in the nearby City of Rome (Oneida County) and was completed on October 26, 1825 in the City of Buffalo (Erie County), thereby linking the Hudson River in the east to Lake Erie and the Great Lakes in the west. The Erie Canal crossed the county north of the Facility in the then-hamlet of Canastota. The Chenango Canal was completed through the Towns of Madison and Hamilton in 1836. Madison County encompassed several lakes and reservoirs, which were integral feeders for both the Erie and Chenango Canals (Hammond, 1872; Smith, 1880; Helmer, 2005a).

A network of state and county roads connecting hamlets and villages developed, and by the mid-nineteenth century the county's population rose to over 45,000. This transportation network included the Seneca Turnpike (formerly, the Great South Genesee Road, Genesee Road, or State Road), the Cherry Valley Turnpike (formerly, the Third Great Western Turnpike), the Peterboro Turnpike, and the Hamilton and Skaneateles Turnpike (Hammond, 1872; Helmer, 2005a). The Cherry Valley Turnpike began in Albany and developed in stages moving west, passing through the Towns of Cazenovia, Eaton, Madison, and Nelson. The turnpike was an important east-west road, despite not passing through any major cities, and was eventually designated as U.S. Route 20 (Route 20 Association of New York State, 2016).

Centers of population tended to develop at the intersections of transportation corridors. On the 1853 Evans *Topographical Map of Madison County, New York* (Figure 8) and 1859 French *Gillette's Map of Madison Co., New York*, the previously noted Village of Morrisville and hamlet of Peterboro appear well established, while nearby Nelson Flats (now Nelson) and Perryville are depicted as a cluster of about a dozen buildings (Evans, 1853; French, 1859). In 1870, construction began on the Cazenovia and Canastota Railroad, connecting with the New York Central line in Canastota. The line ran north-south through Madison County, with stops in Chittenango Falls, Perryville, and Clockville. The railroad was bankrupt within a few years and acquired by the Elmira, Cortland, and Northern Railroad, and by 1898 it was part of the Lehigh Valley Railroad (William G. Pomeroy Foundation, 2020). Madison County was also serviced by the Syracuse and Utica, the West Shore, the Unadilla Valley, and the New York, Ontario and Western Railroads, along with other local branches. Unable to compete with the profitability and efficiency of the railroads, the use of the Erie and Chenango Canals gradually declined (Hammond, 1872; Helmer, 2005a).

These major nineteenth-century transportation routes framed the communities in the vicinity of the Facility, leaving the center of the area dominated by agriculture. Hops was the leading crop until a blight decimated the industry in the early-twentieth century; in 1874, Madison was the second largest hops-producing county in New York State with 2,670,457 pounds of hops. The fertile soil lent itself to grain crops, such as wheat and barley, as well as tobacco and apples. The dairy industry developed rapidly beginning in the late 1830s and continued to thrive through the nineteenth century. By 1874, Madison County was home to 78 factories, which processed nearly five million pounds of cheese and 334,228 pounds of butter. The railroads bolstered this industry as an expedient transportation method for perishable raw milk and other dairy products. Manufacturing enterprises were limited to the main villages and remained small-scale (Smith, 1880).

Figure 8. 1853 Evans *Topographical Map of Madison County, New York*



Basemap: 1853 Evans *Topographical Map of Madison County, New York*
This historic map has been georeferenced and is not intended to depict survey-accurate information.

The Town of Fenner was formed in 1823 from the New Petersburgh and Mile Strip tracts in what is now the Towns of Cazenovia and Smithfield. The land was originally leased (1794) and later purchased (1797) directly from the Oneida. During initial settlement, agriculture and related industries led the economy, supplemented by quarrying and milling. The town remains rural in nature, with the total population consistently below 2,000 and limited to the hamlets of Perryville (split between the Towns of Fenner, Sullivan, and Lincoln) and Chittenango Falls (split between the Towns of Fenner and Cazenovia). Dairying is the primary agricultural activity in the twenty-first century (French, 1860; Hammond, 1872; Smith, 1880; Helmer, 2005b; Town of Fenner, 2021).

The Town of Nelson was formed in 1807 from the Town of Cazenovia and settled substantially by Welsh immigrants. During the nineteenth century, the leading industry was dairying, which was bolstered by local processing plants, factories, and related industries. The hamlet of Nelson (then, Nelson Flats) developed along the turnpike in the early-nineteenth century. In the twenty-first century, the town remains rural and lightly populated, with the majority of the southern section occupied by the Tioughnioga State Wildlife Management Area. U.S. Route 20 (the former Cherry Valley Turnpike) bisects the northern half of the town (Smith, 1880; Helmer, 2005c).

