

Environmental Assessment

**Pennichuck Solar Project
Nashua, Hillsborough County, New
Hampshire**



**U.S. Department of Agriculture
Rural Utilities Service (RUS)**

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TABLE OF CONTENTS

1	Introduction	5
1.1	Background	5
1.2	Project Description	5
1.3	Purpose and Need	6
2	Alternatives Evaluated and Proposed Action	7
2.1	Site Alternatives	7
2.2	Proposed Action	7
2.3	No Action Alternative	8
3	Affected Environment	9
3.1	Land Use	9
3.1.1	Important Farmland	9
3.1.2	Formally Classified Land	9
3.2	Floodplains	9
3.3	Wetlands	10
3.4	Water Resources	10
3.5	Coastal Resources	11
3.6	Biological Resources	11
3.6.1	Fish, Wildlife, and Vegetation Resources	11
3.6.2	Listed Threatened and Endangered Species	12
3.6.3	Migratory Bird Treaty Act	13
3.6.4	Invasive Species	14
3.7	Historic and Cultural Properties	14
3.7.1	State Historic Preservation	15
3.7.2	Tribal Historic Preservation	15
3.8	Aesthetics	16
3.9	Air Quality	16
3.10	Socio-Economic/Environmental Justice	17
3.11	Miscellaneous Issues	18
3.11.1	Noise	18
3.11.2	Transportation	19
3.11.2.1	Federal Aviation Administration	19
3.11.2.2	Traffic	19
3.12	Human Health and Safety	20
3.12.1	Electromagnetic Fields and Interface	20
3.12.2	Environmental Risk Management	20
3.13	Corridor Analysis	21
4	Cumulative Impacts	22
5	Summary of Mitigation	24
6	Coordination, Consultation and Correspondence	25
7	References	26
8	List of Preparers	28

TABLE OF APPENDICIES

I	Figures
II	Drawings
III	Site Photographs
IV	Land Use
V	Flood Plains
VI	Wetlands
VII	Water Resources
VIII	Coastal Resources
IX	Biological Resources
X	Historic and Cultural Properties
XI	Tribal Consultation
XII	Air Quality
XII	Socio-Economic/Environmental Justice
XIV	Transportation

ACRONYMS AND ABBREVIATIONS

Aligned	Aligned Climate Capital LLC
APE	Area of Potential Effects
ASP4	Aligned Solar Partners 4 LLC
BMPs	Best Management Practices
CFR	Code of Federal Regulations
DHR	Division of Historical Resources
EJ	Environmental Justice
EMF	Electromagnetic Fields
EPA	Environmental Protection Agency
ESA	Endangered Species Act
E&S	Erosion & Sediment
FAA	Federal Aviation Administration
FCIR	Farmland Conversion Impact Rating
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
GHGs	Greenhouse Gases
GSSG	GSSG Solar, Inc.
HUD	Housing and Urban Development
IPAC	Information for Planning and Consultation
KW	Kilowatts
kWAC	kilowatt, alternating current
kWDC	kilowatt, direct current
kWh	kilowatt-hours
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NH	New Hampshire
NHB	Natural Heritage Bureau
NLEB	Northern Long-eared Bats
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
O&M	Operations & Maintenance
PUC	Public Utilities Commission
PV	Photovoltaics
RECs	Recognized Environmental Conditions
RUS	Rural Utilities Services
TDAT	Tribal Directory Assessment Tool
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish & Wildlife Services

1. INTRODUCTION

1.1 Background

Aligned Climate Capital LLC (Aligned) initiated a loan application to the U.S. Department of Agriculture's (USDA) Rural Utilities Service (RUS) to secure a guaranteed loan on behalf of Aligned Solar Partners 4 LLC (ASP4), a single purpose entity created to own and operate solar photovoltaic projects in Maine and New Hampshire. ASP4 is the proposed borrower. This environmental assessment is provided to support RUS's NEPA review pursuant to the National Environmental Policy Act (NEPA) of the Pennichuck Solar Project (Pennichuck Solar), which is one of the proposed solar generating assets ASP4 is seeking to finance with RUS debt.

Aligned has executed a Term Sheet with GSSG Solar, Inc. (GSSG) to develop and construct this project, which will be a 2,250 kilowatt (kWDC) solar photovoltaic generating unit. Pennichuck Solar will sell 100% of its renewable energy generation to the incumbent electric utility, Eversource, pursuant to New Hampshire State law (RSA 362-A:9, XIV) and NH Public Utilities Commission regulations (NH PUC 900). This project is located at 200 Concord Street, Nashua, NH 03064 on property that will be leased by the project for the purposes of constructing and operating the solar array.

In order to qualify for RUS financing, Aligned recognizes that the RUS must comply with the requirements of NEPA, pursuant to 7 CFR 1970.

1.2 Project Description

The Pennichuck Solar project involves the construction of a 2,250 kWDC and 2,000 kWAC solar photovoltaic (PV) array located at 200 Concord Street, Nashua, NH 03064. The project would cover an approximate 13.57-acre solar farm on a portion of a of a larger 132.50-acre parcel (Reference Appendix I, II, and III). Project components include the installation of 65 rows of photovoltaic panel arrays ground-mounted on single-axis tracking solar racking equipment with a maximum height of 15-feet from the ground surface. The project's construction will proceed through typical steps of overall site preparation, driven posts, racking assemblies, subsurface trenching, transformer and switchgear installation, module and inverter installations, final site finishing, perimeter fencing installation to enclose the arrays, vegetative buffers/ screening, necessary stormwater management Best Management Practices (BMPs), and commissioning. The project will require a gravel access road to provide construction and maintenance vehicles adequate access to the project.

This project will have two interconnections both located near Manchester Street, Nashua, NH. This area is depicted on the enclosed maps and site plans for clarity. All of the project's energy generation will be sold the incumbent electric utility, Eversource, pursuant to New

Hampshire State law (RSA 362-A:9, XIV) and NH Public Utilities Commission regulations (NH PUC 900).

The proposed project would operate seven days per week during daylight hours. Operational activities would consist of monitoring system operation to track status, performance, and diagnostics. Operations activities would include meter reading and production reporting, along with updating operations and maintenance (O&M) manuals. The project will be fenced to prevent access by the public to ensure public safety and protect equipment from theft and vandalism.

The solar field would be inspected once annually for condition of the arrays, inverters, and controls. Damaged or underperforming solar modules would be repaired and replaced as required and as flagged by the monitoring system. No on-site lighting will be present after construction.

The disturbance of land would be limited to 13.57-acres (leased area) during construction, which includes the laydown areas for construction as well as the temporary access road. The site is currently a flat forested area; tree clearing is proposed. The final project area will also include a chain link fence perimeter for protection.

1.3 Purpose and Need

USDA, Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives. This proposed project is seeking federal financial assistance from the RUS.

The purpose of the project is to provide clean renewable energy to the existing electrical grid for the purposes of improving the natural and human environment. The New Hampshire Climate Action Plan recommends maximizing energy efficiency and increasing renewable and low-CO₂-emitting energy sources as two chief strategies for the state to curb energy consumption and greenhouse gas (GHG) emissions. Additionally, the state has established its own ambitious renewable energy goals and those goals can only be meant through cooperation with private projects. As a result, electrical utility providers have been requesting development of renewable energy projects from private entities to help meet or exceed the goal set by the state. Supportive of this Climate Action Plan and renewable energy goals, Pennichuck Solar generates electricity from solar PV modules without emitting any criteria air pollutants or GHG gas emissions. By displacing a portion of the existing electrical demand from fossil fuel generation, the project reduces both criteria air

pollutants and GHG gas emissions. Moreover, the project generates all of its electricity by converting solar irradiance (sunshine) in, so there is no secondary fuel source.

2. ALTERNATIVES EVALUATED AND PROPOSED ACTION

2.1 Site Alternatives

GSSG considered its sites through a process of elimination which involved a wide area search, which was then further refined based on a set of established criteria. Specifically, a substation level review of parcels within a certain radius from each existing substation associated with the existing grid was completed and isolated parcels that had workable topography, few streams or wetlands (based on database and GIS information), no floodplain, and sufficient acreage were selected.

Once a viable lease was established with the property owner, GSSG conducted site specific constraint analyses and preliminary reviews of existing environmental conditions with the objective of refining a proposed site plan through design layout alterations based on the findings of those site-specific reviews. The project areas were refined following completion of on-site wetland delineations and reviews of endangered species, historic resource concerns, and environmental site assessment information to ensure minimal disturbance to environmental and historic resources.

In summary, GSSG evaluated various property alternatives through an iterative approach which started with a coarse scale identification of physical properties which met location requirements near existing infrastructure, then was further narrowed down using topography and readily available wetland and floodplain mapping information. Of the properties with suitable acreage, only properties where landowners were amenable to leasing were pursued and site-specific site layouts were then refined based on the results of on-the-ground evaluations. While this approach does not specifically allow for a discrete listing of specific parcels reviewed and eliminated, dozens of properties were initially evaluated using this process before the subject site was selected. Site-specific avoidance and minimization measures were then employed by the team to avoid wetlands, streams, or other sensitive environmental concerns, of which there were few on the subject site due to the initial process of elimination. As such, the selected site and layout is considered the least environmentally damaging practicable alternative to achieve the project purpose.

2.2 Proposed Action

This project involves the construction of an approximate 13.57-acre solar farm on a portion of a of a larger 132.50-acre parcel located at 200 Concord Street, Nashua, NH 03064. Project components include the installation of 65 rows of PV panel arrays ground-mounted on single-axis tracking solar racking equipment with a maximum height of 15-feet from the ground surface. The project's construction will proceed through typical steps of overall site preparation, driven posts, racking assemblies, subsurface trenching, transformer and

switchgear installation, module and inverter installations, final site finishing, perimeter fencing installation to enclose the arrays, vegetative buffers/ screening, necessary stormwater management Best Management Practices (BMPs), and commissioning. The project will require a gravel access road to provide construction and maintenance vehicles adequate access to the project. Proposed grading has been minimized through the use of driven piles for the mounting poles which will therefore reduce excavation and earth disturbance. The project has been sited to avoid floodplains, wetlands, and streams.

2.3 No Action Alternative

The "no action alternative" would not provide benefits to the human environment nor provide a clean renewable energy alternative to other energy sources. The overall objective of the project is to provide clean energy to reduce the environmental impact of fossil fuel emissions. The No Action alternative would not realize this environmental benefit. As discussed throughout the remainder of this report, no significant adverse impacts are expected to the environment as a result of the proposed project. As such, the No Action alternative would not have less of an environmental impact than the preferred alternative.

3. AFFECTED ENVIRONMENT

3.1 Land Use

3.1.1. Important Farmland

Affected Environment

The proposed 13.57-acre Pennichuck Solar project area will be located on private property for the purpose of constructing and operating the array in Nashua, NH (Hillsborough County). According to the USDA National Cooperative Soil Survey (NCSS) website, the project site is located within an area not designated as prime farmland (reference Appendix IV). The project site is a mix of hinckley loamy sand and pipestone loamy sand.

Environmental Consequences

Although the mapped soil type had been determined as not prime farmland according to the NCSS, on March 17, 2021, Aligned engaged New Hampshire's Natural Resources Conservation Service (NRCS) local field office to generate a USDA NRCS Soil Report and to complete the AD-1006 form in accordance to the Farmland Protection Policy Act (FPPA). On March 18, 2021, Aligned was reassured that none of the soils listed in the project area are of important farmland. Therefore, it has been concluded that form AD-1006 is not required and FPPA requirements have been fulfilled (reference Appendix IV).

3.1.2. Formally Classified Land

Affected Environment

The proposed project site is not located on any property designated as a Formally Classified Lands (National Parks, Wildlife Refugees, State Parks, etc.) (reference Appendix IV).

Environmental Consequences

Based Aligned's review of the proposed Pennichuck Solar project and the U.S. National Map, no environmental consequences to formally classified land appear to be associated with the project.

3.2 Floodplains

Affected Environment

Aligned reviewed the Federal Emergency Management Agency's (FEMA) floodplain maps (<http://msc.fema.gov/portal>) to evaluate whether the project was sited on a floodplain or would have any impact on such geography. As indicated in the full FEMA floodplain map attached to this report, the project area is located in Zone X, which is determined to be outside the 500-year floodplain (reference Appendix V). This was one of the initial site selection criteria (avoidance of floodplains) and all appropriate and required stormwater quantity controls will be established so that no off-site flooding will occur.

Environmental Consequences

Based on the review of the floodplain maps, no environmental consequences to floodplains associated with the project are expected and additional analysis of floodplain impacts (i.e. 8-step decision making process) is not necessary.

3.3 Wetlands

Affected Environment

Aligned reviewed the National Wetland Inventory (NWI) Map available from the U.S. Fish and Wildlife Services (USFWS) (<http://www.fws.gov/wetlands>) to evaluate whether Pennichuck Solar is located on or adjacent to any wetlands. As indicated in the full USFWS wetlands map attached to this report (reference Appendix VI), the NWI map suggests that there are no wetland areas inside the project site. The absence of wetlands was another initial site selection criteria. Additionally, an environmental consultant was hired to assess the project site, and it had been concluded that Pennichuck Solar “does not propose any wetland impacts.”

Environmental Consequences

Based on site inspections and the project's Phase I Environmental Assessment, no wetlands were identified on the proposed site. However, it is noted that there are known wetlands in the surrounding areas. As a result, the project boundary has been drawn to include vegetative buffers on the proposed development plan, located between the solar arrays and the wetlands surrounding the project site's perimeter. Additionally, construction BMPs will be implemented throughout the completion of this project, including ground stabilization for dust control, appropriate ground coverings to prevent runoffs, and the installation of sediment barriers, where applicable. This project will not involve any wetland fill and other environmentally disruptive activity related to the surrounding wetland areas. As a result, no permit authorization is required from local, state, or federal authorities and an 8-step decision making process for wetland impacts is not necessary.

3.4 Water Resources

Affected Environment

The project site is not located in an area identified by the EPA as a sole source aquifer (<https://epa.maps.arcgis.com/apps/webappviewer/index.html>) and there are no Wild or Scenic Rivers on the project site (reference Appendix VII). According to the sole source aquifer map, the nearest surface water bodies are Supply Pond, Harris Pond, Pennichuck Brook, and Merrimack River. The Supply Pond is located approximately 0.05 miles north, Harris Pond is located approximately 0.40 miles northwest, Pennichuck Brook is located approximately 0.15 miles northeast, and the Merrimack River is located approximately 0.75 miles east of the project site.

Environmental Consequences

Based on Aligned's review, no impacts to water quality are expected as a result of the proposed work. The stormwater management controls during and post-construction will be designed to meet or exceed local and state regulations and will therefore be protective of local water quality. All required design reviews and permits will be obtained prior to construction as part of the plan review and approval process. The site plan currently proposes stormwater BMPs of the site which will manage both stormwater quantity and quality in accordance with local, state, and federal regulations. Adequate and appropriate erosion and sediment controls during construction of the project will also be implemented as needed. Moreover, silt fences, gravel construction entrances, and other best management practices will be implemented. During land disturbance activities, routine inspections will be conducted to ensure erosion and sediment controls are adequate and functioning properly. No direct or indirect impacts to waters, either onsite or offsite, are proposed.

3.5 Coastal Resources

Affected Environment

Coastal barrier resources are not located within the project area as Hillsborough County is located outside of New Hampshire's Coastal Zone (reference Appendix VII).

Environmental Consequences

Based on Aligned's review of the proposed work, no environmental consequences to coastal resources appear to be associated with the project as the subject site is not located within an area subject to the Coastal Zone Management Act.

3.6 Biological Resources

3.6.1. Fish, Wildlife, and Vegetation Resources

Affected Environment

The project site consists primarily of managed oak-pine wooded uplands. Due to historic activity, the existing condition is moderately wooded upland with a canopy of mature trees and a generally sparse to moderate shrub understory and sparse herbaceous layer. Dominant species in the wooded areas include white pine (*Pinus strobus*), northern red oak (*Quercus rubra*), red maple (*Acer rubrum*), white oak (*Quercus alba*), lowbush blueberry (*Vaccinium angustifolium*), maple-leaf viburnum (*Viburnum acerifolium*), wild sarsaparilla (*Aralia nudicaulis*), Virginia creeper (*Parthenocissus quinquefolia*), hay-scented fern (*Dennstaedtia punctilobula*), and Canada mayflower (*Maianthemum canadense*). No surface waters are directly located within the project site. Clearing will likely be conducted by mechanical methods, but the contractor will clearly demarcate clearing limits in the field prior to start. A Wildlife and Habitat Assessment was conducted by VHB in August 2020 to document the site's existing conditions. This assessment concluded that Pennichuck Solar meets the standards set forth in the NH state rules.

Environmental Consequences

Significant adverse impacts to fish, wildlife, or vegetation are not proposed as part of the project. Surface waters are not proposed for impact and all appropriate E&S and stormwater controls will be implemented to prevent offsite impacts to the aquatic system. Although the site will be developed in accordance with BMPs, some wildlife may be displaced from the immediate area due to construction noise and human presence during construction. However, this is not expected to have a significant impact on wildlife. In fact, VHB has concluded that opportunities exist to enhance the wildlife habitat value of the landscape in and around the proposed PV arrays through plantings and structural components as vegetation will be allowed to grow upon construction.

3.6.2. Federally Listed Threatened and Endangered Species

Affected Environment

Aligned reviewed the resources provided by the USFWS regarding compliance with Section 7 of the Endangered Species Act (ESA) to determine whether the project site and activities will directly or indirectly affect any threatened, endangered, proposed or candidate species, or would adversely affect designated critical habitat. Specifically, Aligned obtained an official species list for USFWS through its Information for Planning and Consultation (IPaC) (<http://ecos.fws.gov/ipac/>) system (reference Appendix IX). Based on this review and direction from the USFWS Maine Field Office, only one species, the northern long-eared bat (NLEB), was identified as potentially occurring in the project area. Please refer to Figure 5 below.

Figure 5: USFWS Endangered and Threatened Species

Species	Species Present	Species ESA Status	Effect Determination	Notes
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NLEB	Unknown	Threatened	May affect, not likely to adversely affect	Project qualifies under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the NLEB & Activities Excepted from Take Prohibitions
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Additionally, as mentioned in the previous section, VHB was consulted to conduct a Wildlife and Habitat Assessment for Pennichuck Solar. The firm's professional judgement concluded the project will not jeopardize the continued existence of state- or federally-listed threatened or endangered species or result in the destruction or modification of habitat of such species which is determined by the executive director of the New Hampshire Fish and Game Department to be critical.

Environmental Consequences

With regards to the NLEB, the USFWS issued a Final 4(d) rule under the ESA effective February 16, 2016. The rule specified that for areas of the country impacted by white-nose syndrome, incidental take is prohibited under the following circumstances:

1. If it occurs within a hibernacula,
2. If it results from tree removal activities and,
 - a. The activity occurs within ¼-mile of a known, occupied hibernacula; or,
 - b. The activity cuts or destroys a known, occupied maternity roost tree or other trees within a 150-foot radius from the maternity roost tree during the pup season from June 1 through July 31.

Because of the distance from the project site to the above-mentioned resources, as well as the lack of existing preferred habitat at the subject site, Aligned believes no adverse impacts to habitat or the species will occur for the species listed. A project review request package was prepared based on this information and is attached (reference Appendix IX). The Self Certification Letter provides documentation that the project will not adversely impact protected species and was submitted to the USFWS on March 17, 2021, for their review and concurrence. That agency typically has 30 days to review and comment on the conclusions therein if they disagree with the findings. Based on the information reviewed, Aligned believes a no adverse effect determination is appropriate and that additional coordination with the USFWS is necessary.

3.6.3. Migratory Bird Treaty Act

Affected Environment

The project site consists primarily of managed oak-pine wooded uplands. Database information concerning the presence of Birds of Conservation Concern was reviewed from the USFWS (IPaC) and the New Hampshire Natural Heritage Bureau (NHB). Both databases identified the Bald Eagle as the only migratory bird of noteworthy concern in the project area (Reference Appendix IX).

Environmental Consequences

The Bald Eagle is listed on the USFWS' Birds of Conservation Concern and is protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. Although no known Bald Eagle nesting locations are identified within the project site, the NHB identified three known nesting locations north of the project site, along the interconnected pond complex. The nearest known nest is approximately 500 feet northwest of the project site. Therefore, qualified biologist from VHA were consulted on August 28, 2020 to perform a walkover on the entire site. No rare, threatened, or endangered species were observed using the project site on the day of the site investigation. However, bald eagles were observed flying over Supply Pond north of the site in the vicinity of the known nest location, suggesting that the nest is active. The biologist concluded that the site does not offer any habitat of particular value for bald eagles, as the open water areas they typically use for hunting are all offsite to the north. Additionally, on November 11, 2020, the Northeast Bald Eagle Project Screening Form was completed and submitted it to the USFWS (reference Appendix IX). To mitigate potential risks, the project certifies to adhere to all the suggested and applicable BMPs outlined in the Northeast Bald Eagle Project Screening Form, which includes maintaining a distance buffer of at least 660 feet (200 meters) between all project activities if any nests are later identified within that distance. As the project development is committed to implementing appropriate mitigation measures, the project is not expected to impact the bald eagle. Overall, significant adverse impacts to migratory bird populations or habitat are not proposed as part of the project.

3.6.4. Invasive Species

Affected Environment

The project site consists primarily of managed oak-pine wooded uplands. Invasive and opportunistic species are also present on the site including glossy buckthorn (*Frangula alnus*), American burnweed (*Erechtites hieraciifolius*), and Asiatic bittersweet (*Celastrus orbiculatus*). Most disturbed areas and invasive plants are limited to the access road and fence along the southeast boundary of the project site.

Environmental Consequences

The proposed project does not have the potential to increase the spread of invasive species. Solar panels require vegetation to be maintained below the panel surface to operate efficiently and plant life will not be expected to spread following construction. The lack of significant earthwork, no fill material being imported onto the site, and lack of aquatic habitats within the project site result in a minimal potential impact to the increase or establish invasive species as a result of the proposed project. Aligned has reviewed New Hampshire's invasive species list for reference (reference Appendix IX).

3.7 Historic and Cultural Properties

3.7.1. State Historic Preservation

Affected Environment

The project site is located in Nashua, New Hampshire and consists primarily of managed oak-pine wooded uplands. In order to evaluate the project's potential to impact cultural or historic resources, the direct Area of Potential Effect (APE) for the project was established as the 13.57-acre leased area. An additional indirect APE was established approximately 1/4 mile from the site to account for potential visual impacts. It should be noted that this indirect APE is likely over-conservative given the vegetative screening which will be provided or existing forest cover, which limits sight lines. According to the New Hampshire Division of Historical Resources (DHR), no historic or cultural resources are mapped within the project area or area of potential effect (APE), both direct and indirect. A map showing the APE DHR determination is provided in Appendix X.

Environmental Consequences

On April 22, 2021, a request for project review, including view shed analysis information and imagery was received by the New Hampshire DHR seeking input on whether Pennichuck Solar raised any concerns under Section 106 of the National Historic Preservation Act (reference Appendix X). Based on this information, the NH DHR responded on April 26, 2021 providing a finding that there will be no adverse effect (reference Appendix X). Based on the project location and the feedback received through this review process, the project will not have any adverse effect on historic or cultural resources.