The land comprising the Town of Smithfield was purchased by New York City businessman Peter Smith in 1795; the town was later formed in 1807. Starting out as a trader, Smith developed successful relationships with the Oneida, which led to a lease agreement for 50,000 acres. He established his land office in the hamlet of Peterboro (Peterborough, prior to 1894), subdividing and selling parcels from his holdings. In total, he was reported to have acquired between 500,000 and 1,000,000 acres across the state. His son, Gerrit, became a well-known abolitionist and philanthropist. Gerrit's estate, which contained his father's land office, was designated as a National Historic Landmark in 2001. It is also an Underground Railroad site recognized by the National Park Service and Heritage New York. A cheese factory and several mills were established in Peterboro, while dairying and hops cultivation formed the basis of Smithfield's economy throughout the nineteenth century. No major transportation corridors serve the town, and aside from Peterboro, there are no concentrated centers of population in the twenty-first century (Smith, 1899; Helmer, 2005d; Madison County, 2021).

The land use within Madison County remained primarily agricultural throughout the twentieth century (Figure 9 and Figure 10), with the most notable development being the transportation corridors. The Cherry Valley Turnpike became the property of New York State and was designated U.S. Route 20 in 1926 (Route 20 Association of New York State, 2016). In 1967, the Elmira, Cortland, and Northern Railroad closed and the tracks were removed (William G. Pomeroy Foundation, 2020). A 3.5-mile length of the former railbed leading north from Cazenovia was adapted for the multi-use Gorge Trail. Post-World War II housing development in the vicinity of the Facility primarily occurred within and near the Villages of Canastota, Chittenango, and Cazenovia and along the shore of Cazenovia Lake, with scattered rural residences along state and county roads.

Figure 9. 1899 USGS *Cazenovia, NY* and 1902 USGS *Morrisville, NY* 1:62500 Topographic Quadrangles