3.7.2. Tribal Historic Preservation

Affected Environment

A review of the U.S. Department of Housing and Urban Development (HUD) Tribal Directory Assessment Tool (TDAT) (<https://egis.hud.gov/tdat/>) indicated that there are no federally recognized tribal nations in New Hampshire. This tool was developed to help users identify tribal contact information to assist users with initiating Section 106 consultation under the National Historic Preservation Act (54 U.S.C. § 300101 et seq.) However, with the guidance of the USDA, Align had identified nine state recognized tribes.

Environmental Consequences

Although state tribes are not recognized as federal tribes in the Section 106, they were included in the consultation process as potential consulting parties, therefore Align sent consultation letters to each of the tribes on March 16, 2021 seeking input on whether Pennichuck Solar raised any concerns under Section 106 of the National Historic Preservation Act (reference Appendix XI). Letters were sent to the following contacts:

- Abenaki Nation of New Hampshire: Rhonda Besa, Speaker
- Cowasuck Band – Pennacook/Abenaki People: Paul Pouliot, Council Chief and Speaker
- Koasek (Cowasuck) Traditional Band of the Sovereign Abenaki Nation: Nathan Pero, Chief
- Koasek of the Koas of the Abenaki Nation: Amy Therrian, Carrie Gendreau, Shirley Hook, Council of Chiefs
- Ko'asek (Co'wasuck) Traditional Band of the Abenaki Nation: Paul “Gwilawato” Bunnell, Chief
- Nulhegan Band of the Coosuk - Abenaki Nation: Don Stevens, Chief
- Sovereign Abenaki Nation of Missisquoi: Eugene Rich, Chief
- Laconia Indian Historical Association: Francis Howes, President
- NH Intertribal Native American Council: Peter Newell, Council Chief

To date, only Chief Don Stevens has responded inquiring if any financial assistance would be provided for the consultation on March 17, 2021. RUS responded to the inquiry on May 5, 2021 (reference Appendix XI).

Based on the consultation process and numerous outreach efforts, the project will not have any adverse effect under Section 106 of the National Historic Preservation Act.

3.8 Aesthetics

Affected Environment

The project site is not located within a visually sensitive area such as a wilderness area, park, scenic area, etc. Existing forest cover is present on all sides of the site and the proposed site plan calls for additional vegetation screening. Moreover, the proposed solar panels will be placed far off the roadway in a low-lying position, thereby reducing or eliminating visibility from public thoroughfares.

Environmental Consequences

While the proposed developments will alter the landscape of the area, significant visual impacts on the surrounding area are not expected, especially in consideration of the limited height of the solar arrays and the surrounding wooded land and vegetative screening. The site is also not located in a designated scenic or visually sensitive area. As such, adverse impacts to aesthetics are not expected.

3.9 Air Quality

Affected Environment

Pennichuck Solar is located in the following Nonattainment Areas or Maintenance Areas as defined by the EPA GreenBook (<https://www.epa.gov/green-book>) and observed with

the EPA's NEPAAssist Tool (reference Appendix XII). As such, no specific air quality standards are imposed on the project site.

Nonattainment Areas:

- 1-hour Ozone (1979 standard-revoked)
- 8-hour Ozone (1997 standard-revoked)

Maintenance Areas:

- No known maintenance areas

Environmental Consequences

Aligned has reviewed the air quality de minimis levels documented in 40CFR93.153(b) and considered emissions generated at the project site during construction and operation of the solar PV power plant. Aligned expects temporary and transient increases in air pollution as a result of construction activities associated with the project. These sources may include dust and emissions from construction equipment and vehicles. Aligned expects these increases to be sporadic and minimal. BMPs will be implemented, such as the application of water to suppress dust, washing down construction vehicles and paved roadways immediately adjacent to construction areas, and the allowance of no idle vehicles. No sources of particulate, odorous, or volatile pollutant emissions are proposed as part of the construction project (i.e. large boilers or generators). The main source of emissions during construction of a plant of this size and scope would be the gravel access road, which is anticipated to take less than 1 week to complete. Furthermore, BMPs should be utilized to reduce or eliminate construction vehicle emissions or dust generation for the short-term during construction. Long term air quality impacts are not expected; rather, given that the project involves implementing renewable energy generation, overall emissions would be expected to decrease as a result of lower fossil fuel demands for the existing power grid.

3.10 Socio-Economic/Environmental Justice

Affected Environment

A review of demographic information was performed by obtaining information from the U.S. Census Bureau. Year 2019 demographics data were obtained for Androscoggin County, Maine (reference Appendix XIII). The census information indicates that approximately 89.9% of the population is white, approximately 7.3% of the population is Hispanic or Latino, with the remaining 2.8% being black/African American, American Indian, Asian, or other minorities.

According to EPA's Environmental Justice (EJ) screening tool (reference Appendix XIII), the site is located in an area with 12% of the population identified as low income, lower than the state average, and 17% minority population, which is above the state average. The project will involve new construction of a solar farm and therefore will not displace existing residents. Moreover, the EPA EJ Screen report and the Phase I Environmental Site

Assessment did not identify environmental issues in the proximity of the property which would be expected to pose an environmental justice concern.

Environmental Consequences

The construction of the solar farm is not expected to have negative social or economic environmental consequences on the surrounding community. Conversely, the proposed project is intended to provide clean renewable energy for the purposes of bettering the natural and human environment. The proposed project will help limit greenhouse gas emissions through the generation of solar energy while providing electricity to the energy grid. By displacing a portion of the grid's existing electrical demand from fossil fuel generation, the project reduces both criteria air pollutants and greenhouse gas emissions. No adverse environmental conditions were identified at the site or surrounding area which would pose a disproportionate environmental justice concern. Additionally, this project fits within the State of New Hampshire's renewable energy goals.

3.11 Miscellaneous Issues

3.11.1. Noise

Affected Environment

The ambient noise at the project site is typical of the noise expected in the surrounding area. The vicinity of the project site is considered residential with houses and a school nearby. Based on aerial photography, the nearest residential property to the proposed project site is located approximately 0.02 miles to the east and school is located 0.10 miles to the southwest. As a result, potential noise receptors are limited at the project site.

Environmental Consequences

Construction activities will increase some noise levels initially from equipment usage; however, these activities are scheduled to be performed during normal working hours, 7am to 7pm, for a short duration during the construction of the project. Work outside these hours is not anticipated.

The level of noise produced by the solar farm after construction is not expected to exceed current ambient noise levels in the area and will be negligible outside of the fenced area. No specialized equipment that would generate loud noises is proposed to be used or installed. Also, the noise that a solar facility produces only occurs when the equipment is in use (no greater than 30 decibels) and when the panels and inverters are resting at night there is no noise. Minimal noise pollution is expected as a result of the proposed project to nearby sensitive areas, if at all.

BMPs, such as the aforementioned limited construction hours to prevent construction during the nights, will be employed to reduce or eliminate noise pollution during

construction efforts but given the short duration and lack of nearby sensitive noise receptors, impacts are not expected.

3.11.2. Transportation

3.11.2.1. Federal Aviation Administration

Affected Environment

Based on the NEPA Assist Mapping tool and the Federal Aviation Administration (FAA), the project site is not located within 20,000 feet of an airport and site developments are proposed to be less than 200 feet above the ground surface. As such, no official notice must be filed with the FAA.

Environmental Consequences

Based on Aligned's review of the proposed project, no environmental consequences to air traffic appear to be associated with the project. Furthermore, the FAA has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77 (reference Appendix XIV). This study concluded a "determination of no hazard to air navigation," which is valid until July 28, 2021.

3.11.2.1. Traffic

Affected Environment

The proposed project anticipates a negligible increase in traffic to the site as the facility generally operates autonomously. Periodic (annual) and as-needed maintenance will be necessary, but these will be very sporadic and will not increase local traffic volumes or noise levels. In addition, no transportation of hazardous or other substances to or from the site are proposed during or after construction.

The construction activities do not propose to impact traffic patterns as the work will not be performed within the roadways. Supply materials will be off loaded at the site at the beginning of the project to reduce truck volume and duration. This will only cause a temporary delay in traffic on the site and will not affect traffic given the low existing traffic and volume on that roadway. The access road to the site, located on private property, will be upgraded to accommodate the construction and maintenance traffic to the site. The road has been sited so that local traffic will not be impacted.

Environmental Consequences

The existing roadway is considered adequate to accommodate the anticipated construction traffic without disrupting local traffic flow or patterns. The solar array is designed to

operate with minimal maintenance requirements and post construction traffic will also not adversely impact the site or surrounding area. No traffic impacts are expected.

3.12 Human Health and Safety

3.12.1. Electromagnetic Fields and Interference

Affected Environment

Because the project involves construction of a solar panel array and generation of electrical energy, the potential exists for Electromagnetic Fields (EMFs) to be generated. Studies conducted on the EMF generation of commercial solar fields have indicated that EMF generation at these commercial scale facilities is below acceptable exposure levels with the highest EMF generation measured near inverters and transformer units. While the project will likely generate some EMF, available scientific literature suggests they will be negligible levels well below established permissible exposure thresholds.

Environmental Consequences

The solar panel arrays have been sited away from occupied residences and well beyond the range expected for EMF generation. Studies show that at approximately 3 feet of distance from inverter units, which generate the highest EMF levels on a commercial solar project, EMF levels are a fraction of the permissible exposure level. Beyond 3 feet levels are negligible. Since the project site is several hundred feet from any occupied residence and will be fenced to prevent unauthorized access, exposure to EMF is not anticipated.

3.12.2. Environmental Risk Management

Affected Environment

A Phase I Environmental Site Assessment was conducted at the project site on November 2020 in accordance with American Society for Testing and Materials E1527-13. The Phase 1 Environmental Site Assessment did not reveal evidence of Recognized Environmental Conditions (RECs) associated with the project site.

Environmental Consequences

There were no RECs identified in the Environmental Site Assessment. As such, no impacts are expected. Separate from the RECs, the construction and operation of Pennichuck Solar will not involve any hazardous materials, substances, or wastes that will be released on-site. All construction debris and waste will be transported off-site for appropriate disposal.

3.13 Corridor Analysis

Affected Environment

This project will have two interconnections both located near Manchester Street, Nashua, NH. This area is depicted on the enclosed maps and site plans for clarity. All of the project's energy generation will be sold to the incumbent electric utility, Eversource, pursuant to New Hampshire State law (RSA 362-A:9, XIV) and NH Public Utilities Commission regulations (NH PUC 900). The distance from the point of interconnection to the nearest three phase line is less than 0.25 miles, and less than 1.00 miles to the substation. As a result, the interconnection corridor will not be extensive and will be completed at a later date, entirely contained within the site secured for the project.

Environmental Consequences

Based on Aligned's review of the proposed work, no corridor analysis is necessary at this time. Nonetheless, given the proximity to existing infrastructure, specifically electrical poles and lines, the interconnection corridor project to be conducted would not be expected to adversely impact environmental resources.

4. CUMULATIVE IMPACTS

Resource	Impact Analysis
Land Use	No significant adverse impacts.
Farmland	Not present; no significant adverse impacts.
Formerly Classified Land	No significant adverse impacts.
Floodplains	Not present; no significant adverse impacts.
Wetlands	No significant adverse impacts.
Water Resources	No significant adverse impacts.
Coastal Resources	Not present; no significant adverse impacts.
Biological Resources – Fish, Wildlife and Vegetation	No significant deterioration or fragmentation of wildlife habitat or vegetation communities. No significant adverse impacts.
Biological Resources – Threatened and Endangered	Not likely to adversely effect Northern Long Eared Bats or Bald Eagles. Wildlife Habitat Assessment and on-site inspection concluded.
Biological Resources – Migratory Bird Treaty Act	No significant adverse impacts.
Biological Resources – Invasive Species	No significant adverse impacts.
Historic and Cultural Properties	No significant adverse impacts.
Aesthetics	No significant adverse impacts.
Air Quality	Minimal short-term effect during construction; No significant adverse impacts.

Socio-Economic/ Environmental Justice	No significant adverse impacts.
Noise	Minimal short-term effect during construction; No significant adverse impacts.
Transportation	No significant adverse impacts.
Human Health and Safety	No significant adverse impacts.

Within the project footprint, Aligned anticipates minimal long-term cumulative impacts and no significantly adverse impacts. Temporary impacts due to noise and air pollution during construction are anticipated from construction vehicles; however, these impacts are temporary. At the completion of the project, the noise and air pollution will be comparable to the current conditions. Construction will only be allowed during normal working hours to prevent noise pollution on nearby properties outside of these times. Disturbance to the subsurface is proposed to be performed at shallow depths with the exception of piles, to be driven directly into the ground. On-site erosion and sediment controls will be utilized during and after construction to control surface runoff and all appropriate stormwater management plans and reviews will be completed prior to site plan approval. No listed historic or archaeological resources have been documented within the project limits nor are threatened or endangered species believed to be adversely impacted. Hazardous wastes will not be generated nor are anticipated to be encountered during construction. The proposed project will not be expected to impact the surrounding community but rather is designed to provide a benefit to it through the production of clean renewable energy for the purposes of bettering the natural and human environment.

In summary, no significant adverse environmental impacts are proposed or anticipated, and the minor/short term impacts discussed above are not expected to significantly impact the natural or human environment.

5. SUMMARY OF MITIGATION

The site selection procedures, project design layout, New Hampshire Department of Environmental Services permit conditions, standard construction BMPs, and adequate stormwater management and erosion and sediment control plans all appear sufficient to alleviate and/or prevent impacts to the natural or human environment. The avoidance of construction in Wetlands or Floodplains and minimization measures have either already been employed in the design conducted to date or will be part of the construction procedures of the project. Additional mitigation measures beyond the procedures specified above do not appear warranted.

6. COORDINATION, CONSULTATION AND CORRESPONDENCE

During the preparation of this EA, Aligned consulted with the following agencies or agency websites:

- U.S. Department of Agriculture: NEPA Environmental Guidance Document
- U.S. Department of Agriculture: NRCS Web Soil Survey
- U.S. Department of Agriculture: NRCS Farmland Conversion Impact Rating and Local New Hampshire Field Office
- U.S. Environmental Protection Agency: NEPA Assist
- U.S. Department of Homeland Security: FEMA Flood Plain Map
- U.S. Fish and Wildlife Services: Wetland Mapper
- U.S. Environmental Protection Agency: Sole Source Aquifer Mapping System
- U.S. Fish and Wildlife Services: Threatened and Endangered Species for New Hampshire
- U.S. Department of Housing and Urban Development: Tribal Directory Assessment Tool
- U.S. Department of Agriculture: RD Section 106 Review Basics
- New Hampshire Department of Historical Resources
- New Hampshire Natural Heritage Bureau
- Tribal Consultation: Abenaki Nation of New Hampshire
- Tribal Consultation Cowasuck Band – Pennacook/Abenaki People
- Tribal Consultation: Koasek (Cowasuck) Traditional Band of the Sovereign Abenaki Nation
- Tribal Consiltation: Koasek of the Koas of the Abenaki Nation
- Tribal Consultation: Ko'asek (Co'wasuck) Traditional Band of the Abenaki Nation
- Tribal Consultation: Nulhegan Band of the Coosuk - Abenaki Nation
- Tribal Consultation: Sovereign Abenaki Nation of Missisquoi
- Tribal Consultation: Laconia Indian Historical Association
- Tribal Consultation: NH Intertribal Native American Council
- U.S. Environmental Protection Agency: Green Book - Nonattainment Areas for Criteria Pollutant
- U.S. Environmental Protection Agency: Environmental Justice Screening
- U.S. Census Data: Hillsborough County, NH
- U.S. Department of Transportation: FAA

7. REFERENCES

Supporting documentation from the consulted agencies and sources is provided in the Appendices to this EA.

New Hampshire Division of Historical Resources: Cultural Interests in New Hampshire, last accessed March 18, 2021. https://www.nh.gov/nhdhr/review/tribal_list.htm

U.S. Department of Agriculture: NEPA Environmental Guidance Document, last accessed March 16, 2021. <https://www.rd.usda.gov/resources/environmental-studies/environmental-guidance>

U.S. Department of Agriculture: NRCS Web Soil Survey, last accessed March 17, 2021. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

U.S. Department of Agriculture: NRCS Farmland Conversion Impact Rating and Local New Hampshire Field Office, last accessed March 17, 2021. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045394.pdf

U.S. Environmental Protection Agency: NEPA Assist, last accessed March 16, 2021. <https://nepassisttool.epa.gov/nepassist/nepamap.aspx>

U.S. Department of Homeland Security: FEMA Flood Plain Map, last accessed March 18, 2021. <https://msc.fema.gov/portal/home>

US Fish and Wildlife Services: Wetland Mapper, last accessed March 16, 2021. <https://www.fws.gov/wetlands/data/mapper.html>

U.S. Environmental Protection Agency: Sole Source Aquifer Mapping System, last accessed March 17, 2021. <https://www.epa.gov/dwssa/map-sole-source-aquifer-locations>

U.S. Fish and Wildlife Services: Threatened and Endangered Species New Hampshire, last accessed March 18, 2021. <https://ecos.fws.gov/ecp/>

U.S. Department of Housing and Urban Development: Tribal Directory Assessment Tool, last accessed March 18, 2021. <https://egis.hud.gov/tadat/>

U.S. Department of Agriculture: RD Section 106 Review Basics, last accessed March 16, 2021. <https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs/section-106-review-basics>

U.S. Environmental Protection Agency: Green Book - Nonattainment Areas for Criteria Pollutant, last accessed March 18, 2021. <https://www.epa.gov/green-book>

U.S. Environmental Protection Agency: Environmental Justice Screening, last accessed March 18, 2021. <https://www.epa.gov/environmentaljustice>

U.S. Census Data, last accessed March 18, 2021. <https://www.census.gov/quickfacts/fact/table/hillsboroughcountynewhampshire,NH/PST045219>

8. LIST OF PREPARERS

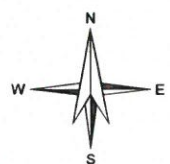
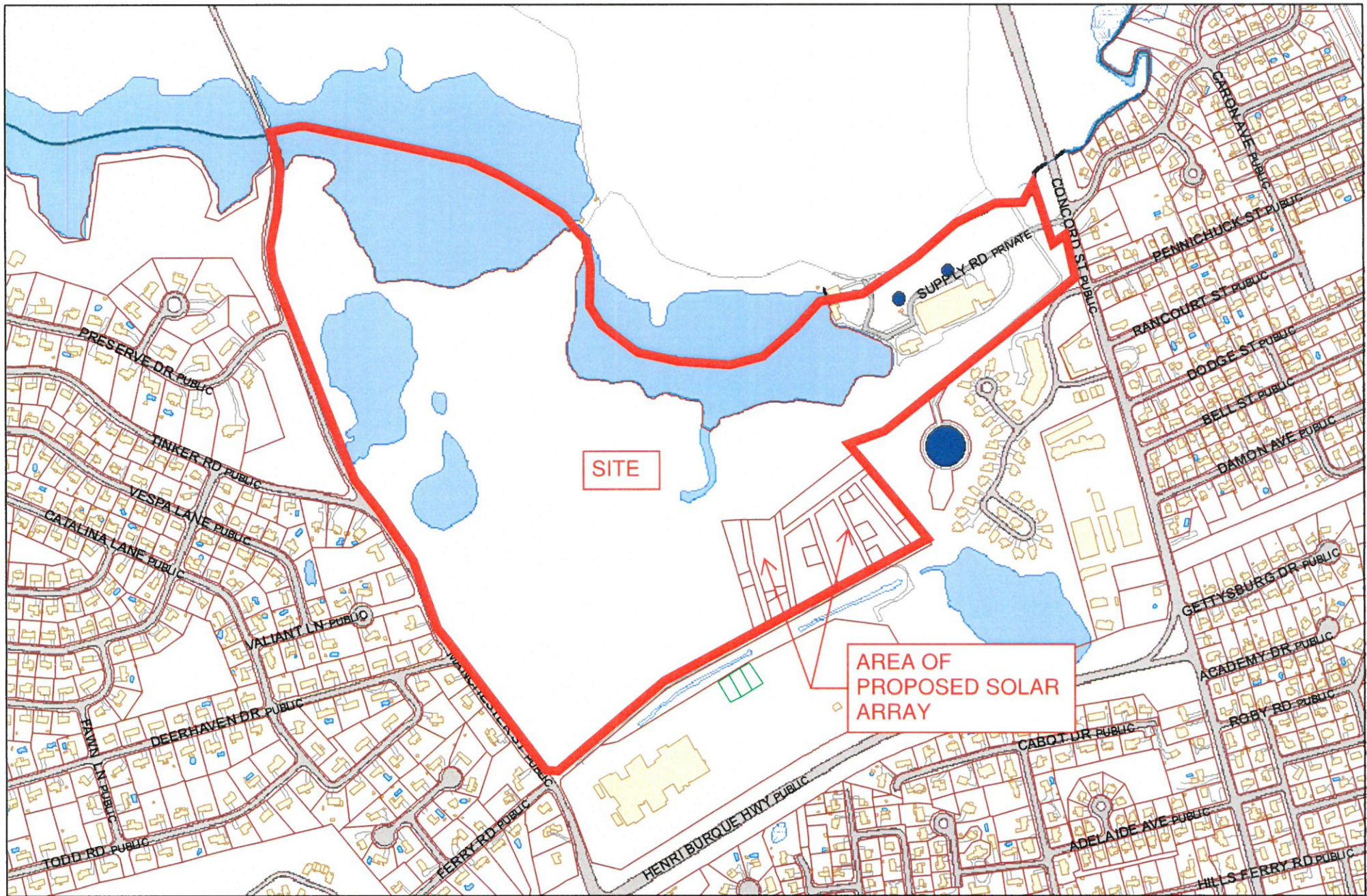
This EA was completed by the following Aligned Climate Capital personnel:

Eric Lee
Vice President
Aligned Climate Capital

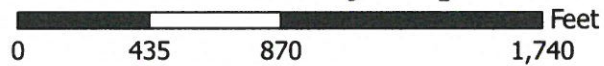
This EA was completed by the following USDA RUS personnel:

Michael Geiger
Environmental Protection Specialist
United States Department of Agriculture