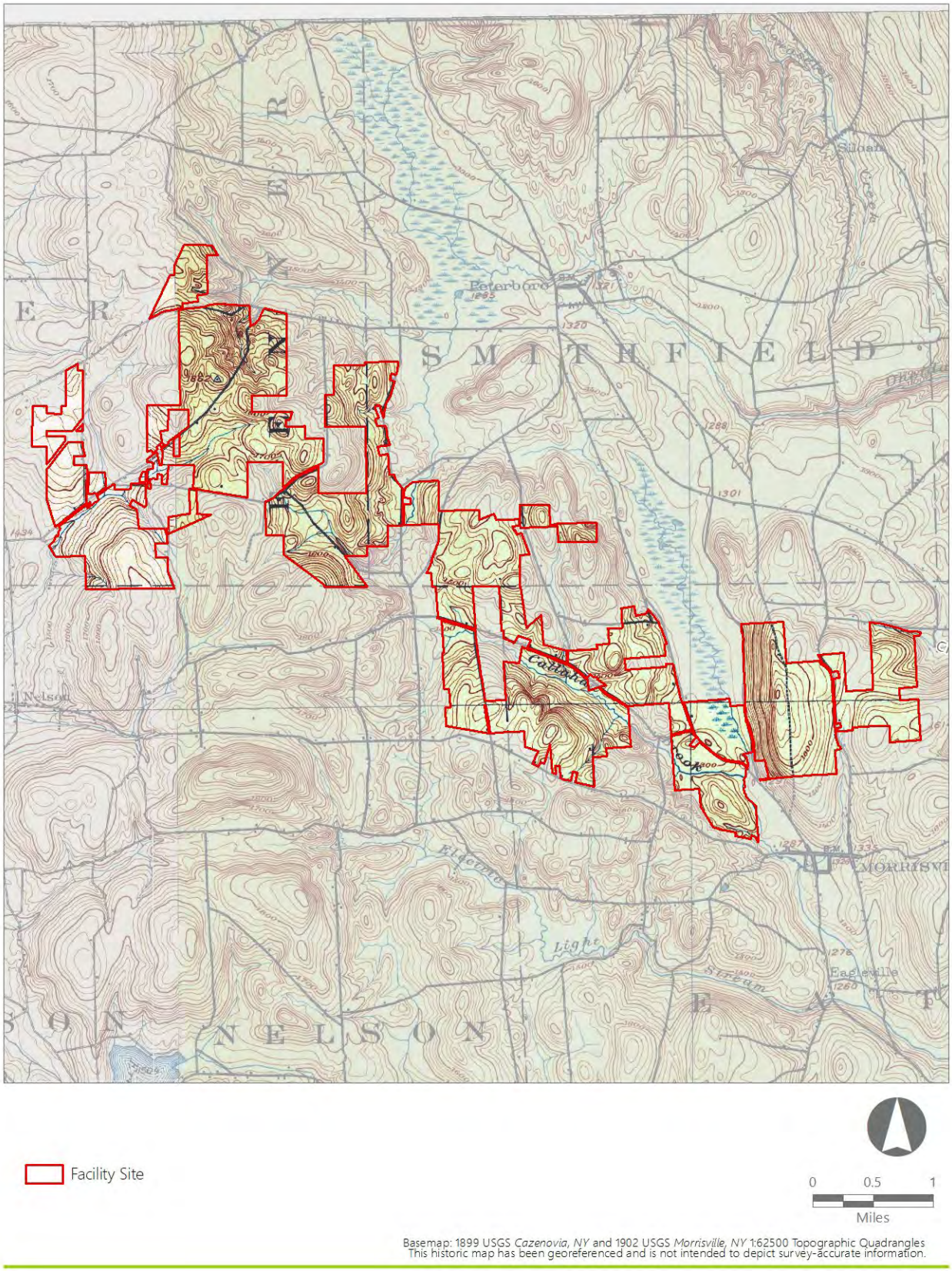
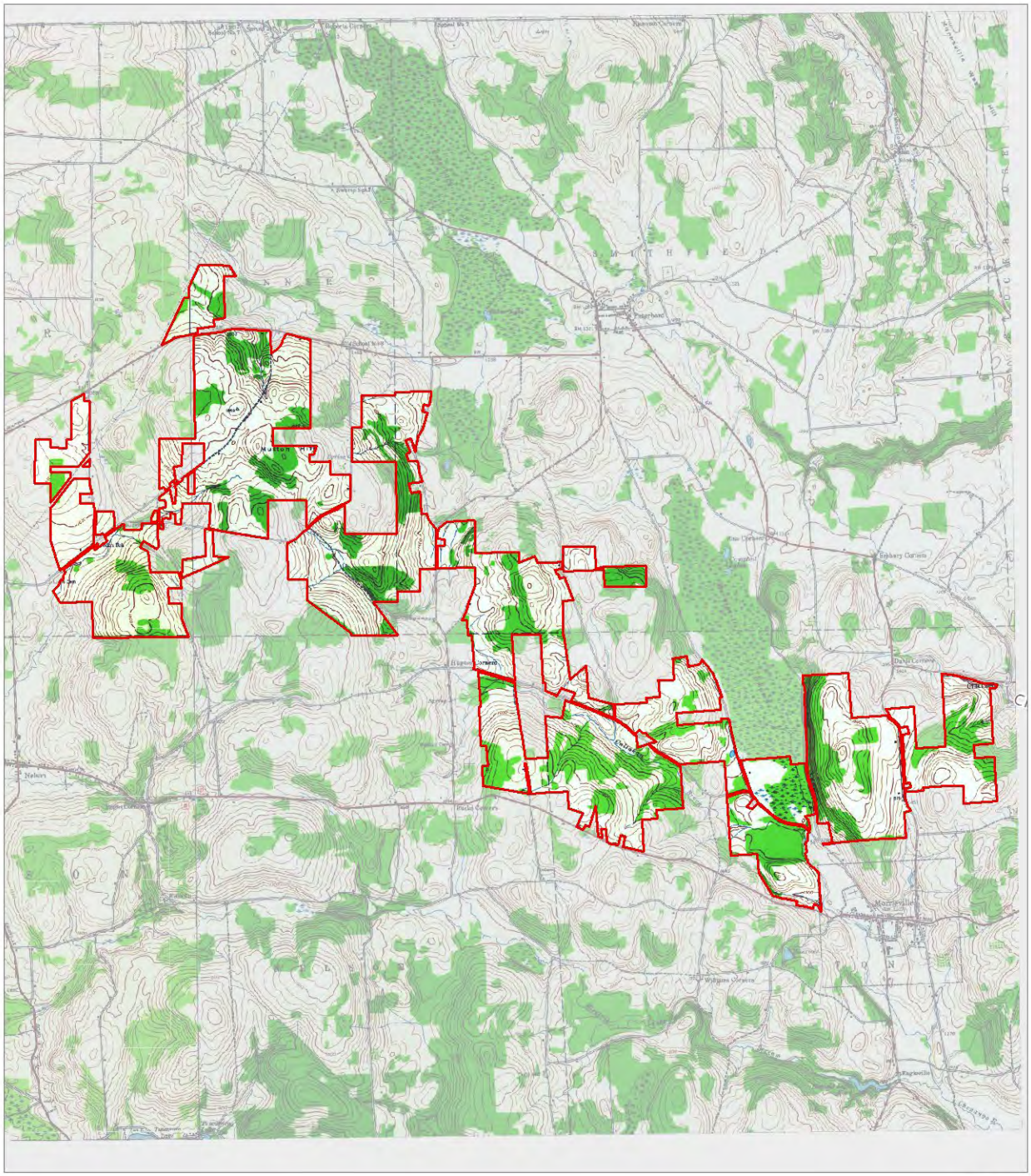


Figure 10. 1943 USGS *Cazenovia, NY* and *Morrisville, NY* 1:24000 Topographic Quadrangles



Facility Site

0 0.5 1
Miles

Basemap: 1943 USGS *Cazenovia, NY* and *Morrisville, NY* 1:24000 Topographic Quadrangles
This historic map has been georeferenced and is not intended to depict survey-accurate information.

By the early-twentieth century, the Oneida Indian Nation's lands were reduced to two plots, 32 acres (13 hectares) and 65 acres (26 hectares), on Marble Hill in Oneida and Madison counties (Obomsawin, 2005; Oneida Indian Nation, 2019). Litigation regarding illegal treaties and Oneida land restitution continued into the twenty-first century. The tide of dispossession began to turn for the Oneida when a series of events in 1909 initiated two court cases pertaining to Oneida Indian Nation land claims (United States v. Boylan et al. [1916-1919] and Boylan et al. v. United States [1920-1922]). In short, these cases rested on the assertion that land held communally by the Nation could not be mortgaged or sold by an individual. This allowed the Oneida Indian Nation to retain a 32-acre parcel of land in Madison County (Wonderley, 2004:192-220). In 1970, the Oneida Indian Nation filed a federal lawsuit for the return of land in Oneida and Madison counties. The 1977 ruling established that treaties between individual states and Tribal Nations which were not ratified by the federal government were void because, according to federal law, only the federal government had the authority to negotiate and sign treaties with sovereign Tribal Nations. Therefore, a purchase of Oneida lands by the State of New York in 1795 had been illegal and invalid under federal law. While this case was precedent setting and reaffirmed the Nation's sovereignty, no settlement was issued at the time, so it meant little in practical terms for the Oneida Indian Nation (Halbritter and McSloy, 1994; Wonderley, 2004; Oneida Indian Nation, 2020a, 2020b).

While the U.S. Supreme Court ruled in the Nation's favor, settlement negotiations were largely inconclusive until the involvement of the U.S. Justice Department (on behalf of the Oneida) in 1998-1999. The Oneida first reclaimed 42 acres (17 hectares) near the City of Oneida in 1987. In 2008, the Bureau of Indian Affairs accepted 13,004 acres (5,263 hectares) of Oneida-owned land into federal trust, and an additional 4,200 acres (1,700 hectares) in 2017 (Obomsawin, 2005; Oneida Indian Nation, 2019).

In the twenty-first century, Madison County remains predominantly agricultural; however, the number of active farms has reduced dramatically. As of 2017, there were just under 700 farms in operation with approximately one-third of the land under cultivation (USDA, 2017). Regional manufacturing is primarily limited to the Diemolding Corporation, Owl and Wire Cable, and Ferris Industries. Despite its rural character, the county population has steadily increased from 46,214 in 1950 to 69,441 in 2000. More recently, land use has been diversified following the introduction of multiple renewable energy projects, including three commercial wind farms and the installation of the country's first solar cap on a municipal landfill (Madison County Planning Department, 2016; 2021). Today, the Oneida Indian Nation is located within two counties in Central New York State, encompassing nearly 18,000 acres (7,284 hectares). The largest concentrations of the Nation's noncontiguous land holdings are located on both sides of the New York State Thruway (Interstate 90) in the Towns of Vernon and Verona (in Oneida County), and in the Stockbridge Valley along both sides of Oneida Creek. Of the nearly 1,000 enrolled members of the Oneida Indian Nation, approximately 500 reside in Central New York. The Oneida Indian Nation Enterprises, which includes the Turning Stone Resort Casino and service stations (mostly in Oneida County), is the largest regional employer providing around 4,000 jobs. Many Madison County residents also commute to nearby cities in the surrounding counties for employment opportunities (Helmer, 2005a; Oneida Indian Nation, 2019, 2020a, 2020b).

3.0 ARCHAEOLOGICAL SURVEY RESEARCH DESIGN

EDR has prepared a Phase IB archaeological survey research design based on NYSHPO guidance concerning the development of archaeological sensitivity models and required locations of Phase IB archaeological testing for similar renewable energy projects, as well as at the request of the NYSHPO in a project review letter received on June 21, 2021 (Lloyd, 2021; see Section 1.3 above and Appendix A). This section of the Phase IA report presents the Archaeological Sensitivity Model for the Facility Site and the proposed methodology for Phase IB Archaeological Survey, which collectively are the Phase IB Survey Research Design for the Facility.

3.1 GIS-Based Archaeological Sensitivity Model

The primary assumption behind the assessment of archaeological sensitivity is that pre-industrial populations located their settlements in areas that maximized their access to key subsistence resources (e.g., water, fish, game, wild plant foods, and domesticated plants). Therefore, major habitation sites are often located on flat terrain, along major streams and rivers, in proximity to wetlands, and on well-drained soils. In addition to these environmental variables, the presence and proximity of previously recorded archaeological sites and map-documented structures (MDS), or other features depicted/described on historical maps, historical sources, and/or oral history, are useful indicators of archaeological sensitivity.