Appendix I: Figures



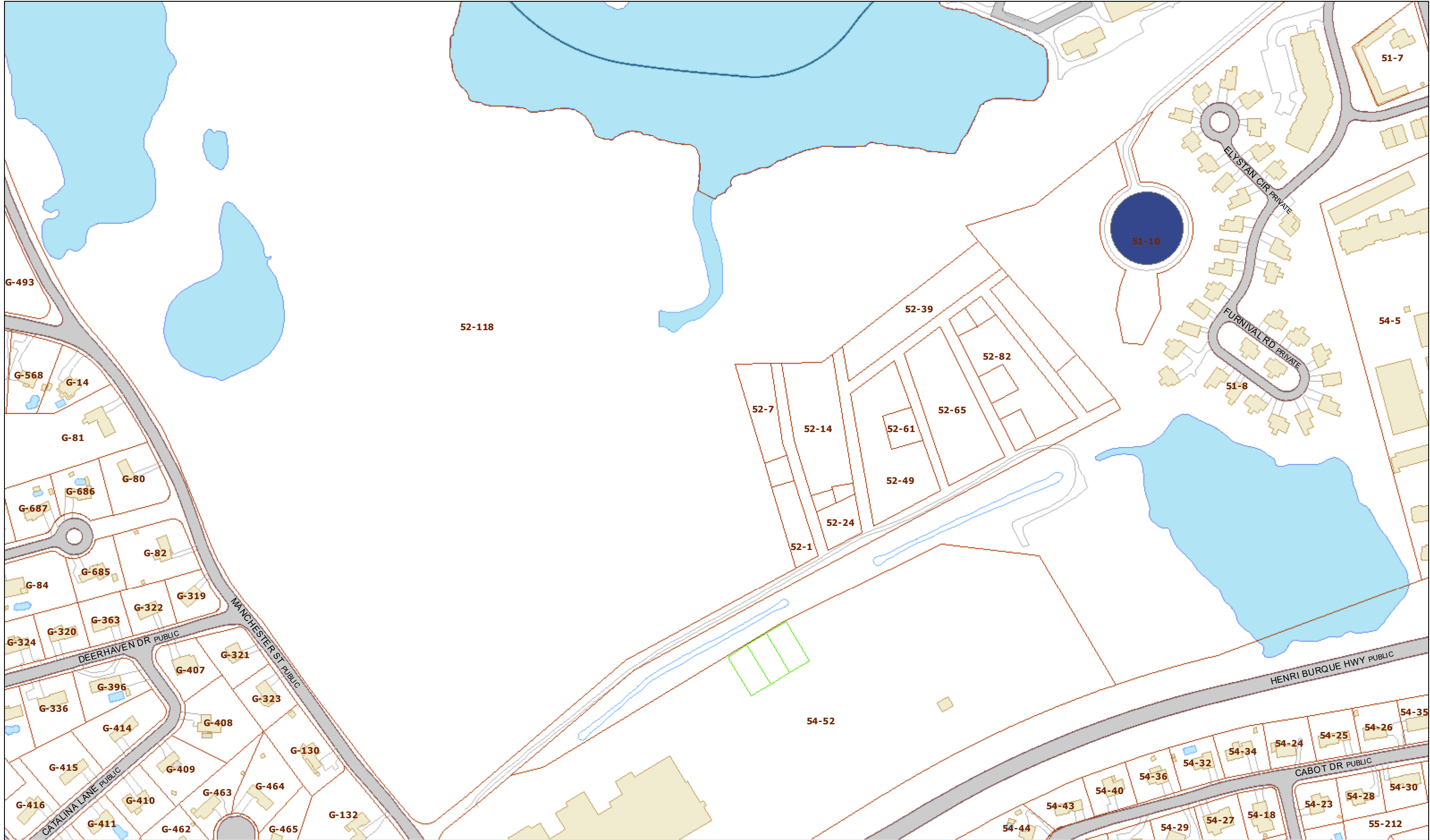
GIS Vicinity Map



NASHUA
NEW HAMPSHIRE

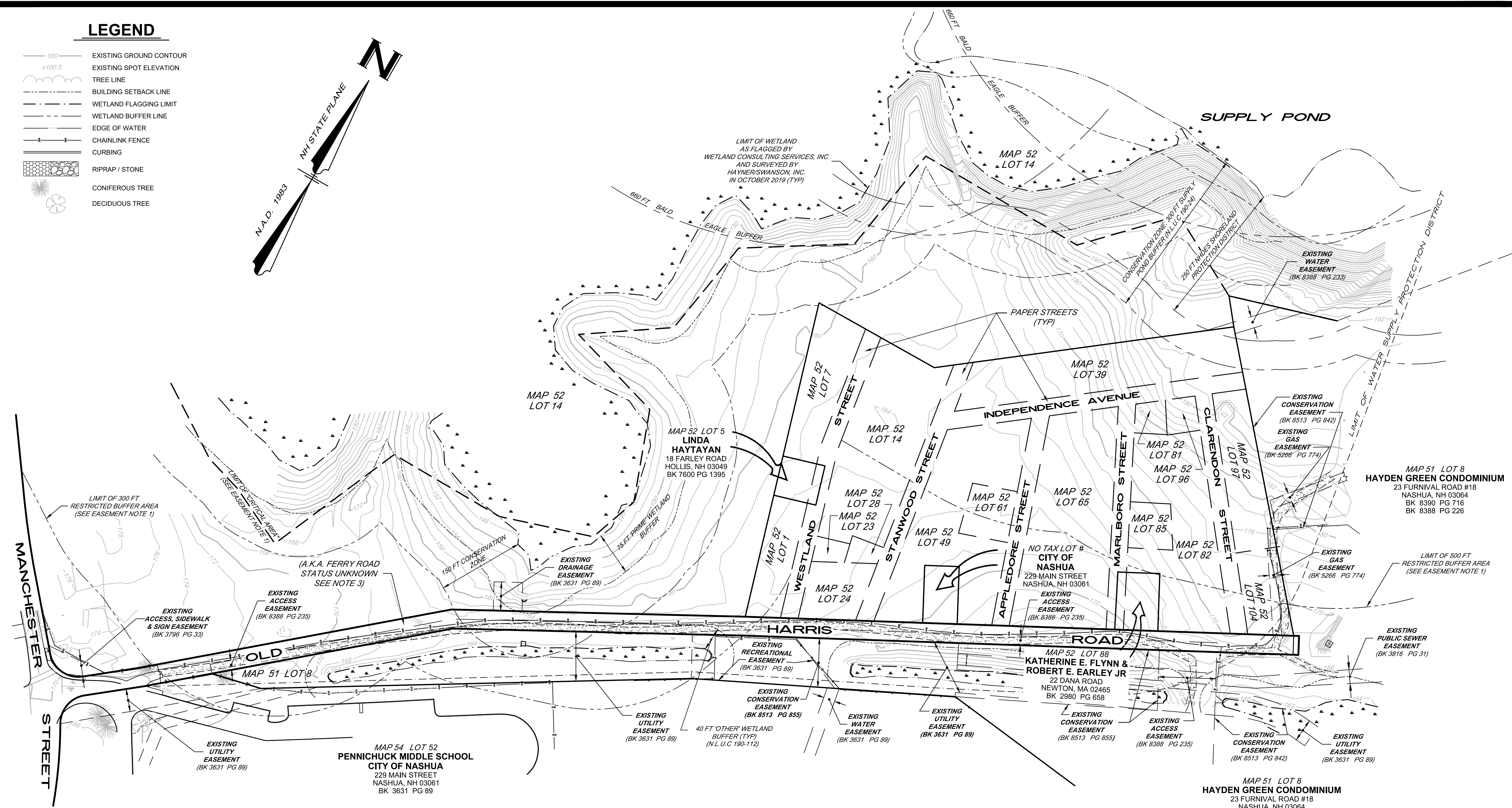
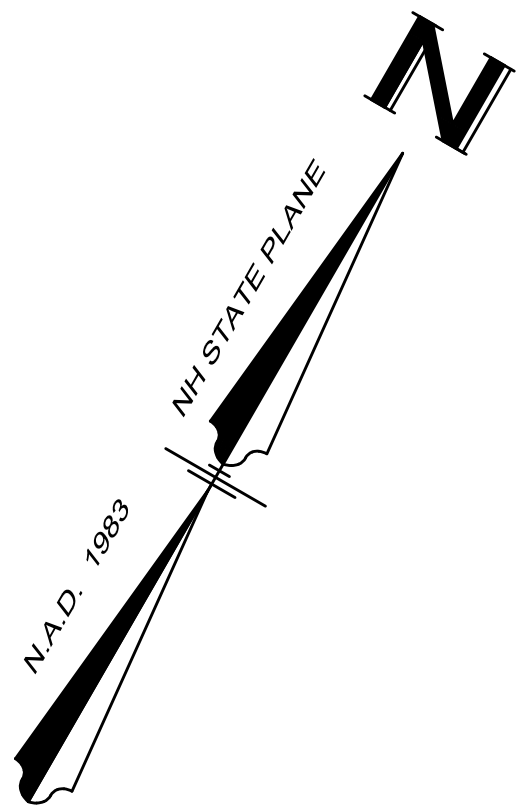






Appendix II: Drawings

	EXISTING GROUND CONTOUR
	EXISTING SPOOT ELEVATION
	TREE LINE
	BUILDING SETBACK LINE
	WETLAND FLAGGING LIMIT
	WETLAND BUFFER LINE
	EDGE OF WATER
	CHAINLINK FENCE
	CURBING
	RIPRAP / STONE
	CONIFEROUS TREE
	DECIDUOUS TREE



1. PRESENT ZONING: PER CITY ZONING ORDINANCE
(NO ZONING PROVIDED TO THE SURVEYOR)

GENERAL DISTRICT: R-18 (B - SUBURBAN RESIDENCE)

MINIMUM LOT REQUIREMENTS

- LOT AREA	18,000 SF
- LOT WIDTH	120 FT
- LOT FRONTAGE	100 FT
- LOT DEPTH	100 FT

MINIMUM YARD SETBACKS

- FRONT YARD	20 FT
- SIDE YARD	20 FT
- REAR YARD	40 FT

MAXIMUM BUILDING HEIGHT 35 FT / 2.5 STORIES

OPEN SPACE (%) 50%

OVERLAY DISTRICT: WSP (WATER SUPPLY PROTECTION DISTRICT)

CONSERVATION ZONE (UNDISTURBED NATURAL) BUFFERS:

- POND BUFFER	300 FT
- OTHER CONNECTED WATER BODIES & WETLANDS	150 FT

2. PURPOSE OF PLAN: TO SHOW A PROPOSED SOLAR ARRAY PROJECT TO BE CONSTRUCTED UPON THE SUBJECT SITE ALONG WITH ASSOCIATED CONSERVATION ZONE IMPACT AREAS.

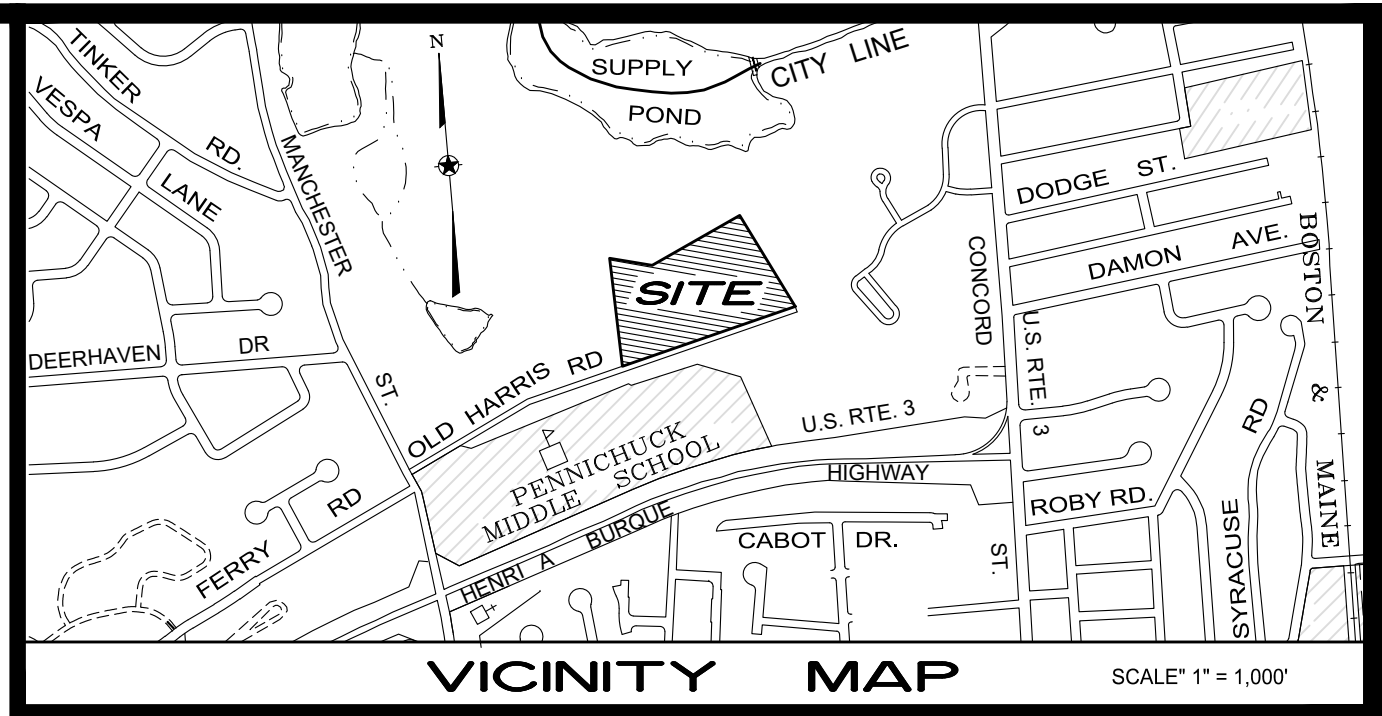
3. NO LAYOUT OR ACCEPTANCE FOR OLD HARRIS ROAD (A.K.A. FERRY ROAD) IS ON FILE WITH THE CITY OF NASHUA. A PORTION OF HARRIS ROAD, HOWEVER, IS DEPICTED ON H.C.R.D. PLAN NO. 234 AS ACCESS TO THE SUBDIVISION OF WHICH THE SUBJECT PROPERTY IS A PART. THE CURRENT STATUS OF OLD HARRIS ROAD IS UNKNOWN. HOWEVER, PRIVATE RIGHTS EXIST OVER THIS ROAD.

4. INDEPENDENCE AVENUE AND WESTLAND, STANWOOD, APPLEDORE, MARLBORO AND CLARENDON STREETS ARE DEPICTED ON H.C.R.D. PLAN NO. 234. NO ACCEPTANCE FOR THESE STREETS IS ON FILE WITH THE CITY OF NASHUA. NO EVIDENCE THAT THESE STREETS WERE EVER CONSTRUCTED WAS OBSERVED DURING THE SURVEY. THEREFORE, THEY ARE DEPICTED HEREON AS "PAPER STREETS". PRIVATE RIGHTS EXIST OVER THESE STREETS.

5. PRESENT OWNERS OF RECORD:

MAP 52, LOTS 1, 7, 14, 23, 24, 26, 39, 49, 61, 65, 81, 82, 85, 96, 97, 104 & 118.

PENNICKCHUCK WATER WORKS &
PENNICKCHUCK WATER WORKS, INC.
25 MANCHESTER STREET
PO BOX 1947
MERRIMACK, NH 03054
(SEE DEED REFERENCE TABLE)



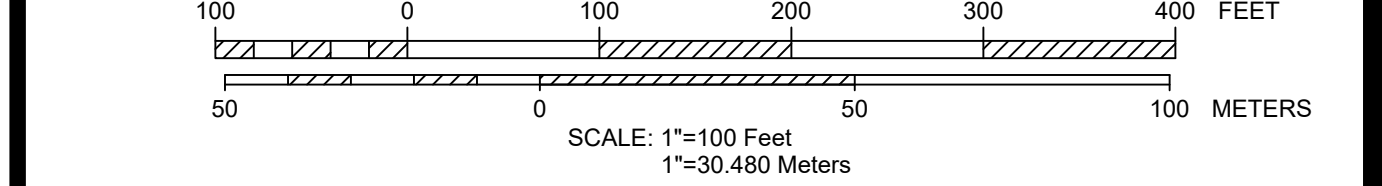
TAX LOT No	GRANTEE ENTITY	H.C.R.D. PLAN 234 LOT	DEED BOOK / PAGE
1	PENNICHUCK WATER WORKS	No. 1	950 / 540
	(LOT 1 MERGED BY 6375 / 315)	2 - 4	1035 / 270
7	PENNICHUCK WATER WORKS	7 - 9	3878 / 159
	(LOT 7 MERGED BY 6375 / 316)	10 - 13	1035 / 270
14	PENNICHUCK WATER WORKS	14 - 21, 30, 32, 34, 36	1035 / 270
	(LOT 14 MERGED BY 6375 / 317)	22	1092 / 148
		29	1054 / 284
		31 & 33	1020 / 352
		35	1090 / 149
		37 & 38	1216 / 355
23	PENNICHUCK WATER WORKS, INC.	23	8799 / 1156
24	PENNICHUCK WATER WORKS	24	990 / 540
28	PENNICHUCK WATER WORKS, INC.	28	9014 / 2177
39	PENNICHUCK WATER WORKS	39	1035 / 270
	(LOT 39 MERGED BY 6375 / 320)	40 - 44	1051 / 412
		45 - 48	1035 / 270
49	PENNICHUCK WATER WORKS	49, 51, 53, & 54	1035 / 270
	(LOT 49 MERGED BY 6375 / 322)	50 & 52	1054 / 284
		55 - 58	990 / 540
		59 & 62	1051 / 412
		63 & 64	1090 / 149
61	PENNICHUCK WATER WORKS, INC.	61 & 62	9014 / 2177
65	PENNICHUCK WATER WORKS	65 & 66, 77 & 78	1035 / 270
	(LOT 65 MERGED BY 6375 / 324)	67, 73 & 74	971 / 149
		68, 70 & 71, 79 & 80	1054 / 284
	PENNICHUCK WATER WORKS, INC.	69	3961 / 96
	PENNICHUCK WATER WORKS	72, 75 & 76	990 / 540
81	PENNICHUCK WATER WORKS, INC.	81	8799 / 1156
82	PENNICHUCK WATER WORKS	82, 84, 95	1035 / 270
	PENNICHUCK WATER WORKS, INC.	83	3961 / 96
	PENNICHUCK WATER WORKS	87	1054 / 284
	(LOT 82 MERGED BY 6375 / 326)	89 & 90	990 / 540
		91 - 94	1051 / 412
85	PENNICHUCK WATER WORKS, INC.	85 & 86	8799 / 1156
96	PENNICHUCK WATER WORKS, INC.	96	9014 / 2177
97	PENNICHUCK WATER WORKS, INC.	97 - 103	9014 / 2177
104	PENNICHUCK WATER WORKS	104 & 105	990 / 540
	(LOT 104 MERGED BY 6375 / 328)		
118	PENNICHUCK WATER WORKS		8630 / 948
			8621 / 432
			3166 / 88
			526 / 557
			366 / 543

1. THE PROPERTY IS SUBJECT TO THE DECLARATION OF COVENANTS AND RESTRICTIONS BY PENNICHUCK WATER WORKS, INC., AS DESCRIBED IN BK 3166, PG 74, AS AMENDED AND SUPPLEMENTED BY BK 3574, PG 916, BK 3597, PG 473, BK 3631, PG 4, BK 5177, PG 794 AND BK 5647, PG 521.
2. THE PROPERTY IS SUBJECT TO THE GAS EASEMENT GRANTED TO ENERGY NORTH NATURAL GAS, INC. AS DESCRIBED IN BK 5266, PG 774.

No.	DATE	REVISION	BY

OLD HARRIS ROAD
NASHUA, NEW HAMPSHIRE

RECORD OWNER:
***Pennichuck Water Works &
Pennichuck Water Works, Inc.***
25 MANCHESTER STREET P.O. BOX 1947 MERRIMACK, NH 03054

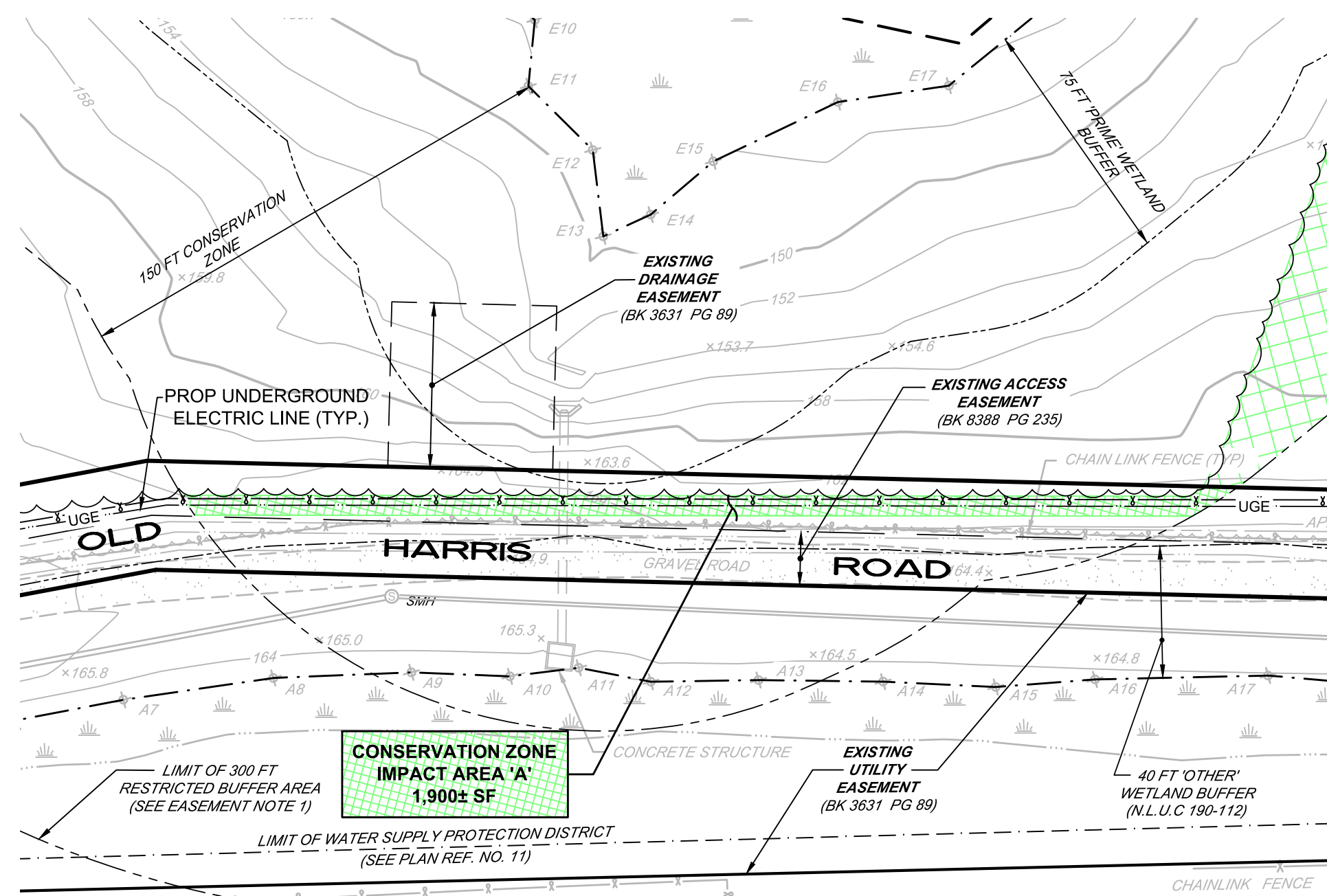
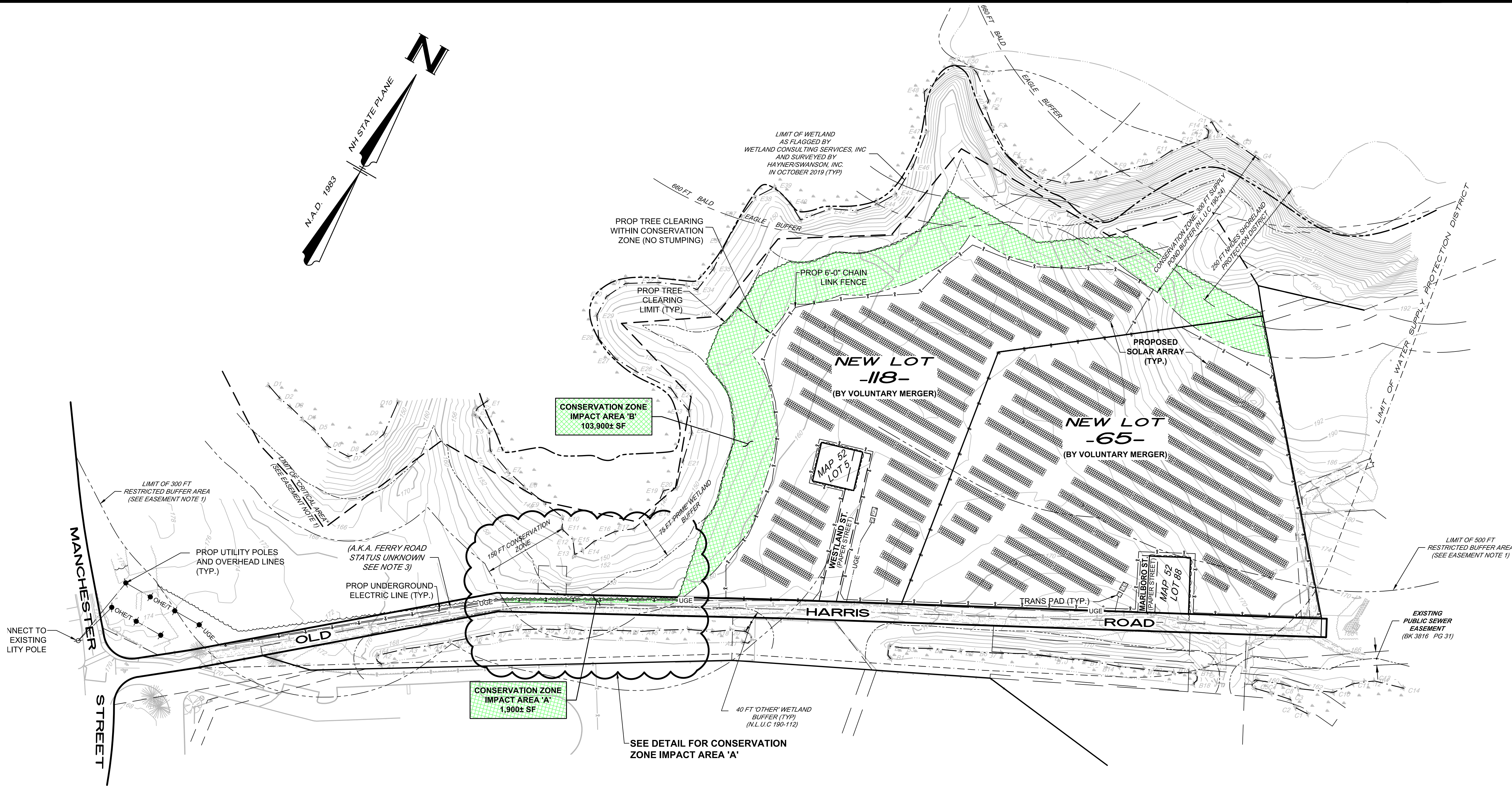


15 JUNE 2020



3 Congress Street
Nashua, NH 03062
(603) 883-2057
www.haynerswanson.com

FIELD BOOK: 1244	DRAWING NAME: 5677-FV63	5677	1 OF 2
DRAWING LOC: J:\5000\5677\DWG\5677 ZONING			
		File Number	Sheet



CONSERVATION ZONE IMPACT AREA 'A' DETAIL

SCALE: 1" = 40'

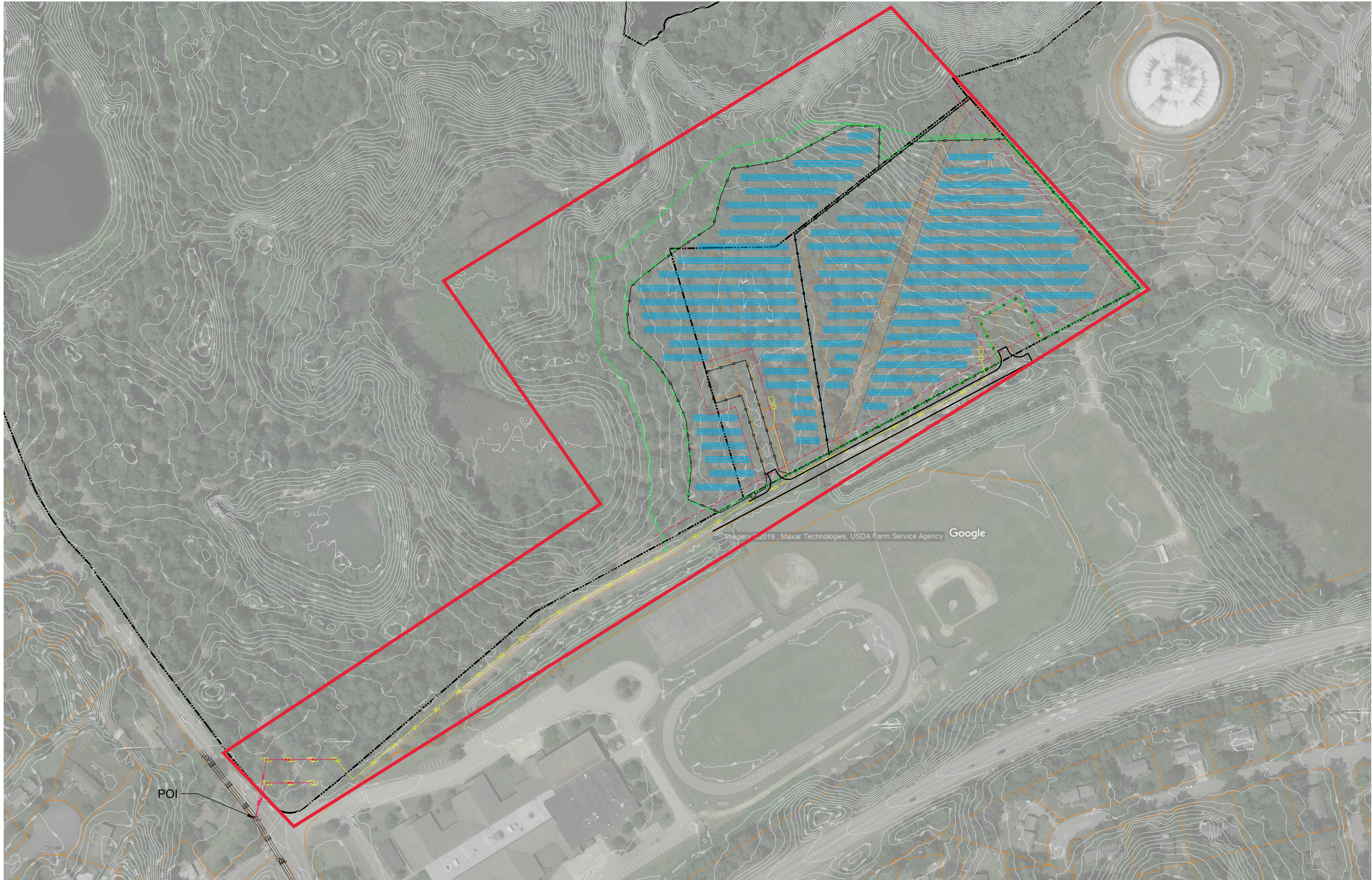
NO.	DATE	REVISION	BY

ZONING BOARD OF ADJUSTMENT PLAN
PROPOSED SITE PLAN
OLD HARRIS ROAD
NASHUA, NEW HAMPSHIRE
PREPARED FOR:
GSSG NEW HAMPSHIRE, LLC
36 MAPLE AVENUE PORTSMOUTH, NEW HAMPSHIRE 03801
RECORD OWNER:
Pennichuck Water Works & Pennichuck Water Works, Inc.
25 MANCHESTER STREET P.O. BOX 1947 MERRIMACK, NH 03054

100 0 100 200 300 400 FEET
50 0 50 100 METERS
SCALE: 1"=100 Feet
1"=30.480 Meters
15 JUNE 2020

HSI Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
3 Congress Street Nashua, NH 03062 (603) 883-2057
131 Middlesex Turnpike Burlington, MA 01803 (781) 203-1501
www.haynerswanson.com

FIELD BOOK: 1244	DRAWING NAME: 5677-FV63	5677	2 OF 2
DRAWING LOC.: \\S000\\5677\\DWG\\5677 ZONING		File Number	Sheet

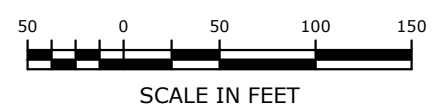


SOLAR PROGRAM TOTALS-EAST ARRAY

NO. 27-STRINGS: 119
NO. MODULES: 3,213
MODULE RATING: 390W
ARRAY OUTPUT: 0.93MW AC /1.25MW DC

— OHW —

PROP. OH ELECTRIC
PROP. UTILITY POLE
PROP. CLEARING/STUMPING
PROP. TREELINE NO STUMPING

[illegible]

Appendix III: Site Photographs

PHOTO 'A'
OLD HARRIS ROAD LOOKING
WEST TOWARDS MANCHESTER
STREET



PHOTO 'B'
OLD HARRIS ROAD LOOKING
EAST TOWARDS SITE





Description: Southwest of proposed PV arrays, looking north. Typical wooded interior of Site with some mature trees and sparse understory. Cut stumps are visible from previous management activities.



Description: Southwest of proposed PV arrays, looking north. Typical wooded interior of Site. Topography is generally flat through much of the interior of the Site, beginning to slope toward the western portion of the Site.



Description: Evidence of old cart path or logging road through the Site.



Description: Northern portion of site, looking northwest. Typical wooded interior at base of small slope in the northernmost section of the Site.



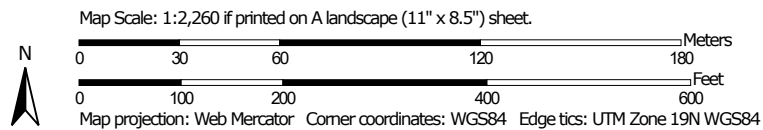
Description: Interior of site, looking northeast. The gas line easement running through the Site is maintained and kept free of mature trees.

Appendix IV: Land Use

Soil Map—Hillsborough County, New Hampshire, Eastern Part (shapefile)



Soil Map may not be valid at this scale.



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

3/17/2021
Page 1 of 3

Soil Map—Hillsborough County, New Hampshire, Eastern Part
(shapefile)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part

Survey Area Data: Version 22, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2014—Jun 26, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HsB	Hinckley loamy sand, 3 to 8 percent slopes	11.4	80.1%
HsC	Hinckley loamy sand, 8 to 15 percent slopes	0.9	6.5%
HsD	Hinckley loamy sand, 15 to 35 percent slopes	1.6	11.4%
PiA	Pipestone loamy sand, 0 to 3 percent slopes	0.3	2.0%
Totals for Area of Interest		14.2	100.0%

Subject: RE: Pennichuck Solar Project | AD-1006
Date: Thursday, March 18, 2021 at 6:05:12 AM Pacific Daylight Time
From: Whitcomb, Peter - NRCS, Concord, NH
To: Eric Lee
CC: Ross, Becky - NRCS, Dover, NH, Rock, Jessica - NRCS, Concord, NH, Geiger, Michael, - RD, Washington, DC, Brendan Bell
Attachments: image003.jpg, image002.jpg, image006.jpg

Good morning Eric,

Becky Ross forwarded your letter and request for guidance on the Farmland Protection Policy Act.

I have reviewed the documents you sent. None of the soils listed in the Pennichuck Solar Project area are Important Farmland, so **form AD-1006 is not required** and FPPA requirements have been fulfilled. No further considerations are required.

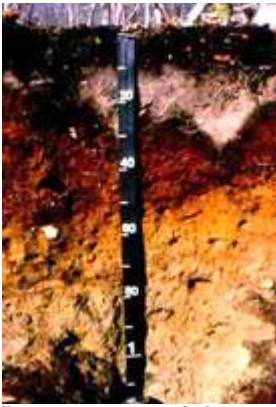
Summary by Map Unit — Hillsborough County, New Hampshire, Eastern Part (NH60)		
Map unit symbol	Map unit name	
HsB	Hinckley loamy sand, 3 to 8 percent slopes	Not pi
HsC	Hinckley loamy sand, 8 to 15 percent slopes	Not pi
HsD	Hinckley loamy sand, 15 to 35 percent slopes	Not pi
PiA	Pipestone loamy sand, 0 to 3 percent slopes	Not pi

If you have any questions, please feel free to contact me.

Peter

Peter Whitcomb

Assistant State Soil Scientist
 Cultural Resources Coordinator
 State Resource Inventory Coordinator
 Natural Resources Conservation Service
 U.S. Department of Agriculture
 The Concord Center, 10 Ferry St, Suite 211
 Concord, NH 03301
 Phone: 603-223-6024
peter.whitcomb@usda.gov



"We are part of the earth
and it is part of us" - *Chief Seattle*

From: Eric Lee <eric@alignedclimatecapital.com>

Sent: Wednesday, March 17, 2021 7:22 PM

To: Rock, Jessica - NRCS, Concord, NH <Jessica.Rock@usda.gov>; Ross, Becky - NRCS, Dover, NH <becky.ross@usda.gov>

Cc: Geiger, Michael, - RD, Washington, DC <Michael.Geiger@usda.gov>; Brendan Bell <brendan@alignedclimatecapital.com>

Subject: [External Email]Pennichuck Solar Project | AD-1006

Hi Jessica and Becky,

As a means of quick introduction, my name is Eric Lee, and I am reaching out on behalf of Aligned Climate Capital. Currently, our firm is seeking financial assistance from the USDA's Rural Utilities Service, Rural Development Agency, for a proposed 2,250 kilowatt (kWDC) ground-mount solar photovoltaic facility located at 200 Concord Street, Nashua, NH 03064. This project is referred to as Pennichuck Solar.

In this process, I've been advised to reach out to you both to seek guidance on the Farmland Conversion Impact Rating Form (AD-1006). I've attached both the relevant form and respective soil map of our proposed site for reference. Is this something you may be able to help me execute? If not, would you please direct me to the appropriate contact?

Thank you so much, and I look forward to hearing back.

Eric Lee
Vice President

Aligned Climate Capital
3900 W Alameda Ave.
Los Angeles, CA 91505

Mobile: (818) 640-6717

LinkedIn: <https://www.linkedin.com/in/eleel593/>

My Map

Pennichuck Solar



USA Generalized Federal Lands (Mature Support)

NationalMapFederalLands

- Forest Service
- Department of Defense
- Bureau of Land Management
- US Fish and Wildlife Service
- National Park Service
- Bureau of Indian Affairs
- Bureau of Reclamation
- Other Agencies



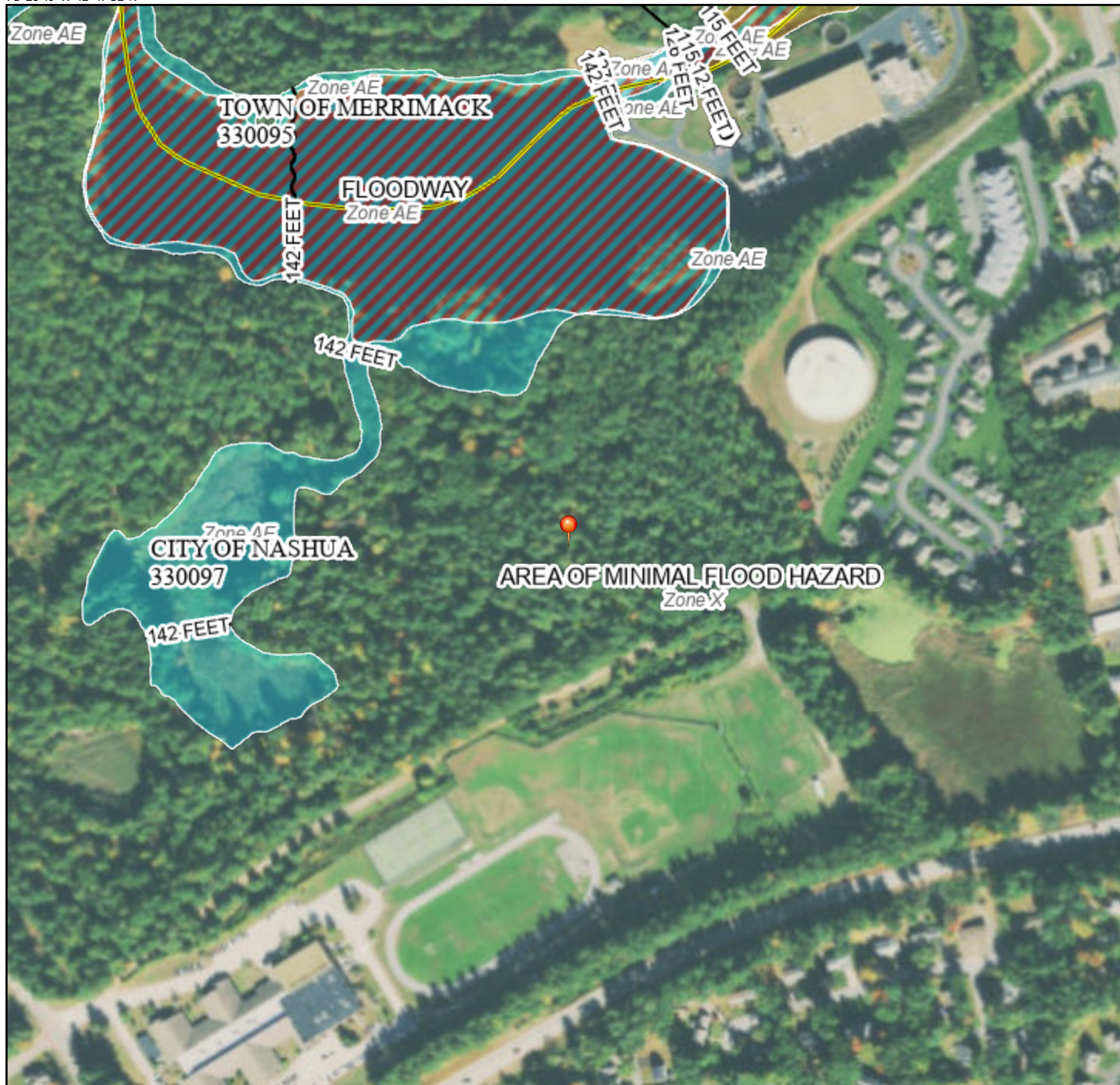
nationamap.gov | USDA FSA, GeoEye, Maxar | Esri Community Maps Contributors, City of Nashua, MassGIS, VCGI, BuildingFootprintUSA, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Appendix V: Flood Plains

National Flood Hazard Layer FIRMette



71°28'49"W 42°47'32"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **3/17/2021 at 7:38 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix VI: Wetlands