Based on EDR's experience with recent NYSHPO consultation, a GIS-based archaeological sensitivity model was calculated for the Phase IB Archaeological Survey (Figure 11). The Archaeological Sensitivity Model provides a more refined assessment of locations where there is higher relative potential for humans to have occupied the landscape (and therefore, where archaeological sites are more likely to be present). The model defines areas within the APE that meet the criteria below, and therefore have an elevated sensitivity for archaeological resources:

- **Criterion 1**: Within 100 meters (328 feet) of permanent water (rivers, streams, wetlands, ponds and lakes, and hydric soils) and on slopes equal to or less than 12 percent.
- **Criterion 2**: Within or near known archaeological sites.
- **Criterion 3**: Within 61 meters (200 feet) of standing or demolished historic structures.

EDR's archaeological sensitivity model incorporated data specific to this Facility and applied them to the NYSHPO's criteria as follows:

- **Criterion 1**: EDR incorporated this criterion into the archaeological sensitivity model with no alterations or additions.

- **Criterion 2**: EDR reviewed the five previously identified archaeological sites located within approximately 1 mile of the Facility Site (see Section 2.4) and sorted each site into categories based on cultural affiliation, the presence/absence of a well-delineated site boundary, and the reliability

of the locations/boundary data. EDR's model applied areas of potential sensitivity around these reported site locations using the following methodology:

1. *NYSM Areas*: NYSM Areas mapped in CRIS represent general areas where Indigenous artifacts were reported in the early-twentieth century. The geographic extent of these areas as depicted in CRIS are considered to be archaeologically sensitive and are included in the model without alteration.

2. *Indigenous archaeological sites without fully delineated boundaries*: This category includes Indigenous archaeological sites depicted in CRIS that have not been fully delineated (e.g., the site extends outside the limits of a previously surveyed area) or sites for which boundaries could not be accurately located (e.g., poor mapping) or were not provided in the survey report and/or site record in CRIS. Due to this uncertainty, areas within 300 feet of these sites are considered to be archaeologically sensitive. If a partially delineated site boundary could be accurately georeferenced, these areas were digitized and then buffered by 300 feet. A 300-foot sensitivity buffer represents a conservative evaluation of the location data, thereby increasing the likelihood of sites being relocated and/or associated cultural deposits to be identified.

3. *Historic-period archaeological sites without fully delineated boundaries*: This category includes historic-period archaeological sites depicted in CRIS that have not been fully delineated using the criteria described above. Due to this uncertainty, areas within 100 feet of these sites are considered to be archaeologically sensitive. If a partially delineated site boundary could be accurately georeferenced, these areas were digitized and then buffered by 100 feet. Because these sites are typically associated with previously identified features (e.g., an MDS), a 100-foot sensitivity buffer represents a conservative evaluation of surrounding areas thereby increasing the likelihood of sites being relocated.

4. *Archaeological sites with fully delineated boundaries*: This category includes archaeological sites depicted in CRIS that have fully delineated site boundaries (e.g., determined through radial testing) and can be accurately georeferenced. The extents of these sites have been digitized and are considered to be archaeologically sensitive. No additional buffers were added to these sites as their spatial extents have already been defined.

- **Criterion 3**: EDR digitized the MDS locations from the georeferenced historic maps depicted in Figure 6 through Figure 10. Areas within the Facility Site located within 200 feet of MDS locations are considered to be archaeologically sensitive for residential and/or farmstead sites, including a potential for foundations, structural remains, artifact scatters, and other features. As these maps are georeferenced from modern features, potential errors can occur due to historic cartographic inaccuracies, differences in scale, and changes in the modern landscape.

THIS FIGURE HAS BEEN REMOVED FROM THIS PUBLICLY AVAILABLE REPORT BECAUSE IT CONTAINS PROTECTED/CONFIDENTIAL ARCHAEOLOGICAL SITE INFORMATION.

As described in Section 2.6 above, historic-period occupation in the vicinity of the Facility Site has been documented in historical mapping since the nineteenth century. The locations of MDSs and roadways within and near the Facility Site are depicted on the 1853 Evans *Topographical Map of Madison County, New York* (Figure 8), the 1859 French *Gillette's Map of Madison Co., New York*, the 1875 Beers *Atlas of Madison County, New* York, the 1899 USGS *Cazenovia, NY* and 1902 USGS *Morrisville, NY* 1:62500 Topographic Quadrangles (Figure 9), and the 1943 USGS *Cazenovia, NY* and *Morrisville, NY* 1:24000 Topographic Quadrangles (Figure 10). The locations of MDSs depicted on these maps were digitized as part of the archaeological sensitivity model and are shown on Figure 11.