U.S. Fish and Wildlife Service

National Wetlands Inventory

Pennichuck Solar



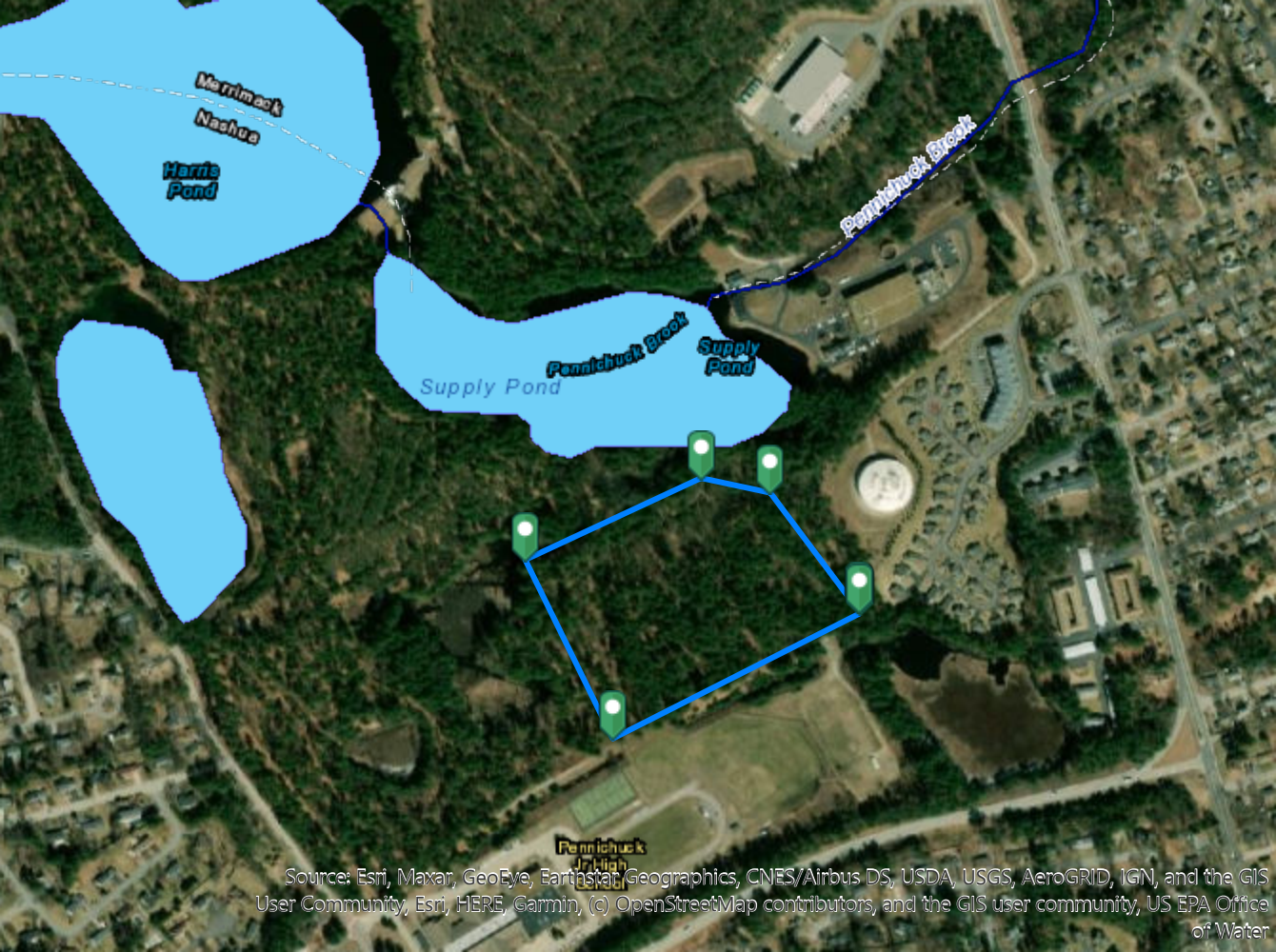
March 18, 2021

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix VII: Water Resources

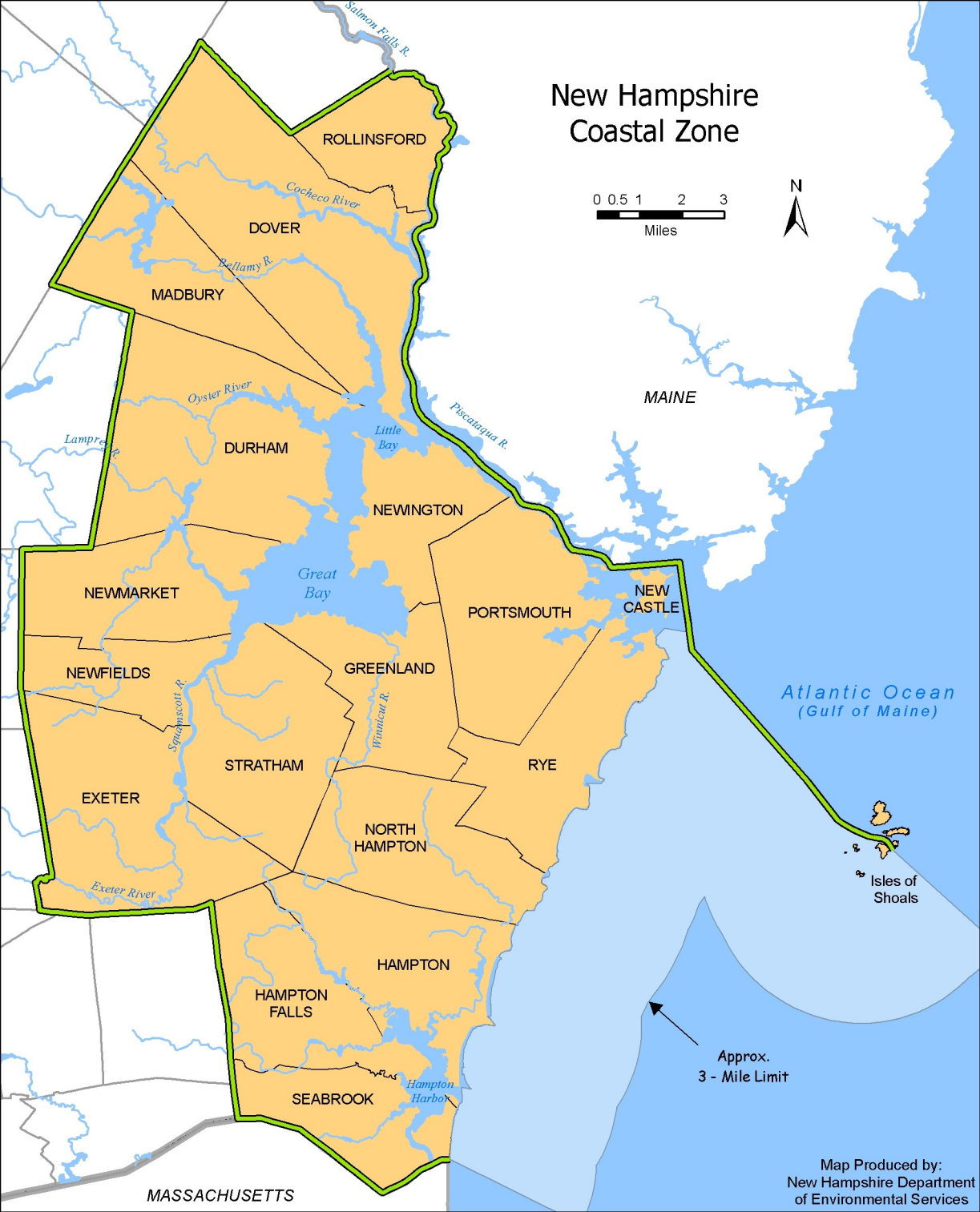


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, US EPA Office of Water

Appendix VIII: Coastal Resources

New Hampshire Coastal Zone

0 0.5 1 2 3
Miles



Atlantic Ocean
(Gulf of Maine)

Isles of
Shoals



Approx.
3 - Mile Limit



Pennichuck Solar



CBRS Units

-  Otherwise Protected Area
 System Unit

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at <https://www.fws.gov/cbra/maps/index.html>. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (<http://www.fws.gov/cbra/Determinations.html>) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS mapper.

Appendix IX: Biological Resources



September 14, 2020

Ref: 52705.00

Michael Redding
GSSG New Hampshire, LLC
36 Maplewood Ave.
Portsmouth, NH 03801

RE: Wildlife Habitat Assessment – Manchester St. and Harris Rd., Nashua

Dear Mr. Redding:

VHB has prepared this wildlife habitat assessment for a photovoltaic (PV) solar array development (the Project) on an approximately 26-acre parcel at Manchester Street and Harris Road in Nashua, NH (the Site). This assessment was prepared to demonstrate that the Project has been designed in a manner that will not jeopardize state- or federally-listed endangered species, in accordance with New Hampshire state rules regarding Alteration of Terrain (AoT) permits¹. The assessment of the Site included a desktop analysis and a site investigation on August 28, 2020 to document existing conditions. The following sections discuss the existing conditions on the Site, any suitable habitat or important habitat features within the Site, and the proposed Project and recommended best practices to avoid, minimize, and mitigate potential impacts to wildlife habitat on the Site.

Site Overview and Existing Conditions

The Site is an approximately 26-acre parcel northwest of the Pennichuck Middle School in Nashua, NH. The Site is bounded by the Middle School and associated playing fields to the south and southeast, by land owned and operated by the Pennichuck Water Works, including several large water management areas and reservoirs, to the north and northwest, and by residential areas to the east and west. The Site is currently undeveloped and consists of wooded uplands, with wetland areas located mainly to the north and northwest. The Site extends for approximately 2,150 feet along the northwest side of the school property. The western/southwestern portion of the Site is a narrow strip approximately 200 feet wide that extends from Manchester Street along the school property for approximately 900 feet. The remainder of the Site is approximately 800 feet wide. Figure 1 shows an aerial image of the Site and surrounding area.

The Site consists primarily of managed oak-pine wooded uplands. The area is periodically culled of hardwoods and tall pine trees by the Pennichuck Water Works; although no recent activity was observed on the day of the site investigation, cut stumps are evident scattered throughout the Site. The resulting

¹ New Hampshire Rules, Env-Wq 1503.19 intro and (h), effective June 2, 2020.



existing condition is a moderately wooded upland with a canopy of mature trees and a generally sparse to moderate shrub understory and sparse herbaceous layer. Dominant species in the wooded areas include white pine (*Pinus strobus*), northern red oak (*Quercus rubra*), red maple (*Acer rubrum*), white oak (*Quercus alba*), lowbush blueberry (*Vaccinium angustifolium*), maple-leaf viburnum (*Viburnum acerifolium*), wild sarsaparilla (*Aralia nudicaulis*), Virginia creeper (*Parthenocissus quinquefolia*), hay-scented fern (*Dennstaedtia punctilobula*), and Canada mayflower (*Maianthemum canadense*). Invasive and opportunistic species are also present on the site including glossy buckthorn (*Frangula alnus*), American burnweed (*Erechtites hieraciifolius*), and Asiatic bittersweet (*Celastrus orbiculatus*). Most disturbed areas and invasive plants are limited to the access road and fence along the southeast boundary of the Site, but the glossy buckthorn is present throughout. Other signs of prior disturbance are also present on the Site such as old cart paths or logging roads. A large water tank sits on a small rise northeast of the Site; the area around the tank is actively mowed and maintained. Finally, a gas line easement runs approximately northeast-southwest across the eastern third of the Site; the easement is kept free of adult trees as is typical with maintenance along gas lines.

The Site also contains several wetland areas along the northwestern and southwestern boundaries of the wider portion of the Site. A large flooded palustrine emergent wetland is present at the southwestern boundary; this wetland drains roughly north and northeast, eventually draining into a small unnamed low-gradient stream that flows into Supply Pond to the north. The wetlands held several feet of standing water and the stream was flowing on the day of the site investigation. Vegetation in the deepwater portions of the wetlands consisted almost entirely of broad-leaved cattail (*Typha latifolia*), with common reed (*Phragmites australis*) and woolgrass (*Scirpus cyperinus*) present in the shallower portions. Duckweed (family Lemnaceae) is present in open water areas. Dominant species along the edges of the wetlands include red maple, white pine, glossy buckthorn, lurid sedge (*Carex lurida*), arrow-leaved tearthumb (*Persicaria sagittata*), and cinnamon fern (*Osmundastrum cinnamomeum*).

The Site generally has gradual topography and slopes from its highest point of approximately elevation 194 on a small hilltop in the northernmost corner gradually down to approximately elevation 170 at the base of the hill in the northeastern third of the Site. Grades then very gradually slope down to approximately elevation 160 on the southwestern side of the Site before dropping off more abruptly into the wetlands. Grades are also steep along most of the northwest boundary of the Site down to the unnamed stream. According to the NRCS County Soil Survey, soils on the Site are classified almost exclusively as Hinckley loamy sand, a well-drained sandy upland soil.

A portion of the Site is listed as conservation land protected by the Pennichuck Water Works. This protected area encompasses much of the offsite wetlands and also includes a small strip of land that crosses the narrow portion of the Site, although there is no surface stream in this area.

The New Hampshire Department of Fish and Game has prepared a Wildlife Action Plan (WAP) to identify areas of conservation need and to guide activities to minimize impacts to rare and endangered species. GIS datalayers are available that show designated important wildlife areas and cover types. Figures 2 and 3 show the WAP layers for the Site. The WAP has mapped nearly the entire Site as "Highest Ranked Habitat in Region." The Site is located generally at the southernmost extent of a large area that has been given this designation. The area encompasses a complex of several large interconnected ponds, including Supply Pond, which eventually drain to the Merrimack River, along with associated wooded uplands. The



WAP also maps cover types, and has designated most of the wider portion of the Site as a combination of pine barren and Appalachian oak-pine. The narrow portion of the Site is mapped primarily as developed or barren land interspersed with portions of pine barren and Appalachian oak-pine.

Target Species and Site Habitat Assessment

The New Hampshire Natural Heritage Bureau (NHB) maintains a database of documented rare species populations and observations for the state. For any applicant seeking an AoT permit, coordination with the NHB is required. The NHB provided GSSG with rare species listings for the Site and the surrounding area on October 25, 2019. The NHB identified bald eagle (*Haliaeetus leucocephalus*) as having three known nesting locations north of the Site, along the interconnected pond complex. The nearest known nest is approximately 500 feet northwest of the Site.

The Site was first assessed based on a review of available information including NH GRANIT data layers, aerial imagery, and a conceptual design plan of the Project provided by GSSG New Hampshire. VHB staff then performed a walkover of the entire Site on August 28, 2020. The weather was clear and sunny with temperatures in the 80s (°F). The Site was assessed by first walking the perimeter of the wider portion of the Site, and then performing northwest-southeast transects approximately every 100 feet throughout the Site. Visibility was good throughout the entire Site.

No rare, threatened, or endangered species were observed using the Site on the day of the site investigation. However, bald eagles were observed flying over Supply Pond north of the site in the vicinity of the known nest location, suggesting that the nest is active. The Site does not offer any habitat of particular value for bald eagles, as the open water areas they typically use for hunting are all offsite to the north. The most notable feature on the Site is a single 30-inch diameter white pine tree in the wooded interior. While bald eagles typically establish nests in white pines, other trees of similar or larger size are present throughout the woods adjacent to the series of interconnected ponds, and the existing established nest north of the Project Site is likely too close to this tree to allow for its use as a nesting site. Most trees on the Site are considerably smaller than this and the Pennichuck Water Works occasionally removes the largest trees on the Site.

The remainder of the Site generally consists of the uniform managed wooded area described above. No other important wildlife habitat features are present such as stone walls, overhangs, other potential nesting locations, or sandy open areas. The Site is enclosed along the southeastern boundary by an 8-foot high chain link fence to protect areas maintained by the Pennichuck Water Works. The largest diversity of habitat and cover types occurs where the upland areas transition to the wetland areas. These areas of the Site are characterized by changes in topography, vegetation, and hydrology and provide a connection to the rest of the wetland/upland complex north of the Site. The change in physical characteristics provides opportunities for different types of wildlife and can enhance the biodiversity of an area.

No other species of particular significance were observed using the Site on the day of the site investigation. Deer scat was observed in locations throughout the Site. Chewed trees were present near the wetlands along the southwestern side of the wide portion of the Site, indicating prior beaver activity. Other wildlife observed or identified on the day of the site investigation include common bird and



mammal species such as blue jay, grackle, black-capped chickadee, downy woodpecker, tufted titmouse, yellow warbler, and eastern chipmunk.

Project Overview and Best Practice Considerations

The Project will install a ground-mounted array of PV panels with a total designed output capacity of approximately 1.7 MW. The arrays are clustered on the eastern side of the site, in the easternmost corner and along a portion of the southeast boundary of the Site. The Project will also construct a utility line along the access road at the southeast boundary of the Site to connect into the existing power grid. The attached Figure C 1.0 shows the proposed conceptual layout of the PV arrays.

An important general guiding principle in designing a given project around sensitive natural resources is Avoid, Minimize, Mitigate. Projects should seek to avoid impacts to resources wherever possible. Where impacts are unavoidable, projects should minimize those impacts to the extent practicable. Finally, where impacts occur, projects should mitigate for those impacts with the goal of providing a net benefit to the resource or resources in question, or at least no net loss of function within the resource. Project design should consider proximity to resources, the nature and scale of any work that may impact resources, and any measures that may enhance or complement the resources.

The proposed PV array has been designed in a manner that considers and makes use of the general principle of Avoid, Minimize, Mitigate. As described previously, the arrays are clustered in the eastern corner and along the southeast boundary of the Site. These areas are furthest away from both the known bald eagle nest north of the Site and the wetlands along the southwestern and northwestern boundaries. The Project will maintain at least a 100-foot strip of woodlands adjacent to the wetland areas, which will maintain habitat connectivity around and between these wetland areas. No impacts to wetland resource areas will result from the Project. The Project is also located as far away as possible from the known bald eagle nest north of the Site, and the area of the proposed PV arrays is in the portion of the Site bounded by and maintained by the middle school and the Pennichuck Water Works.

Best Practice Considerations

While the Project does not propose any impacts to important wildlife habitat or known rare species habitat, the work will still remove trees in and around the area of the proposed arrays and will convert an area of existing managed woodlands to a new cover type in and around the arrays. Design elements can be incorporated into the proposed Project that can help enhance the final condition. The Project can therefore have a beneficial impact on the landscape from the perspective of increasing potential species diversity in the area, while avoiding any impacts to important rare species habitats or features and wetland resource areas.

Plantings

The Project will remove not only the trees within the footprint of the proposed PV arrays but will also clear trees around the arrays to prevent shading and keep the panels free from potential treefall damage. The vegetation among the panels will need to be kept low in its final condition in order to prevent shading. However, appropriate plantings can increase landscape diversity and potentially biodiversity in the area. This can be accomplished by planting a native wildflower mix or other seed mix of high native value



around a portion or all of the panel arrays. Meadows and pastures provide important habitat for many pollinators, particularly honeybees, whose populations have declined in recent years. Other pollinators and insects can in turn provide a food source for birds, dragonflies, and other insect eaters.

In addition to plantings among the panels, the cleared area around the panels may be enhanced through shrub plantings to provide a transitional area between the panels and the existing woodlands. Shrub-dominated areas are relatively rare across the landscape over long periods of time because they are typically in transition and eventually become woodlands. In managed areas such as utility rights-of-way, the resulting shrub corridors often provide valuable food, shelter, and migration corridors for birds and other wildlife that use these types of habitats. Native shrub plantings around the panels can serve a similar purpose.

Structural Components

The Project may also consider structural components in its design that can provide additional or new habitat features. Structural components are semi-permanent or permanent physical landscape features that wildlife may use for shelter, denning, nesting, foraging, or other activities.

Effective habitat enhancements can be accomplished by using a variety of natural materials. Stone piles or rows of stone (to simulate a stone wall) are often used by snakes and small mammals. Large stones can also provide potential denning areas. Large logs, downed trees, or constructed brush piles can also be used to provide long-term natural material used by wildlife. When first placed, these materials provide shelter and denning opportunities; as the tree or brush decays over time it also provides a food source for insects, which can attract additional wildlife.

In areas with known or suspected turtle activity and appropriate soils, bare sandy areas can be established in and around the Project footprint that may encourage turtle nesting and egg laying.

Finally, any fencing installed around the Project perimeter should consider leaving sufficient space at the bottom to facilitate animal passage.

Conclusion

The Site was investigated on August 28, 2020 to document existing conditions and assess its suitability to provide habitat for rare, threatened, or endangered species. There were no direct observations or evidence of use of the Site by threatened or endangered species. Aside from one large tree the Site does not have any important wildlife habitat features and likely does not provide a meaningful habitat corridor for species. The Project would occur in the area of the Site furthest from any wetland resource areas and from known bald eagle nesting locations offsite. Opportunities exist to enhance the wildlife habitat value of the landscape in and around the proposed PV arrays through plantings and structural components. In our best professional judgment, the Project therefore meets the standards set forth in the New Hampshire state rules. Specifically, the Project will not jeopardize the continued existence of state- or federally-listed threatened or endangered species or result in the destruction or modification of habitat of such species which is determined by the executive director of the New Hampshire Fish and Game Department to be critical.

Manchester St. and Harris Rd., Loudon
September 14, 2020
Page 6



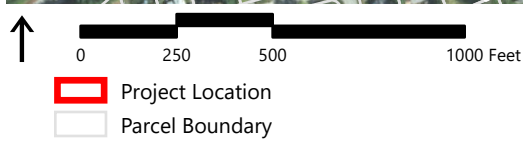
Please see the attached photo log for representative pictures of existing conditions on the Site. If you have any questions concerning this submittal or require additional information, feel free to contact me at 617-607-2653.

Regards,

A handwritten signature in blue ink, reading 'Christopher J. Wagner', with a stylized flourish at the end.

Christopher J. Wagner, PWS
Senior Environmental Scientist

att: Figures
Photo Log
NHB Report 19-3926



Pennichuck Water Solar Array | Nashua, New Hampshire

Aerial Overview Map



Pennichuck Water Solar Array | Nashua, New Hampshire

- | | |
|------------------|---|
| Project Location | Wildlife Action Plan Ranked Wildlife Habitat |
| Parcel Boundary | 1 Highest Ranked Habitat in New Hampshire |
| | 2 Highest Ranked Habitat in Biological Region |
| | 3 Supporting Landscapes |

**Wildlife Action Plan
Ranked Wildlife Habitat**

Source: NHGRANIT, VHB, ArcGIS Online



- | | |
|--|--|
| Project Location | Wildlife Action Plan Land Cover Type |
| Parcel Boundary | Appalachian oak-pine |
| | Grassland |
| | Hemlock-hardwood-pine |
| | NLCD Developed or Barren |

Pennichuck Water Solar Array | Nashua, New Hampshire

- | |
|---|
| Open water |
| Peatland |
| Pine barren |
| Temperate swamp |
| Wet meadow/shrub wetland |

**Wildlife Action Plan
Land Cover Type**

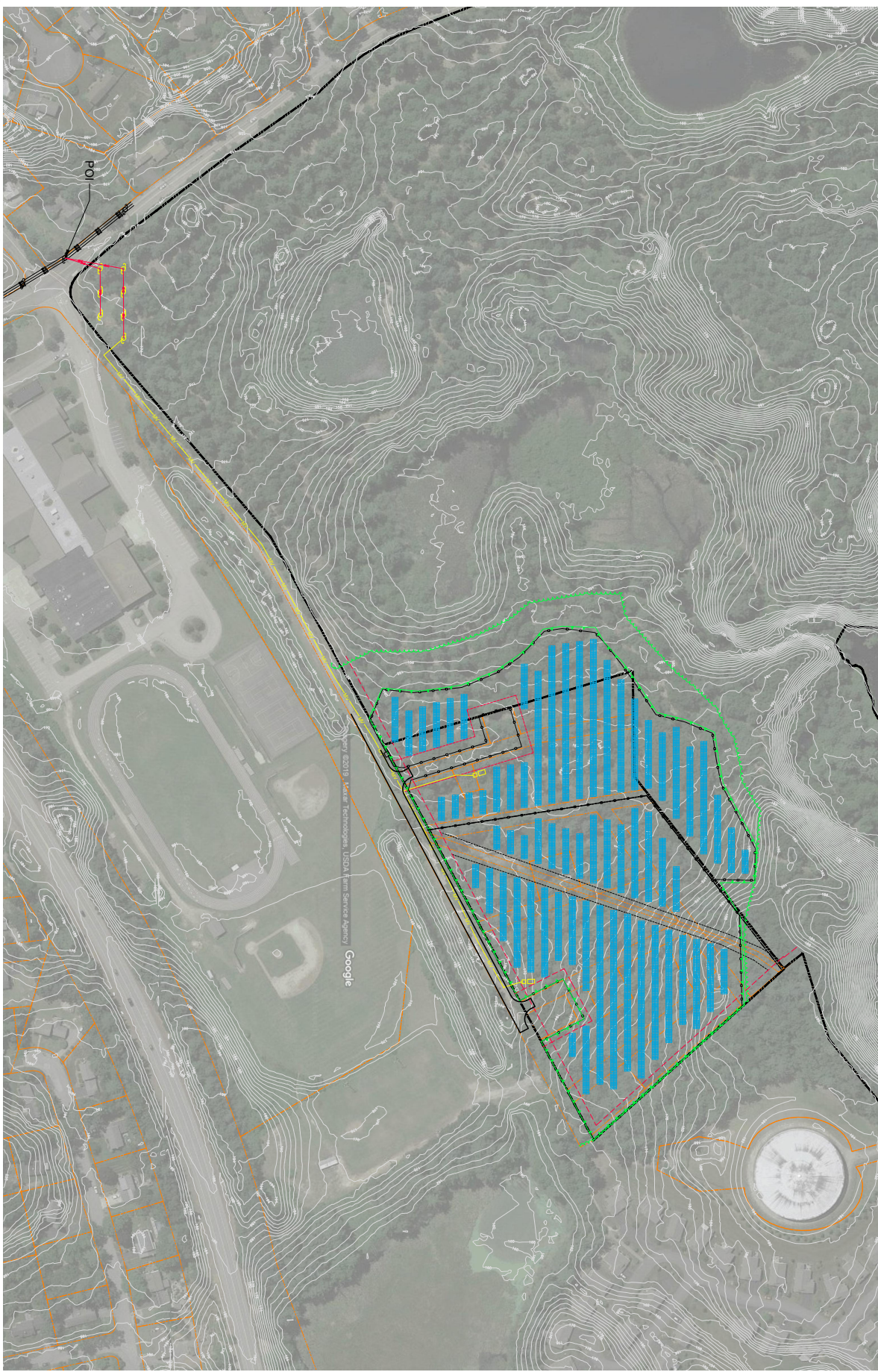
Source: NHGRANIT, VHB, ArcGIS Online



SOLAR PROGRAM TOTALS-WEST ARRAY
NO. 27-STRINGS: 98
NO. MODULES: 2,646
MODULE RATING: 390W
ARRAY OUTPUT: 0.76MW AC / 1.03MW DC

SOLAR PROGRAM TOTALS-EAST ARRAY
NO. 27-STRINGS: 119
NO. MODULES: 3,213
MODULE RATING: 390W
ARRAY OUTPUT: 0.93MW AC / 1.25MW DC

- LEGEND**
- PROJECT PARCEL
 - ADJUTING PARCEL
 - TRAIL / PATH
 - WETLANDS
 - TOWN SETBACK WETLANDS
 - BUILDING
 - OVERHEAD ELECTRIC
 - UTILITY POLE
 - TREELINE
 - PROP. GRAVEL ROAD
 - PROP. CHANNEL FENCE
 - PROP. SOLAR ARRAY
 - PROP. OH ELECTRIC
 - PROP. UTILITY POLE
 - PROP. TREELINE NO STUMPING







PENNICHUCK WATER SOLAR ARRAY
GSSG NEW HAMPSHIRE, LLC
PROPOSED CONDITIONS
SOLAR ARRAY DEVELOPMENT PLAN
MANCHESTER STREET AND HARRIS ROAD

DATE	1" = 100'
DATE	04/20/20
DATE	05/04/20



NEW ENGLAND SOLAR GARDEN CORP.
35 MAPLEWOOD AVE.
PORTSMOUTH, NEW HAMPSHIRE 03801

REV	DESCRIPTION OF REVISION	DATE	APPR.
1	REVISED LAYOUT DUE TO ALTA/BETBACKSLOT LINE MERGERS		



 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 1	Date: 8/28/20		
Description: Southwest of proposed PV arrays, looking north. Typical wooded interior of Site with some mature trees and sparse understory. Cut stumps are visible from previous management activities.			