MDS locations within and near the Facility Site are generally located adjacent to existing and abandoned roadways. Potential archaeological resources associated with these MDS locations may include abandoned residential and/or farmstead sites, where the complete residential and/or agricultural complex consisting of foundations, structural remains, artifact scatters, and other features, would constitute an archaeological site. In other locations, more limited remains of these sites, perhaps represented by only a foundation or an artifact scatter, may be present. As depicted on Figure 11, areas located in the immediate vicinity—within approximately 200 feet (61 meters)—of MDS locations are considered to have an elevated sensitivity for the presence of mapped and otherwise associated historic-period archaeological resources. The remaining portions of the Facility Site exhibit minimal (if any) likelihood for the presence of significant historic-period archaeological sites.

The northwest portion of the Facility Site is located within the Oneida Indian Reservation (that portion within the Towns of Fenner and Smithfield). Historic maps were consulted with the intent of identifying locations of historically-documented Oneida villages/occupation to determine if additional or amended Phase IB testing strategies within the Facility, or portions thereof, are warranted. This review did not identify cartographic evidence of historic-period Oneida occupation within or adjacent to the Facility (Figure 5).

As depicted on Figure 11, approximately 25 percent (1,282-acres) of the Facility Site is identified as having Elevated Sensitivity (or 'high sensitivity') for archaeological sites.

3.2 Phase IB Archaeological Survey Methodology

Per recent NYSHPO guidance (see Section 1.4 above), the Phase IB survey for the Facility will include archaeological survey or testing within the APE located in areas of Elevated Sensitivity. The APE will be determined based on the Facility Design (or layout), which is in the process of being developed by the Applicant. Archaeological survey will be conducted using the following standard field methods:

- **Pedestrian Surface Survey: Fields Planted in Row Crops**. In existing crop fields and/or previously cultivated areas with greater than 70 percent ground-surface visibility, archaeologists will conduct a pedestrian surface survey to determine whether archaeological sites are present, in accordance with the NYAC Standards (NYAC, 1994). In these areas, archaeologists will traverse the APE transects spaced at 3- to 5-meter intervals while inspecting the ground surface for artifacts and/or archaeological features. The timing for this work is critical because surface survey needs to be conducted after a field has been freshly plowed and disked, and preferably following a rain event.

If any artifacts or other indication of an archaeological site is observed on the ground surface, then the locations of finds will be recorded using sub-meter accuracy Global Positioning System (GPS) equipment. In the vicinity of identified artifacts, transect intervals will be reduced to delineate site boundaries and the extent of cultural material. After recording the locations of artifacts and/or features in a given area, archaeologists will collect a representative sample of observed artifacts for subsequent laboratory identification and analysis. The primary goal of Phase IB surface survey methodology will be to determine site spatial boundaries. Judgmentally located shovel test pits (STPs) may be completed near surface finds to characterize the soils in the immediate area and to assess the potential for additional buried artifacts and deposits.

- **Shovel Test Pits: Hay Fields, Forests, and Shrubland**. In areas of Elevated Archaeological Sensitivity not suitable for pedestrian surface survey, archaeologists will excavate shovel test pits (STPs) to determine whether archaeological sites are present. STPs will be excavated along transects at 50-foot (15-meter) intervals, and in open areas in a grid pattern at 50-foot spacing (averaging 16 STPs per acre). STPs excavated for the Facility will be 30 to 50 cm in diameter and excavated to sterile subsoil or the practical limits of hand excavation (NYAC, 1994). Field data will be recorded for each STP that describe soil stratigraphy and record whether any artifacts were recovered. All soils excavated from STPs will be screened through 0.25-inch hardware cloth. If an isolated Native American-related artifact is recovered from an isolated STP, then up to eight additional STPs will be excavated at 1- and 3-meter intervals around the original STP to determine whether the artifact represents an isolated find or may indicate the presence of a more substantial archaeological site.

- **Shovel Test Pits: Map Documented Structure Locations.** As described in Section 3.1 above, due to the possibility of cartographic and georeferencing inaccuracies, conservative elevated sensitivity buffers (i.e., 200 feet) have been placed around MDS locations. These buffers are intended to serve as a guide for identifying cultural material and features associated with MDSs and not as the limits of testing. If surface features (e.g., cellar hole) or artifacts are identified near or outside the limits of an elevated sensitivity buffer, Phase IB survey will be extended outside the buffer to delineate site boundaries. If a foundation is identified within an area not suitable for pedestrian surface survey (e.g., hay field, forests, and shrubland), per the NYSHPO Guidelines (NYSHPO, 2005), a transect of STPs will be excavated within 1 meter or less of the foundation. STPs within this transect will be excavated at a 7.5-meter (25-foot) or less interval, as will any STP transects excavated in the suspected yard area of the former structure.

Per guidance issued in the *NYAC Standards* (NYAC, 1994), the following portions of the Facility Site will not be subject to Phase IB archaeological survey:

- Areas where ground slope exceeds 12 percent.
- Areas of delineated wetland.
- Any areas that have been subject to prior ground disturbance.
- All areas within the Facility Site where previous cultural resources surveys have been conducted, if applicable (see Section 2.3 above).