 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 2	Date: 8/28/20		
Description: Southwest of proposed PV arrays, looking north. Typical wooded interior of Site. Topography is generally flat through much of the interior of the Site, beginning to slope toward the wetlands only in the western portion of the Site.			

 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 3	Date: 8/28/20		
Description: Edge of wetlands along southwestern boundary of Site, looking west. Flooded conditions are present. Evidence of beaver activity on tree in lower right.			

 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 4	Date: 8/28/20		
Description: Evidence of old cart path or logging road through the Site.			

 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 5	Date: 8/28/20		
Description: Northwestern edge of site, looking north. The wetland areas flow into a low-gradient stream that eventually drains to Supply Pond.			

 Engineers Scientists Planners Designers		<h2>Photographic Log</h2>	
Client Name: GSSG New Hampshire, LLC		Site Location: Manchester St., Nashua, NH	
Project No: 52705.00			
Photo No.: 6	Date: 8/28/20		
Description: Northern portion of site, looking northwest. Typical wooded interior at base of small slope in the northernmost section of the Site.			



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:

March 17, 2021

Consultation code: 05E1NE00-2021-TA-1880

Event Code: 05E1NE00-2021-E-05949

Project Name: Pennichuck Solar

Subject: Verification letter for the 'Pennichuck Solar' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Eric Lee:

The U.S. Fish and Wildlife Service (Service) received on March 17, 2021 your effects determination for the 'Pennichuck Solar' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

March 17, 2021

Consultation Code: 05E1NE00-2021-SLI-1880

Event Code: 05E1NE00-2021-E-05948

Project Name: Pennichuck Solar

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 (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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 Act, 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 website 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.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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 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://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

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 Act. 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 England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-1880

Event Code: 05E1NE00-2021-E-05948

Project Name: Pennichuck Solar

Project Type: POWER GENERATION

Project Description: 2.250 MWdc Solar Project in Hillsborough County, NH

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.78820815,-71.47539832186644,14z>



Counties: Hillsborough County, New Hampshire

Endangered Species Act Species

There is a total of 1 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 Fisheries¹, 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.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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



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In Reply Refer To:

March 17, 2021

Consultation code: 05E1NE00-2021-TA-1880

Event Code: 05E1NE00-2021-E-05949

Project Name: Pennichuck Solar

Subject: Verification letter for the 'Pennichuck Solar' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Eric Lee:

The U.S. Fish and Wildlife Service (Service) received on March 17, 2021 your effects determination for the 'Pennichuck Solar' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Pennichuck Solar

2. Description

The following description was provided for the project 'Pennichuck Solar':

2.250 MWdc Solar Project in Hillsborough County, NH

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.78820815,-71.47539832186644,14z>

**Determination Key Result**

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may

affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
 7. Will the action involve Tree Removal?
Yes
-

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

4

2. If known, estimated acres of forest conversion from April 1 to October 31

4

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

NORTHEAST BALD EAGLE PROJECT SCREENING FORM



Welcome!

What is the purpose of this form? The U.S. Fish and Wildlife Service (Service) designed this form as a voluntary tool to help people comply with the Bald and Golden Eagle Protection Act (BGEPA) by planning activities in a manner that avoids disturbing nesting bald eagles. To disturb a bald eagle nest means to agitate or bother a bald eagle to a degree that causes, or is likely to cause, that eagle to abandon its nest, suffer injury, or be unable to perform activities necessary to its survival. While all guidance included in this form is voluntary, individuals and organizations that disturb eagles may be subject to fine and prosecution under BGEPA.

How is this form different from the National Bald Eagle Management Guidelines? The National Bald Eagle Management Guidelines ([Guidelines](#)) is a document published by the Service in 2007 that provides background information on the biology of bald eagles, explains the Federal laws and regulations protecting them, and lays out guidance for several categories of human activities that can affect their nesting. This form takes the Guideline's recommendations, fits them to the regional conditions of the Northeast, and offers them to you in an interactive and intuitive format. Because the form fits its assessments and recommendations to the needs and behaviors of nesting bald eagles in the Northeast, you may find that it differs from the Guidelines on certain details. Nonetheless, the ultimate goal remains the same: to keep project proponents in compliance with BGEPA, while also protecting nesting bald eagles from disturbance.

How this form works. To complete this form, first, find the category of activities that includes your proposed activity. Then, go to the page listed for that category to assess whether your project may risk disturbing nesting bald eagles. If the form identifies that your activities may disturb nesting bald eagles, follow the recommended avoidance measures. These measures will identify factors that could influence nesting eagles' sensitivity to your activities: distance, visibility, timing, and exposure to other human activities. Sign the self-certification that you have committed to implementing the appropriate measures. If your proposed activities fall into multiple categories, repeat this process for each category. Additionally, if your project has the potential to affect multiple nests, complete a separate form for each nest site.

What to do with your completed form. Once you have signed your self-certification, keep the form for your personal records. You do not need to submit your completed form to the Service. Keep the form and additional pages that may be helpful to your future planning and compliance. If a local, state, or federal authority asks for documentation that you are complying with the Service's regional guidance, you can present them with your completed and signed form.

INTRODUCTION

What to know before you start. You will need a few pieces of information to help you complete this form.

Breeding Season

For temporary activities that might be loud or very visible, one of the simplest and most effective ways to avoid disturbing a bald eagle nest is to time the activity when eagles are not nesting, that is, outside the bald eagle breeding season. Wildlife agencies often refer to this type of measure as a time-of-year restriction. The bald eagle breeding season lasts approximately seven to eight months and has many stages. Start and end dates to this season can vary by location, year, and breeding pair. For simplicity, general dates are often set at a statewide level. Consult Appendix A to find the breeding season in your area.

Visibility

For some categories of activities, this form will ask whether your project activities will be visible to the nest. There are two general approaches to answering this question, a desktop assessment and a site visit. A desktop assessment involves consulting online mapping resources, such as Google Maps or state nest maps (see Appendix B), which can display your project location and the nest location on satellite or aerial imagery. When viewing this imagery, look to see whether there are landscape features or structures that might screen the nest's view of your activities. Your assessment is only as good as your imagery. Make sure the imagery is current and accurately reflects visibility conditions on the ground.

The second option is to visit your project location. Assess from various points in your project footprint whether you can see the nest. Use binoculars (4X power or greater) or spotting scope to assist your viewing. If you plan to visit the project site during the breeding season, be aware that your presence could also disturb the nest. Maintain 330' feet between you and the nest, or at least as much distance as the nearest ongoing foot traffic at the nest site. You should only perform your site visit from property legally accessible to you.

Using both the field and desktop approach will give you your best answer. If there is need to select between the two options, a site visit will generally provide a better sense of visibility. In either approach, consider that your activities may become more visible during portions of the year when leaves are off trees and other vegetation.

Nest Location

To figure out how close or how visible your activities will be, you will need precise knowledge of the nest's location. If you do not already have this information, check Appendix B to see if any online or state resources are available. If you are unable to get this information from any of these sources, survey the site. As when assessing visibility, you should only perform your visit on property legally accessible to you. You should also avoid coming within 330 feet of a nest during the breeding season, unless you know that the eagles have previously tolerated people at whatever shorter distance you are planning to use. For descriptions and examples of bald eagle nests, and explanation of how they differ from other large bird nests, see "Appendix C – Guide to Nest Identification."

INTRODUCTION

If you feel unable to perform this search, consider employing the services of a wildlife biologist experienced in this type of surveying. Alternatively, consider contacting your state or local wildlife agency to see if they would be able to perform a site visit (please be aware that many state and local wildlife agencies are constrained in their resources and time and may not be able to offer this service). Be sensitive to sharing information about nest locations. Attracting public interest to a nest site can threaten the safety of that nest. Some states also continue to prohibit the release of nest locations.

It is possible that you will be unable to find a reported nest. While bald eagles commonly use nests across breeding seasons, nests do not always survive from one season to the next. Nests may fall apart of their own accord or be blown down by high winds. Bald eagles may also stop using a nest for one season or more, even if the nest as a structure still exists. In these scenarios, bald eagles may still reuse a former nest site in the following breeding seasons. The temporary absence of a nest or nesting eagles does not absolve you of your responsibilities to avoid disturbing future nesting at that site. The Service recommends implementing the measures included in this form for five years after the last breeding season eagles used a nest or, where the nest no longer exists, three years after the last breeding season in which the nest existed.

Similar Activities

One of the best indicators of what a nesting bald eagle pair will tolerate is what they have already tolerated. In certain places, this form will ask whether the nesting pair has experienced and tolerated similar activities at the nest location. To answer this question, you will need to know about previous human activity at that location. Was that activity similar in nature to what you propose? As close as or closer than what you propose to do? Did it occur at the same time of day? Time of year? Did it last as long? Was it as frequent? Was it as loud? Was it as visible? You will also need to know basic history about the nest. Did the nest exist before that previous activity? Was it ever used after that activity? If your answer to any of these questions is 'no,' you cannot answer 'yes' to the broader question of whether there is similar activity at that site. See "Appendix D – Similar Activity Example Exercise" for a demonstration of how to apply this principle.

Limitations

Know when and how you should be using this form. See "Appendix E – Limitations of this form."

Where to go for help. The Service understands that project proponents may occasionally need clarification on which assessments are relevant to them and how to implement certain avoidance and minimization measures. If you find you are unable to complete this form, you can contact your regional eagle coordinator (Tom Wittig) for assistance at

thomas_wittig@fws.gov - or - 413-253-8577

When emailing, please include in your subject line "BALD EAGLE SCREENING FORM QUESTION." If you are unable to connect with your regional eagle coordinator when calling, please leave a voice message that you are calling about this form and how best to reach you.

For explanation of technical terms used in this form, see "Appendix F – Glossary of Terms."

PROJECT INFORMATION

PROJECT INFORMATION

Project Name: Pennichuck Water Solar

City: Nashua County: Hillsborough County State: NH

Lat/Long (decimal degrees; ex. 38.418310, -76.001096): 42.7882 -71.4760

[Find Lat/Long via map](#)

Size: 12 acres\miles

PROJECT CONTACT INFORMATION

Name: Lillian Fenner Phone: 720334-9153

Address: 36 Maplewood Ave. Portsmouth, NH 03801

Email: lillian@nesolargarden.com

If your project has a Federal (ex. U.S. Army Corps), state (ex. PNDI), or other ID number, please list here: NHB1-3296

PROJECT ACTIVITY CATEGORY(S)

Place a check next to all activities you plan to perform.

- ☒ Construction and Development Activities → go to pages 5 - 7
- ☒ Maintenance and Restoration Activities → go to pages 8 - 9
- ☒ Timber Operation and Forestry Practices → go to page 10
- ☐ Use of Helicopters and Fixed-wing Aircraft → go to page 11
- ☐ Blasting and Other Loud, Intermittent Noises (including Fireworks) → go to page 12
- ☐ Recreational Activities → go to pages 13 – 14

Feedback? The Service is continuously looking to improve this form. If you have suggested changes, please feel free to email them to us at thomas_wittig@fws.gov. Include “Bald Eagle Project Screening Form – Feedback” in your subject line.

Construction and Development Activities

Which specific construction activities do you plan to perform? (check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Building construction | <input type="checkbox"/> Water impoundment or withdrawal |
| <input checked="" type="checkbox"/> Tree and land clearing | <input type="checkbox"/> Mining |
| <input checked="" type="checkbox"/> Construction of roads, trails, canals, power lines, pipelines and other linear utilities | <input type="checkbox"/> Oil and natural gas drilling and refining |
| <input type="checkbox"/> Agriculture or aquaculture – new or expanded operations | <input type="checkbox"/> Wind farm construction |
| <input type="checkbox"/> Alteration of shorelines or wetlands | <input type="checkbox"/> Installation or expansion of marinas with a capacity of 6 or more boats |
| <input type="checkbox"/> Installation of docks, piers, or moorings (pile driving may qualify as loud noise, page 12) | <input type="checkbox"/> Communications tower construction (excluding maintenance and repairs) |

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

- | | | |
|--------------|-----------------|-----------------|
| -duration | -time of season | -area/footprint |
| -frequency | -visibility | -magnitude |
| -time of day | -distance | -nature |

- ☐ Yes → No avoidance measures recommended. Go to self-certification (page 7).
- ☒ No → Go to next question.

Will your activities be visible to the bald eagle nest(s)?

- ☒ Yes → Stop. Implement Avoidance Measures (AM) 2, 4, and 5 (see page 7)
- ☐ No → Go to the next question

Which of these categories most closely matches your proposed project or activity?

(check all that apply)

- ☐ Building construction, 1 or 2 story, with a project footprint of ½ acre or less
- ☐ Construction of roads, trails, canals, power lines, or other linear utilities
- ☐ Agriculture or aquaculture – new or expanded operations
- ☐ Alteration of shorelines or wetlands
- ☐ Installation of docks or moorings
- ☐ Water impoundment or withdrawal
- ☐ Construction of communication towers

→ Implement AM 3, 4 and 5 (page 7)

- ☐ Building construction or expansion, 3 or more stories
- ☐ Building construction or expansion, 1 or 2 story, with project footprint more than ½ acre
- ☐ Mining
- ☐ Oil and natural gas drilling and refining
- ☐ Installation or expansion of marinas with a capacity of 6 or more boats

→ Go to the next question

Is there a similar activity within 1 mile of the nest?

- ☐ Yes → Implement AM 3, 4 and 5 (see page 7)
- ☐ No → Implement AM 1 and 5 (see page 7)

AVOIDANCE MEASURES - Place a check mark next to each avoidance measure (AM) that this form instructed you to implement and that you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

- ☒ AM 1 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest.
- ☒ AM 2 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest. If there is an existing human-made feature (e.g., house, road, dock) similar to your project that is closer than 660 feet and tolerated by the nesting eagles, maintain a distance buffer equal to or greater than the distance separating that tolerated feature and the nest.
- ☒ AM 3 – Maintain a distance buffer of at least 330 feet (100 meters) year-round between all project activities and the nest. If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the distance buffer will be the same or greater than that of the existing tolerated activity.
- ☒ AM 4 – Do not perform disruptive project activities within 660 feet (200 meters) of the nest during the breeding season. This time-of-year restriction is in addition to your recommended distance buffer. Disruptive activities include, but are not limited to, external construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.
- ☒ AM 5 – Maintain existing landscape buffers that visually screen the activity from the nest.

Do you commit to following all recommended avoidance measures?

- ☒ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

Lillian Fenner

(signature)

11/11/20

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Maintenance and Restoration Activities

This category includes outdoor maintenance of existing structures or infrastructure, where the maintenance activity is temporary and obtrusive (e.g., requires use of heavy equipment or loud machinery), and within the previously disturbed footprint of the structure or infrastructure. If maintenance is proposed outside the previously disturbed footprint, see **Construction and Development Activities** (pages 5-7). This category also applies to the maintenance and restoration of natural habitats (e.g., wetlands, streams, rivers, non-forested uplands). This category does not include routine, ongoing activities to which bald eagles have already exhibited a tolerance (e.g., lawn mowing; plowing, planting or harvesting of agricultural fields; etc.).

Which maintenance or restoration activities do you plan to perform? (check all that apply)

- ☒ Maintenance of linear utilities (e.g., power lines, pipelines, water and sewer lines)
- ☐ Road, bridge, or culvert maintenance
- ☐ Trail, campground, or recreational area maintenance
- ☐ Maintenance of oil and gas wells, well pads, and storage tanks
- ☐ Maintenance of dams, levees, berms, canals and other water-control structures
- ☐ Pond, lake, or reservoir maintenance (draw downs, dredging)
- ☐ Stream or stream bank maintenance /restoration (e.g., stream bank fencing, stream bank stabilization, livestock crossings, in-stream habitat improvements, channel maintenance, dredging)
- ☐ Wetland maintenance / restoration (e.g., invasive plant control, restoration of hydrology)
- ☐ Prescribed burning for invasive control
- ☐ Upland habitat maintenance / restoration (e.g., planting or cutting of vegetation, invasive plant control, trash cleanup, abandoned mine lands restoration). This does not include activities in forests/woodlands (see **Timber Operation and Forestry Practices**) or in agricultural fields.

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☒ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

- ☒ AM 6 - Within 660 feet (200 meters) of the nest, perform all loud and intrusive maintenance and restoration work outside the breeding season. These activities include, but are not limited to, the following: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, landscaping, and habitat restoration activities.
- ☒ AM 7 - Maintain existing landscape buffers that visually screen the activity from the nest.
- ☒ AM 8 - Do not perform prescribed burning within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is in use or after the young have fledged from that nest).
- ☒ AM 9 - When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

- ☒ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

Lillian Fenner

(signature)

11/11/20

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Timber Operation and Forestry Practices

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

- ☒ AM 10 – Do not perform clear-cutting or overstory tree removal within 330 feet (100 meters) of the nest at any time of the year.
- ☒ AM 11 - During the breeding season, do not perform timber harvesting, road construction, chain saw use, or yarding operations within 660 feet (200 meters) of the nest. Around alternate nests (including nests that were attended during the current breeding season but not used to raise young), you may reduce this distance to 330 feet (100 meters), provided the eggs laid in another nest within the nesting territory have hatched.
- ☒ AM 12 – Do not construct or operate log transfer facilities and in-water log storage areas within 330 feet (100 meters) of nests at any time of the year.
- ☒ AM 13 – Do not perform selective thinning, prescribed burning, or other similar silviculture practices for the enhancement or conservation of habitat within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest).
- ☒ AM 14 – When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

- ☒ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

Lillian Fenner

(signature)

11/11/20

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Use of a Helicopter and Fixed-wing Aircraft

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

- ☐ AM 15 - During the breeding season, do not fly within 1000 feet (305 meters) of bald eagle nests.

Do you commit to following all recommended avoidance measures?

- ☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.
Go to page 15 for further instruction.

Blasting and Other Loud, Intermittent Noises (including Fireworks)

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of day	-distance
-frequency	-time of season	-volume

- ☐ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

- ☐ AM 16 - During the breeding season, do not perform blasting and other activities that produce extremely loud noises within 1/2 mile (800 meters) of in-use nests. This measure also applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks intended for licensed public display.

Do you commit to following all recommended avoidance measures?

- ☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.
Go to page 15 for further instruction.

Recreational Activities

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to next question

Will your recreation occur during the breeding season?

- ☐ Yes → Go to Avoidance Measures.
- ☐ No → No avoidance measures recommended. Go to self-certification.

AVOIDANCE MEASURES – For each applicable recreational subcategory, place a check mark next to the AMs you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

Non-motorized recreation and human entry (including hiking, camping, fishing, hunting, canoeing)

- ☐ AM 17 - Stay at least 330 feet (100 meters) from the nest if you walk, bike, canoe, camp, fish, or hunt near an eagle nest during the breeding season and your activity will be visible or can be heard from the nest.

Off-road vehicle use (including snowmobiles)

- ☐ AM 18 - Stay at least 330 feet (100 meters) from the nest. In open areas, where there is increased visibility and exposure to noise, stay at least 660 feet (200 meters) from the nest.

RECREATION

Motorized watercraft use (including jet skis/personal watercraft)

- ☐ AM 19 - Do not operate jet skis (personal watercraft) or airboats within 330 feet (100 meters) of the nest.
- ☐ AM 20 - Avoid concentrations of noisy vessels (e.g. commercial fishing boats and tour boats) within 330 feet (100 meters) of the nest, except where eagles have demonstrated tolerance for such activity.
- ☐ AM 21 - For all motorized boat traffic within 330 feet (100 meters) of the nest, minimize trips and avoid stopping in the area, particularly where eagles are unaccustomed to boat traffic.

Do you commit to following all recommended avoidance measures?

- ☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

(signature)

(date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

- ☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

FURTHER GUIDANCE

-- SEEK FURTHER GUIDANCE --

You have indicated that you are unable to implement all the recommended avoidance measures. Without all avoidance measures, your activities may risk disturbing nesting bald eagles.

Consult with your regional eagle coordinator to determine the appropriate next steps. The Service will work with you to help develop alternate measures to avoid disturbance of nesting bald eagles. If there are no feasible alternate measures, the Service may advise that you obtain an eagle incidental take permit to relieve you of legal liability in the event that your activities unintentionally disturb nesting bald eagles.

Contact your regional eagle coordinator (Tom Wittig) for assistance at thomas_wittig@fws.gov

When emailing, please include in your subject line “[Your project name] – SCREENING FORM FURTHER GUIDANCE.” In the body of your message, include

- a brief description of your project, including its location and when you plan to start;
- the activity category(s);
- the ID number(s) (e.g., AM 5) of the Avoidance Measure(s) you are unable to implement; and
- the nest location(s), if available.

To see the Service’s eagle incidental take permit application form, go to

<https://www.fws.gov/forms/3-200-71.pdf>

For answers to Frequently Asked Questions on this form, go to

<https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/3-200-71FAQ.pdf>

The Service advises you talk with your regional eagle coordinator before deciding to apply.

APPENDIX A

Bald Eagle Breeding Season by State

State	Breeding Season
VA	December 15 – July 15
DC	December 15 – July 15
WV	January 1 – June 30
MD	December 15 – June 30
DE	December 15 – June 30
PA	January 1 – July 31
NY	January 1 – September 30
NJ	January 1 – July 31
RI	January 1 – July 31
CT	January 1 – July 31
MA	January 1 – August 15
VT	February 1 – August 15
NH	February 1 – August 15
ME (coastal)	February 1 – August 15
ME (northern)	March 1 – August 30

APPENDIX B

State Mapping Resources

Connecticut

Contact state
Brian Hess, CT DEEP
Brian.Hess@ct.gov

New Jersey

Contact state
<https://www.nj.gov/dep/parksandfor/ests/natural/heritage/datareq.html>

Delaware

Contact state
Katie Kadlubar, Delaware Division of
Fish & Wildlife
Kathryn.Kadlubar@delaware.gov

New York

Contact state
<https://www.dec.ny.gov/animals/31181.html>

DC

Contact National Park Service
Mikaila Milton, NPS
mikaila_milton@nps.gov

Pennsylvania

<https://fws.maps.arcgis.com/apps/webappviewer/index.html?id=87ac96536654495b9f4041d81f75d7a0>

Maine

<https://www.arcgis.com/apps/webappviewer/index.html?id=796b7baa18de43b49f911fe82dc4a0f1>

Rhode Island

Contact state
DEM.DFW@dem.ri.gov

Maryland

<https://marylandbirds.org/report-bald-eagle-nest/>

Vermont

Contact state
<https://vtfishandwildlife.com/conservation/development-review>

Massachusetts

Contact state
Andrew Vitz, MassWildlife
Andrew.vitz@state.ma.us

Virginia

<https://www.ccbbirds.org/maps/#eagles>

New Hampshire

Contact state
https://www2.des.state.nh.us/nhb_datacheck/signin.aspx

West Virginia

Contact state
Rich Bailey, WVDNR
Richard.S.Bailey@wv.gov

Please note that maps are not exhaustive records of all nests within that state.

APPENDIX C

Guide to Nest Identification

Is it a bald eagle nest? Because bald eagle populations have grown so rapidly in recent years, not every bald eagle nest is registered to an online map or known to wildlife management agencies. As a result, project screening form users may occasionally have to make their own assessment of whether the nest near their project or activity is a bald eagle nest. Users should be cautious in making these determinations. Bald eagle nests can easily be confused with nests of other large birds such as osprey.

This guide will help landowners and project proponents assess whether a nest belongs to bald eagles or another species. It describes for readers the most commonly encountered large nests in the Northeast, with several reference figures for bald eagle nests, and provides tips for telling nest types apart. Any user who reads this guide and still feels uncertain about what type of nest they have encountered should contact their regional eagle coordinator for further guidance.

Common types of large nests.Bald Eagle

The most notable aspect to a bald eagle nest is generally its size. Bald eagles build some of the largest nests in the world, with most nests around 5 feet in diameter and 3 feet in height (Fig. 1). Nests can grow well beyond these dimensions (Fig. 2), as bald eagles tend to repair and expand their nests each year and can use individual nests for decades. Bald eagle nests are mainly composed of large interwoven sticks. Nests will also have a soft interior bowl made up of materials such as hay, cornhusks, and grass clippings. However, this portion of the nest is rarely visible to human observers. The shape of bald eagle nests varies; they can take the general form of flat discs, inverted cones, cylinders (Fig. 2), or spheres (Fig. 3).

Bald eagles typically place their nests in prominent trees that sit above the surrounding forest canopy. These nest trees will often be on hillsides, lake and ocean shorelines, riverbanks, and forest edges. Nests are generally in the top third of a tree, below the crown, secured in a prominent fork off the main trunk (Fig. 4.). Bald eagle nests can be in living deciduous (Fig. 3-4) and coniferous trees (Fig. 1), or dead trees (snags; Fig. 5). Within the Northeastern U.S., bald eagles use a wide range of tree types, including white pines, loblolly pines, tulip poplars, sycamores, oaks, and cottonwoods. Despite their common perception as an emblem of wilderness, bald eagles are also increasingly nesting on human-made structures such as electric transmission towers (Fig. 6) and communication towers.

Osprey

Osprey build large stick nests that can look quite similar to bald eagle nests. In general, osprey nests are smaller, flatter, more disorganized, and more often composed of unnatural materials, such as bailing twine and plastic bags. Osprey also show a stronger preference than bald eagles for human made structures, regularly nesting on light polls, channel markers, and cell towers. When osprey do select a natural support for their nest, it tends to be the topmost part of dead trees, in contrast to bald eagles, which seek out slightly lower portions of trees.

The best clue to which species occupies a nest, osprey or bald eagles, is who shows up. Bald eagles arrive back at their nests earlier in the year than osprey, but by late spring, both species are usually attending their nests. At this time of year, watching a nest over a period of hours will generally reveal which species is using it. However, through fall and early winter, both species are usually away from their nests. During these seasons, the only immediate sources of information on nest will be the physical details described above and online mapping resources.

In addition to the state maps for bald eagles listed in Appendix C, Osprey Watch (<http://www.osprey-watch.org/>) provides a mapping database of osprey nest locations. As with the bald eagle mapping resources, this map is thorough, but does not represent all existing nests.

Red-Tailed Hawk/Red-Shouldered Hawk

Generally around 1.5 feet wide and 2 feet tall, nests of red-tailed hawks and red-shouldered hawks are less than one-half the size of bald eagle nests. The individual sticks in these hawk nests also tend to be smaller, with diameters of about 1-2 inches. Overall appearance of these nests can be slightly more frayed and chaotic than that of bald eagle nests. Like bald eagles, both hawk species show a tendency towards nesting in upper portions of prominent trees. Red-tailed hawks also share bald eagle's occasional preference for human made structures such as cell towers and transmission towers.

Common Raven

Common ravens construct stick nests that vary substantially in size, from 1.5 to 5 feet across and from little over 0.5 to 2 feet high. The sticks making up the main structure of these nests can be around 3 feet in length and 1 inch in diameter. Ravens place their nests in a variety of natural and developed settings. Raven nests are easily confused with bald eagle nests when located on cell towers, transmission towers, or in trees. When situated in trees, these nests are usually in the upper portion of the tree in a crotch of the main tree stem. The best means of telling raven and bald eagle nests apart are likely size and shape; raven nests are noted for occasionally being asymmetric, and even at their larger sizes, they still tend to be smaller than bald eagle nests.

Great Horned Owl

In addition to nesting in tree cavities, great horned owls also frequently use the former nests of other animals, including squirrels, ravens, crows, and herons. The size and nature of a great horned owl nest therefore depends on the nest's original creator. Red-tailed hawk may be the most common source of nests for great horned owls in the Northeast. However, great horned owls will also occasionally take over bald eagle nests.

Heron

Hérons nest in colonies known as "rookeries" where many nests are present; individual heron nests are rare. Multiple nests can be present in one tree and some nests may be located relatively high up or far out on branches. Nest sites are usually near water. Heron nests are mainly composed of sticks, and are flat and broad, often resembling a thin platform. Nests used for several years may grow taller and wider. Heron nests can give off a general impression of messiness or flimsiness.

Squirrel

Squirrel nests can reach basketball size or larger. They are distinguished from bird nests mainly by their materials, which include leaves and other soft vegetation material (e.g., grasses), and very few sticks. They are usually round shaped, and often look messy.

Legal definitions and protections for eagle and migratory bird nests.

Eagle Nests

BGEPA protects eagle nests in same manner it protects eagles; they cannot be destroyed, possessed, or relocated without a permit from the Service, which the Service only provides under a limited set of circumstances. Regulation defines an eagle nest as "any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction" (50 CFR 22.3). A nest is an eagle nest if it was built by or ever used by eagles, even if other species of birds played a role in the nest's history. For example, if osprey build a nest and eagles take that nest over, legally, the nest is an eagle nest. Alternatively, if great horned owls begin to use a nest originally built by eagles, that nest remains an eagle nest for as long as it exists. An eagle nest also retains protection regardless of where it was built, whether it was ever finished or successful, or when it was last used. Additionally, BGEPA's protections apply regardless of the nest's size and condition.

Migratory Bird Nests

The Migratory Bird Treaty Act (MBTA) protects migratory bird nests in the many of the same ways that BGEPA protects eagle nests. Unless a permit is in place, migratory bird nests cannot be possessed or relocated at any time or intentionally destroyed while active. One notable difference between MBTA and BGEPA is MBTA's standard on inactive nests. If a migratory bird nest is inactive, meaning it does not contain viable eggs or chicks, it can be destroyed without a permit. (Note: the

APPENDIX C

terms ‘active’ and ‘inactive’ here are different from the ‘in-use’ and ‘alternate’ standards used for eagle nests [see Appendix E for definitions].) For more information, please read the Service’s [2018 Nest Destruction Memo](#). Bird species protected under MBTA are listed under regulation at 50 CFR 10.13. Additional protections not described here apply to any migratory bird species listed under the Endangered Species Act. Tribal, state, and local laws may also place greater restrictions on the destruction of migratory bird nests.

APPENDIX C



Figure 1.



Figure 2.

APPENDIX C



Credit: Craig Koppie/USFWS

Figure 3.



Credit: Craig Koppie/USFWS

Figure 4.



Figure 5.



Figure 6.

APPENDIX D

Similar Activity Example Exercise

What is the purpose of this appendix? This appendix provides project screening form users with an example of how to assess the similarity between two activities. By reading through this example, landowners and project proponents can develop a better sense of what factors they should consider when answering the question of whether their activity is similar to an ongoing or previous activity tolerated by eagles.

In the example scenario, a proposed residential construction project is compared to previous farming activity. The example starts with an overview of the historic farming activity, nest, and proposed project; then goes through a full assessment, set up in table format; and finally closes with a summary of the determination and explanation of how that determination would influence completion of the form.

What is the scenario?Previous/Existing Activities

The project site is a large agricultural field that was farmed nearly every year for the past two decades. Human activity at the site was limited to occasional operation of heavy farm equipment. The broader area out to one mile includes other agricultural fields and medium density residential and commercial development.

Nest Location & History

Five years ago, a pair of bald eagles constructed a nest in a cottonwood located in the hedgerow bordering the agricultural field. The pair were unsuccessful in their first year, but fledged young from the nest each of the following four years up to present. Workers observed that the pair did not respond to operation of farming equipment, but became vigilant whenever an equipment operator stepped outside their vehicle.

Project Narrative

The proposed project will convert portions of the existing agricultural field to a residential development with 30 single-family homes, which places it under the screening form's Construction and Development category. Construction will require extending water, sewage, and electrical utilities and adding a small network of residential streets. Preparing each lot will involve grading, home and driveway construction, and landscaping. Ten acres of property near the nest will be signed over as a conservation easement.

APPENDIX D

Factor	Previous/Existing Activity: Farming	Proposed Activity: Construction	Similar?
NATURE	Heavy equipment preparing field, planting, and harvesting crop. Two-three workers, generally confined to closed cab tractors.	Twenty workers either in heavy equipment or on foot. Ground disturbance. Placement/extension of utilities. Landscaping. Construction of 20 homes.	No
HISTORY	Farming activity predated nesting and continued while eagles successfully fledged young from the nest. This success demonstrates the eagles tolerated the farming.	N/A	Yes
DISTANCE	Distance between farming activity and the nest tree was essentially 0 feet; the hedgerow in which the nest is located bounds the agricultural field.	Nearest lot boundary will be 400 feet from nest. Area between home and nest will be converted conservation easement and left in passive, natural state.	Yes
TIMING	Farming activity began in March and continued through October each year.	Proposed schedule is April through October.	Yes
DURATION	The field was generally worked for one to two days at time, from sunrise to sundown.	On days of construction activity, work will occur during standard business hours.	Yes
FREQUENCY	Intermittent. Farming occurred in stages (e.g., fertilizing, plowing, harvesting) and events were often separated by weeks or months.	Continuous. Work will occur most weekdays and occasionally on weekends.	No
NOISE	Farming equipment (e.g., tractor) generated loud noises within the range of 80 – 100 decibels.	Construction will not require blasting or pile driving. Construction equipment (e.g., backhoes) will generate loud noise within the range of 80 – 95 decibels.	Yes
VISIBILITY	High. Because the field was flat and there was no vegetation other than the hedgerow, practically all farming activity was visible to the nest.	High. There will be no topography or vegetation screening view of construction. Visibility will only begin to lower once exterior walls are put up.	Yes

Final Assessment & Conclusion

The proposed construction activity is different from the historic farming activity in general nature and frequency. Construction will require more workers and more equipment, operating at greater intensity and higher frequency. Because of these differences, the construction cannot be considered similar to the historic farming activity, and it cannot be assumed that the breeding pair will tolerate the activity. Avoidance measures will be necessary to reduce the likelihood of disturbing the nest.

Having made these conclusions, the form user would mark 'No' to the question on page 5 of whether the activity was similar to an ongoing or previous activity. Then, at the next question the user would mark 'Yes' because the project would be visible to nest over the open intervening space. At that point, the form would direct them to implement AMs 2, 4, and 5. The project design, as proposed, would not meet AM 2, the 660-foot buffer. The user's options then would be to revise the project to eliminate the portions within 660 feet of the nest and sign the self-certification, or check no on the commitment to follow all recommended AMs and seek further guidance.

APPENDIX E

Limitations of This Form

This project screening form is not a permit or authorization to disturb bald eagles. It does not free you from legal liability under BGEPA. Rather, this form provides instruction on how to minimize the legal risk of disturbing nesting bald eagles.

The effectiveness of this form depends on the accuracy and completeness of your answers and your compliance with the avoidance measures. Using this form inappropriately may put you at risk of disturbing nesting bald eagles and violating BGEPA.

This form's recommendations are specific to the Northeast and may not be effective outside this region. If your project is in another area of the U.S., do not use this form. Instead, consult with your regional eagle biologist or migratory bird permit office for guidance matched to your locality.

This form only relates to managing activities near bald eagle nests. It does not provide direction on how to avoid disturbing bald eagle communal roosts and concentration areas, which, compared to nest sites, have different biological significance to eagles and present different sets of concerns. If you believe your activities have any potential to affect a communal roost or concentration area, consult the [Guidelines](#) document for guidance.

Conditions such as the location and existence of nests and surrounding habitat are subject to change between years. For this reason, the Service recommends revisiting your determinations every breeding season after completing this form until your project is complete. The more time that passes between when you complete this form and when you end your activities, the more likely it is that conditions will change enough that your original determinations no longer apply.

This form only addresses nesting bald eagles. To identify other USFWS-managed resources and suggested conservation measures for your project, go to <https://ecos.fws.gov/ipac/>.

Wind energy developers seeking to address potential take of eagles should use this form in conjunction with the Service's [Eagle Conservation Plan Guidance](#). Use of this form alone will not assure wind projects' compliance with BGEPA's protections on disturbance or other take.

Certain states and localities have their own laws, regulations, and guidelines for protecting bald eagles and their nests. Completing this form does not guarantee that you are also in compliance with these other standards and/or regulations. If you are unfamiliar with your state and local standards, consult with the appropriate agencies and authorities.

You are responsible for ensuring that your activities comply with all applicable Federal, tribal, State, and local laws and regulations. This form will only help you in your compliance with BGEPA and its protections on the nesting activity of bald eagles.

APPENDIX F

Glossary of Terms

Alternate nest – one of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternate nests. Also sometimes referred to as an inactive nest (e.g., in the Service’s 2009 Eagle Rule).

Communal roost – an area where eagles gather repeatedly in the course of a season and shelter overnight and sometimes during the day in the event of inclement weather.

Disturb – to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Eagle nest – any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction.

Fledge – to leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

In-use nest – a bald or golden eagle nest characterized by the presence of one or more eggs, dependent young, or adult eagles on the nest in the past 10 days during the breeding season. Also sometimes referred to as an active nest.

Landscape buffer – a natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

Nest abandonment – nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the

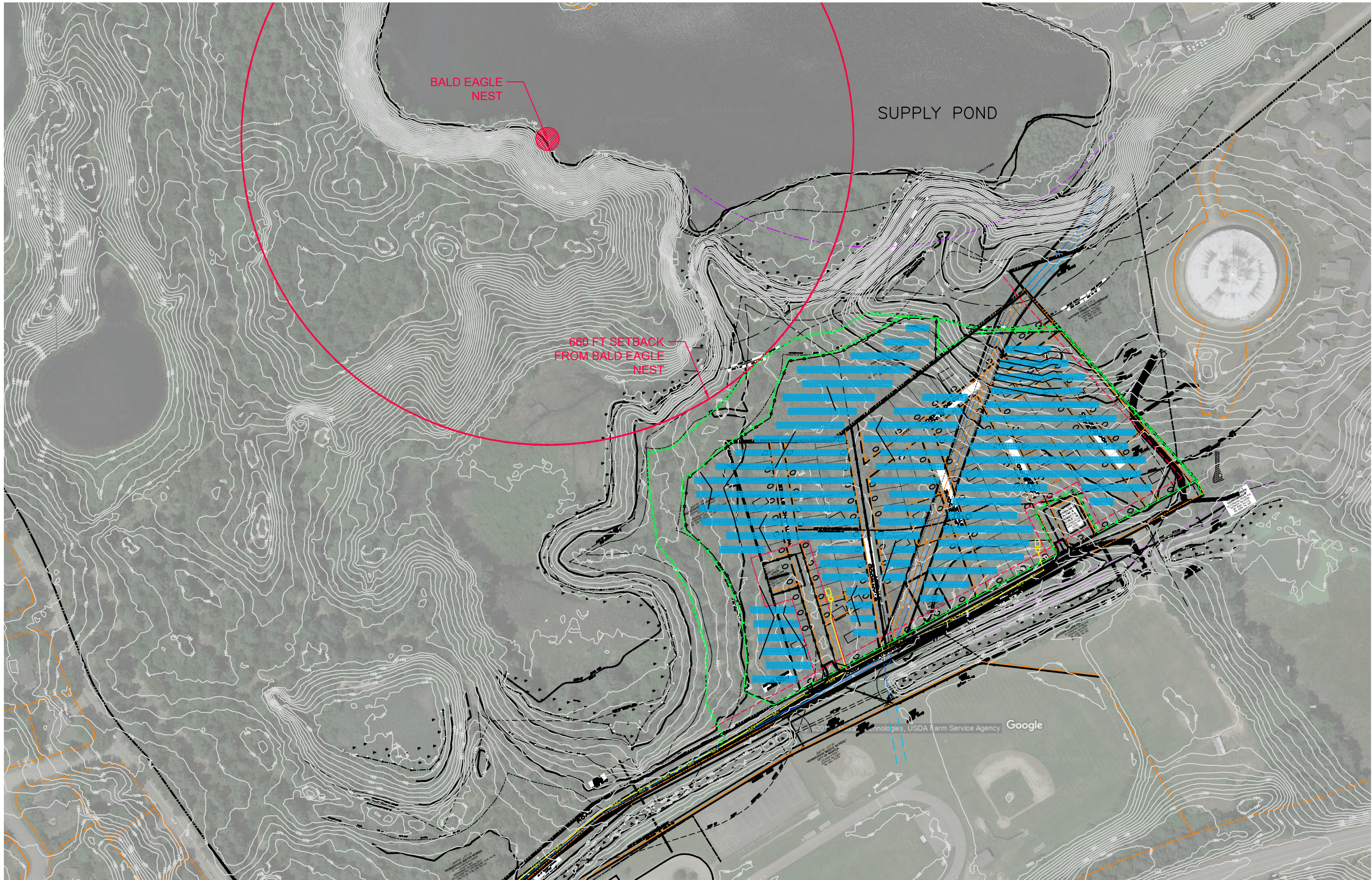
alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have dispersed.

Nesting territory – the area that contains one or more eagle nests within the home range of a mated pair of eagles, regardless of whether such nests were built by the current resident pair.

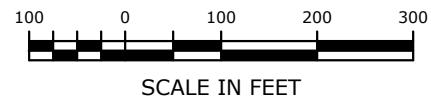
Northeast – Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and the District of Columbia.

Project footprint – the area of land (and water) temporarily or permanently altered by a project.

Tolerate – the acceptance of specific human activities by eagles at the nest site. Demonstrated in the eagles' continued ability to successfully feed, breed, and shelter, and the general absence of stress or agitation in their behavior.



- LEGEND**
- | | | | |
|--|---------------------|--|-----------------------|
| | PROJECT PARCEL | | WETLANDS |
| | ABUTTING PARCEL | | TOWN SETBACK-WETLANDS |
| | TOPOGRAPHIC CONTOUR | | TOWN SETBACK-ZONING |
| | TREELINE | | FENCE 7FT CHAIN LINK |
| | PROPOSED TREELINE | | SOLAR MODULE |
| | BUILDING | | |



PENNYCHUCK WATER SOLAR ARRAY GSSG NEW HAMPSHIRE, LLC		NEW ENGLAND SOLAR GARDEN CORP. 36 MAPLEWOOD AVE. PORTSMOUTH, NEW HAMPSHIRE 03801	
PROPOSED CONDITIONS-SOLAR ARRAY NHB DATACHECK		DATE 12/09/19	
MANCHESTER STREET AND HARRIS ROAD		REV.	
DRAWING C 1.0		DESCRIPTION OF REVISION	
SHEET 1		DATE APR	

Fact Sheet:
Prohibited Invasive Plant Species Rules, Agr 3800

Updated 01/31/2017

This fact sheet is a synopsis of the adopted rules on invasive plant species and is intended for general use by the nursery and landscape industry, plant growers, plant dealers, general public, State Agencies, and Municipalities. A complete copy of the rules can be accessed on the internet at http://agriculture.nh.gov/topics/plants_insects.htm.

In accordance with the Invasive Species Act, HB 1258-FN, the NH Department of Agriculture, Markets & Food, Division of Plant Industry is the lead state agency responsible for the evaluation, publication and development of rules on invasive plant species for the purpose of protecting the health of native species, the environment, commercial agriculture, forest crop production, or human health. The rule, Agr 3800, states “**No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1, New Hampshire prohibited invasive species list**”.