Previous ground disturbance within the Facility Site is, for the most part, limited to previous or ongoing agricultural activities. However, farming is not considered significant in terms of its potential to affect the integrity of archaeological resources (NYAC, 1994; NYSHPO, 2005). A small portion of the Facility Site has been disturbed by the Tennessee Gas Pipeline, which runs east-west across the southern portion of the Facility Site between U.S. Route 20 and Old State Road. Additionally, some areas immediately adjacent to existing roads within the Facility Site include drainage ditches, culverts, buried utilities, and areas of cut and/or fill. With the exception of these areas, the Facility Site in general does not appear to have been subjected to significant previous ground disturbance.

As described in Section 2.3 above, four previous archaeological surveys overlap with the Facility Site (see Figure 4). No additional Phase IB testing is proposed where prior Phase IB survey has been conducted.

3.3 Actions Taken in the Event of Discovery of Human Remains

In the event of an unanticipated discovery of potential human remains and/or funerary objects during the Phase IB survey, all work in the immediate vicinity will stop until further notice and the NYSHPO, the county coroner/medical examiner, and local law enforcement will be contacted. The potential remains/funerary objects will be treated with respect, left in situ by on site personnel, and protected from further disturbance. If human remains or funerary objects are determined to be Native American, a treatment plan will be developed in consultation with the NYSHPO and the appropriate Tribal Nations, consistent with established protocols and guidance. These will include NYSHPO's *Human Remains Discovery Protocol* (2021), the Advisory Council on Historic Preservation's "Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects" (ACHP, 2007), and the *Haudenosaunee Policy on Human Remains* (Grand Council of the Haudenosaunee, 2002).

3.4 Phase IB Archaeological Survey Reports and Delivery of Electronic Data

Results of subsequent Phase IB archaeological survey conducted for the Facility will be presented in an illustrated report prepared in accordance with the *NYAC Standards* (NYAC, 1994) and the *NYSHPO Guidelines* (NYSHPO, 2005). Descriptive information for any archaeological sites identified during the Phase IB surveys will be uploaded to NYSHPO's online CRIS database at the same time as the survey report. EDR will also provide accurate location information for any sites identified during the Phase IB surveys via CRIS.

4.0 SUMMARY AND CONCLUSIONS

4.1 Summary of Phase IA Archaeology Survey

Relative to the potential for archaeological sites to be located in the Facility Site, the results of the Phase IA archaeological resources survey for the Facility can be summarized as follows:

- Four previously conducted surveys overlap with portions of the Facility Site. Additionally, a Phase IA level inventory of all known archaeological sites on-file with the NYSHPO, NYSM, and OIN located within 1,000 feet of OIN-owned parcels also includes a parcel located immediately adjacent to the Facility Site (Boesch, 2008).
- A review of the CRIS database identified one NYSM Area associated with NYSM **BEGIN CONFIDENTIAL<** [redacted] **>END CONFIDENTIAL**
- No mapped cemeteries are located within the Facility Site. One mapped cemetery is located adjacent to the Facility Site. The Applicant will ensure that the cemetery and its immediate vicinity are avoided by all Facility-related impacts.
- Historic maps depict structures located along current and abandoned roadways within the Facility Site. Areas located in the immediate vicinity—within approximately 200 feet—of MDS locations are considered to have high potential for the presence of archaeological resources. The remaining (non-MDS) portions of the Facility Site exhibit minimal (if any) likelihood for significant historic-period archaeological sites to be present.
- A review of the Oneida Indian Reservation on historic maps did not identify cartographic evidence of historically-documented Oneida villages/occupation within or adjacent to the Facility. Therefore, no additional or amended Phase IB testing strategies with respect to identifying historic-period Oneida archaeological resources are anticipated.
- EDR developed an archaeological sensitivity model for the Facility, based on guidance and subsequent requested revisions received from the NYSHPO, **BEGIN CONFIDENTIAL<** [redacted] **>END CONFIDENTIAL**

4.2 Summary of Phase IB Survey Recommendations

Construction of the proposed Facility will include ground disturbing activities that have the potential to impact archaeological resources. The APE will include all areas within the limits of disturbance for proposed construction activities and will be determined based on the Facility Design (or layout), which is in the process of being developed by the Applicant.

Portions of the APE that are within areas of Elevated Sensitivity for archaeological resources will be subjected to Phase IB survey consistent with the archaeological sensitivity field methods and research design

presented in this report. EDR has provided this Phase IA archaeological survey to the NYSHPO for review and comment on the proposed research design and field methodology.

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Appendix A

Cultural Resources Correspondence

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

June 21, 2021

Kristen Olson
Project Architectural Historian
Environmental Design & Research
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: ORES
Hoffman Falls Wind Project
Towns of Fenner, Nelson and Smithfield, Madison County, NY
21PR03978

Dear Kristen Olson:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (5NYCRR Part 617).

We have reviewed EDR's Memorandum dated June 16, 2021, and we concur with EDR's proposed Phase IA archaeological investigation. OPRHP looks forward to reading the results of the investigation.

When project plans are available, OPRHP would like EDR to submit an ESRI shapefile containing polygons representing project components that involve ground disturbance.

If further correspondence is required regarding this project, please refer to the OPRHP Project Review (PR) number noted above. If you have any questions, please contact me via email.

Sincerely,

Tim Lloyd, Ph.D.
Scientist - Archaeology
timothy.lloyd@parks.ny.gov

via e-mail only

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

September 9, 2021

Kristen Olson
Project Architectural Historian
Environmental Design & Research
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: ORES
Blue Hill Wind Project
Town of Eaton, Madison County, NY
21PR03989

Dear Kristen Olson:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources.

We have reviewed the report of the Phase IA archaeological investigation (21SR00524). OPRHP requests the following report revisions.

On report Page 29, EDR states

> EDR developed a GIS-based sensitivity model for the Facility Area to identify portions of the APE for Direct Effects which would be more likely to contain archaeological materials than others. Recent NYSHPO [OPRHP] guidance recommends the following criteria to define areas of Elevated Sensitivity for archaeological resources:
>
> 1. Portions of the Facility Area within 61 meters (200 feet) of a historically map-documented structure.
> 2. Portions of the Facility Area within 100 meters (328 feet) of permanent water (rivers, streams, wetlands, ponds and lakes, and hydric soils) and on slopes equal to or less than 12 percent.
> 3. Portions of the Facility Area within 305 meters (1,000 feet) of known archaeological sites (defined as NYSHPO or NYSM sites).

Criterion Number 2 is OPRHP policy. Criteria Numbers 1 and 3 are not OPRHP policy. OPRHP requests that the report text be revised to be clear what is and is not OPRHP policy.

Regarding Criterion Number 1, OPRHP concurs with EDR's use of 61 meters from map-documented structures in the definition of archaeological sensitivity.

Regarding Criterion Number 3, OPRHP does not concur with the use of 305 meters from known archaeological sites in the definition of archaeological sensitivity. Creating buffers around previously recorded archaeological sites for the purpose of guiding Phase IB subsurface testing is problematic and should be developed on a case-by-case basis. OPRHP request that Criterion 3 be removed from the report.

If further correspondence is required regarding this project, please refer to the OPRHP Project Review (PR) number noted above. If you have any questions, please contact me via email.

Sincerely,

Tim Lloyd, Ph.D.
Scientist - Archaeology
timothy.lloyd@parks.ny.gov via e-mail only

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

April 14, 2022

Kristen Olson
Project Architectural Historian
Environmental Design & Research
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: ORES
Blue Hill Wind Project
Town of Eaton, Madison County, NY
21PR03989

Dear Kristen Olson:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources.

Thank you for submitting the revised report of the Phase IA archaeological investigation (No. 21SR00524). The OPRHP concurs with the prosed methods for the Phase IB archaeological survey and we look forward to reviewing the results.

If further correspondence is required regarding this project, please refer to the OPRHP Project Review (PR) number noted above. If you have any questions, please contact me via email.

Sincerely,

Tim Lloyd, Ph.D.
Scientist - Archaeology
timothy.lloyd@parks.ny.gov

via e-mail only

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

February 15, 2023

Kristen Olson
Project Architectural Historian
Environmental Design & Research
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: ORES
Hoffman Falls Wind Project
Towns of Fenner, Nelson and Smithfield, Madison County, NY
21PR03978

Dear Kristen Olson:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

OPRHP has reviewed the Phase IA Archaeological Survey report for the Hoffman Falls Wind Project prepared by Environmental Design & Research, D.P.C, Consulting Archaeologists (January 2023; 23SR00080). OPRHP concurs with the report recommendation that a Phase IB Archaeological Survey is warranted, and we support the Phase IB testing strategy outlined in the report.

If you have any questions, I can be reached at Bradley.Russell@parks.ny.gov.

Sincerely,

Brad Russell

Bradley W. Russell, Ph.D.
Historic Preservation Specialist - Archaeology

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

May 16, 2023

Kristen Olson
Project Architectural Historian
Environmental Design & Research
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: ORES
Hoffman Falls Wind Project
Towns of Fenner, Nelson and Smithfield, Madison County, NY
21PR03978

Dear Kristen Olson:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

OPRHP has reviewed the revised Phase IA Archaeological Survey report for the Hoffman Falls Wind Project prepared by Environmental Design & Research, D.P.C., Consulting Archaeologist (May 2023; 23SR00256). OPRHP concurs with the report recommendation that a Phase IB Archaeological Survey is warranted, and we support the Phase IB testing strategy outlined in the report.

If you have any questions, I can be reached at Bradley.Russell@parks.ny.gov.

Sincerely,

Brad Russell

Bradley W. Russell, Ph.D.
Historic Preservation Specialist - Archaeology