New Hampshire Prohibited Invasive Plant Species List

Scientific name	Synonyms	Common name
<i>Acer platanoides</i> L.	<i>Acer platanoides</i> var. <i>schwedleri</i> Nichols.	Norway maple
<i>Ailanthus altissima</i> (P. Mill.) Swingle	<i>Ailanthus glandulosa</i> Desv.	Tree of heaven
<i>Alliaria petiolata</i> (Bieb.) Cavara & Grande	<i>Alliaria alliaria</i> (L.) Britt.; <i>Alliaria officinalis</i> Andr. ex Bieb.; <i>Erysimum alliaria</i> L.; <i>Sisymbrium alliaria</i> (L.) Scop.	Garlic mustard
<i>Alnus glutinosa</i> (L.) Gaertn.	<i>Alnus alnus</i> (L.) Britt.; <i>Betula alnus</i> L. var. <i>glutinosa</i> L.	European black alder
<i>Berberis thunbergii</i> DC.		Japanese barberry
<i>Berberis vulgaris</i> L.		European barberry
<i>Celastrus orbiculatus</i> Thunb.		Oriental bittersweet
<i>Centaurea stoebe</i> L. ssp. <i>micranthos</i> (Gugler) Hayek	<i>Centaurea biebersteinii</i> DC.; <i>Centaurea maculosa</i> Lam., misapplied; <i>Centaurea maculosa</i> Lam. ssp. <i>micranthos</i> Gugler	Spotted knapweed
<i>Cynanchum louiseae</i> Kartesz & Gandhi	<i>Cynanchum nigrum</i> (L.) Pers.; <i>Vincetoxicum nigrum</i> (L.) Pers.	Black swallow-wort
<i>Cynanchum rossicum</i> (Kleopow) Borhidi	<i>Cynanchum medium</i> , of authors not R. Br.; <i>Vincetoxicum medium</i> , of authors not (R. Br.) Dcne.; <i>Vincetoxicum rossicum</i> (Kleopow) Barbarich	Pale swallow-wort
<i>Elaeagnus umbellata</i> Thunb. var. <i>parvifolia</i> (Royle) Schneid.	<i>Elaeagnus parvifolia</i> Royle	Autumn olive
<i>Euonymus alatus</i> (Thunb.) Sieb.	<i>Celastrus alatus</i> Thunb.	Burning bush
<i>Frangula alnus</i> P. Mill.	<i>Rhamnus frangula</i> L.	Glossy buckthorn
<i>Glyceria maxima</i> (Hartman) Holmb.	<i>Glyceria spectabilis</i> Mert. & Koch; <i>Molinia maxima</i> Hartman	Reed sweet grass
<i>Heracleum mantegazzianum</i> Sommier & Levier		Giant hogweed
<i>Hesperis matronalis</i>		Dames rocket

<i>Impatiens glandulifera</i> Royle	<i>Impatiens roylei</i> Walp.	Ornamental jewelweed
<i>Iris pseudacorus</i> L.		Water-flag
<i>Lepidium latifolium</i> L.	<i>Cardaria latifolia</i> (L.) Spach	Perennial pepperweed
<i>Ligustrum obtusifolium</i> Sieb. & Zucc. var. <i>obtusifolium</i>	<i>Ligustrum obtusifolium</i> var. <i>leiocalyx</i> (Nakai) H. Hara	Blunt-leaved privet
<i>Ligustrum vulgare</i> L.		Common privet
<i>Lonicera japonica</i> Thunb.	<i>Nintooa japonica</i> (Thunb.) Sweet	Japanese honeysuckle
<i>Lonicera maackii</i> (Rupr.) Herder*		Amur honeysuckle*
<i>Lonicera morrowii</i> Gray*		Morrow's honeysuckle*
<i>Lonicera tatarica</i> L.*		Tartarian honeysuckle*
<i>Lonicera</i> × <i>bella</i> Zabel*	<i>Lonicera morrowii</i> × <i>L. tatarica</i>	Bella honeysuckle*
<i>Lysimachia nummularia</i> L.		Moneywort
<i>Microstegium vimineum</i> (Trin.) A. Camus	<i>Andropogon vimineum</i> Trin.; <i>Eulalia viminea</i> (Trin.) Kuntze	Japanese stilt grass
<i>Persicaria perfoliata</i> (L.) H. Gross	<i>Ampelgynon perfoliatum</i> (L.) Roberty & Vautier; <i>Polygonum perfoliatum</i> L.	Mile-a-minute weed
<i>Pueraria montana</i> (Lour.) Merr. var. <i>lobata</i> (Willd.) Maesen & S. Almeida	<i>Dolichos lobatus</i> Willd.; <i>Pueraria lobata</i> (Willd.) Ohwi; <i>Pueraria thunbergiana</i> (Sieb. & Zucc.) Benth.	Kudzu
<i>Reynoutria japonica</i> Houtt. var. <i>Japonica</i>	<i>Fallopia japonica</i> (Houtt.) R. Decr.; <i>Pleuropterus cuspidatus</i> (Sieb. & Zucc.) Moldenke; <i>Polygonum cuspidatum</i> Sieb. & Zucc.	Japanese knotweed
<i>Reynoutria sachalinensis</i> (F. Schmidt ex Maxim.) Nakai	<i>Fallopia sachalinensis</i> (F.S. Petrop. ex Maxim.) R. Decr.; <i>Polygonum sachalinense</i> F. Schmidt ex Maxim.	Giant knotweed
<i>Reynoutria</i> × <i>bohemica</i> Chrtek & Chrtková	<i>Fallopia japonica</i> × <i>F. sachalinensis</i> ; <i>Fallopia</i> × <i>bohemica</i> (Chrtek & Chrtková) J.P. Bailey; <i>Polygonum</i> × <i>bohemicum</i> (Chrtek & Chrtková) P.F. Zika & A.L. Jacobson	Bohemia knotweed
<i>Rhamnus cathartica</i> L.		Common buckthorn
<i>Rosa multiflora</i> Thunb. ex Murr.		Multiflora rose

Variance: Persons conducting temporary scientific studies, which may include hybridization of seedless species may apply for a variance to do so by contacting the NH Department of Agriculture, Markets & Food, Division of Plant Industry.

For additional Information



Douglas Cygan, Invasive Species Coordinator
New Hampshire Department of Agriculture
Division of Plant Industry
State Lab Building, Lab D
29 Hazen Drive
Concord, NH 03301
(603) 271-3488

douglas.cygan@agr.nh.gov

<http://www.agriculture.nh.gov/divisions/plant-industry/invasive-plants.htm>

Appendix X: Historic and Cultural Properties

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

DHR Use Only

R&C # _____

Log In Date ____ / ____ / ____

Response Date ____ / ____ / ____

Sent Date ____ / ____ / ____

Request for Project Review by the New Hampshire Division of Historical Resources

☒ This is a new submittal

☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Pennichuck Water Solar

Project Location 200 Concord St. Nashua, NH 03064

City/Town Nashua Tax Map 52 Lot # blocks 1, 5, 7, 14, 23, 24, 28, 39, 49, 61, 65, 81, 82, 85, 88, 96, 97, and 104

NH State Plane - Feet Geographic Coordinates: Easting 1035613 Northing 105261
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) EPA - construction general permit
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference #

State Agency and Contact (if applicable) NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name Michael Redding - New England Solar Garden Corporation

Mailing Address 36 Maplewood Ave. Phone Number 603-494-6801

City Portsmouth State CA Zip 03801 Email michael@nesolargarden.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Lillian Fenner

Mailing Address 36 Maplewood Ave. Phone Number 720-334-9153

City Portsmouth State NH Zip 03801 Email lillian@nesolargarden.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 10/14/2019.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

- ☐ **Insufficient information to initiate review.** ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: _____ Date: _____



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

January 15, 2020

New Hampshire Division of Historical Resources
State Historic Preservation Office
19 Pillsbury Street
Concord, New Hampshire 03301

Attn: Review & Compliance

RE: Request for Project Review
200 Concord Street
Nashua, NH 03064

To Whom it May Concern:

Enclosed is a request for review of a solar array project at 200 Concord Street, Nashua, New Hampshire. The letter serves as a supplement to the Request for Project Review (RPR) form.

PROJECT DESCRIPTION

The proposed solar array will be located on blocks 1, 5, 7, 14, 23, 24, 28, 39, 49, 61, 65, 81, 82, 85, 88, 96, 97, and 104 of map 52, owned by Pennichuck Corporation (Penn Corp). Site location can be seen in Figure 1 attached. Together, the parcels equate to around 8 acres. The extents of the proposed solar array can be seen in Figure 2 attached. The project's area of potential effects consist of permanent and temporary impacts to the ground surface in the case of tree clearing, grading, and staging areas. The mentioned parcels contain wooded, undeveloped land south of Supply Pond and Harris Pond, west of the Merrimack River and Concord Street, north of NH-Route 3/Henri A Burque Highway and Pennichuck Middle School athletic fields, and east of Manchester Street. Project Summary and Development Details prepared by NESG can be seen as an attachment.

ARCHITECTURE

A review of previously surveyed or listed properties was conducted via EMMIT from the Department of Historical Resources on October 14, 2019. No previously surveyed or listed properties were identified in the immediate project area. The proposed project area falls within a Historic District, in which are individual properties that were less than 10 acres and are situated across a pond known as Supply Pond. According to the NHDHR EMMIT online resource, all of these properties are historically associated with the water treatment plant, with whom the proposed solar array project is also associated. Within a 1 mile buffer from the proposed project site is a property greater than 10 acres along the north of Supply Pond.



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

There will be no impact to any pre-existing building as the project scope outlines a solar panel array that is freestanding and separate from any dwelling.

ARCHAEOLOGY

The project parcels are zoned as being in the R-18 "B Suburban Residence" district and within the "Water Supply Protection District." Land features consist of a wooded blocks or lots. Past and current land use can be classified as forested wetland buffer. Proposed ground breaking activity consists of driving small diameter posts 4 to 6 feet into the ground for supporting the solar array, tree clearing, grading and staging areas. There are no known or suspected archaeological resources within the project area.

PHOTOGRAPH SUBMITTAL

Site photographs show the current site landscape and land uses. Photographs were taken by New England Solar Garden on November 26, 2019 and are attached in this RPR.

If you have any questions, please do not hesitate to contact us at (603) 494-6801.

Sincerely,

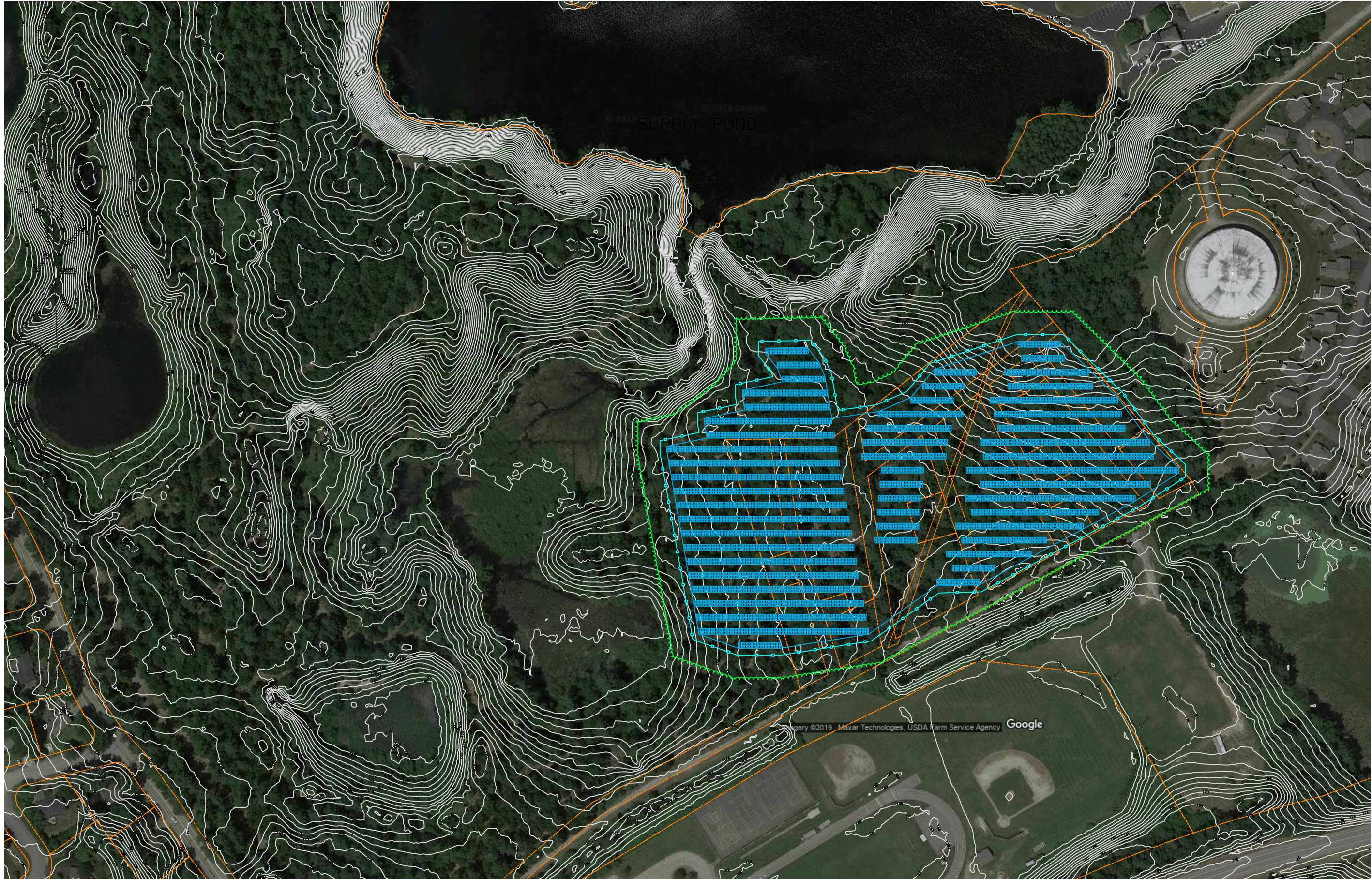
NEW ENGLAND SOLAR GARDEN CORP.

A handwritten signature in black ink, appearing to read 'M. J. Redding', is written over a faint, light gray rectangular background.

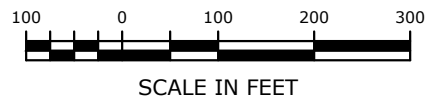
Michael J. Redding, P.E., C.P.E.S.C.
Director of Engineering and Operations

Attachments:

EMMIT Historic and Project Areas Table
EMMIT Historical Properties Table
EMMIT Project Site and Historical Properties Map
NESG Photo Log Locator Map
NHDHR RPR Photo Log Form
NESG Site Photos
NESG Project Summary and Development Details



- | | |
|---------------------|-----------------------|
| PROJECT PARCEL | TOWN SETBACK-WETLANDS |
| ABUTTING PARCEL | TOWN SETBACK-ZONING |
| TOPOGRAPHIC CONTOUR | FENCE 7FT CHAIN LINK |
| TREELINE | SOLAR MODULE |
| PROPOSED TREELINE | |
| BUILDING | |



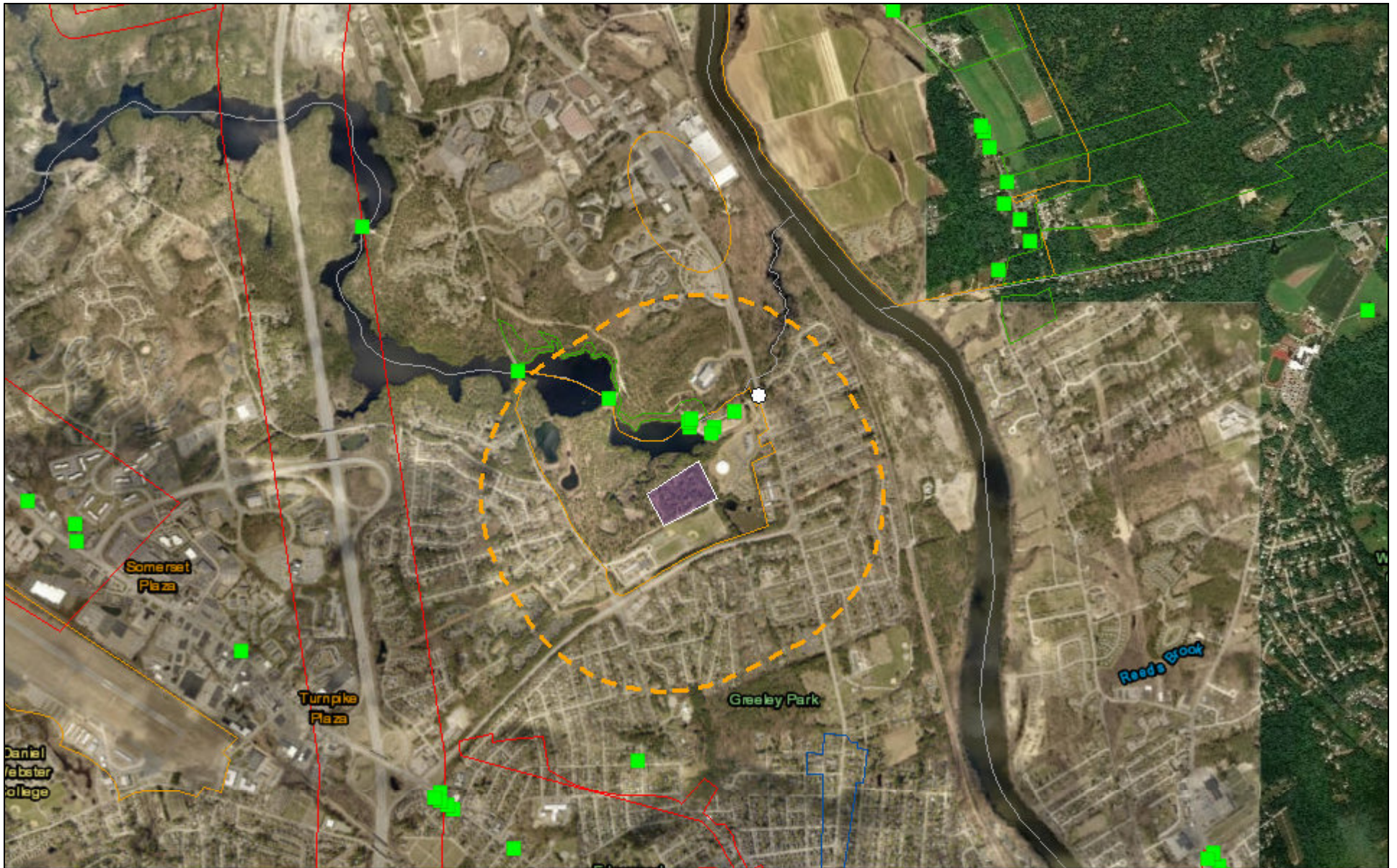
PENNYLUCK WATER SOLAR ARRAY GSSG NEW HAMPSHIRE, LLC		NEW ENGLAND SOLAR GARDEN CORP. 36 MAPLEWOOD AVE. PORTSMOUTH, NEW HAMPSHIRE 03801	
DRAWING C 1.0		PROPOSED CONDITIONS-SOLAR ARRAY NHB DATA CHECK MANCHESTER STREET AND HARRIS ROAD	
SHEET 1		NO. OF SHEETS 1	
		DATE 12/09/19	
		REV.	
		DESCRIPTION OF REVISION	
		APPROVED	

EMMIT Historic and Project Areas Table

	Area ID Code	Area Name	Eligibility	DOE Date	Form Type	Towns
39	NAS-B115	Nashua, Pennichuck Water Works	NR Eligible	7/9/2003	Historic District Area Form	Nashua

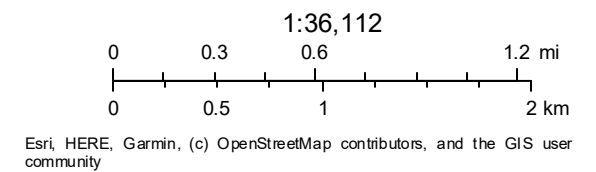
EMMIT Historical Properties Table

	Inventory #	Property Name	Address	Town	SR Listing Date	NR Listing Date	DOE Date Reviewed	Eligibilities	HABS Year	HAER Year	NH Property Doc Year	Doc Id
7710	MER0017	Harris Pond Intake Structure	Harris Pond, 208 Supply Road	Merrimack			11/23/2005	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8257	NAS1151	Engineer's Residence	206 Concord Street	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8258	NAS1152	Treatment Plant	206 Concord Street	Nashua			12/16/1992	Not eligible for NR				
8259	NAS1153	Snow Pumping Station	200 Concord Street	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8260	NAS1154	Pumping Station No.1 (Worthington Pumping Station)	206 Concord Street	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8261	NAS1155	Supply Pond Dam	206 Concord Street	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8262	NAS1156	Dean and Main Pumping Station	206 Concord Street	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				
8263	NAS1157	Harris Pond Dam	Harris Pond	Nashua			12/16/1992	Contributes to a National Register/eligible dist; Not evaluated for individual eligibility				

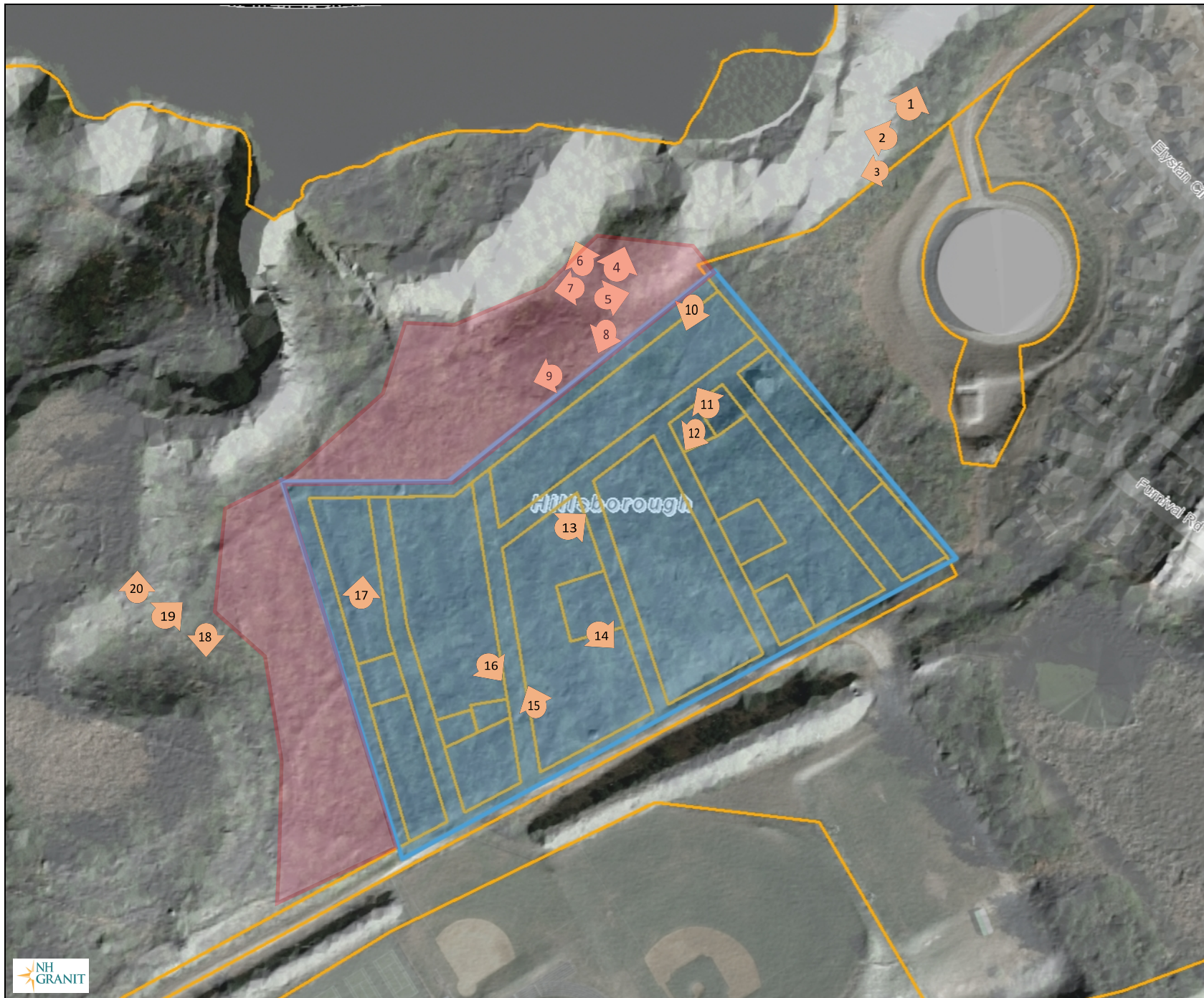


October 14, 2019

- | | | |
|--|---|---|
| ■ Individual Properties < 10 acres | Historic Districts | Towns |
| Individual Properties > 10 acres | Project Areas | |
| National Register Districts | Counties | |



Map for RPR by DHR for Nashua Pennichuck Water Solar



Legend

- Parcels
- State
- County
- City/Town
- ▭ Project boundary
- ▭ Possible project extension
- LiDAR-Based Bare Earth Hillshade
- High : 1906
- Low : -1

Map Scale

1: 2,533

© NH GRANIT, www.granit.unh.edu

Map Generated: 1/13/2020



Notes

Project: Nashua Pennichuck Water Solar
Location: 200 Concord St. Nashua, NH 03064

City/Town Nashua Tax Map 52, Lot # blocks 1, 5, 7, 14, 23, 24, 28, 39, 49, 61, 65, 81, 82, 85, 88, 96, 97, and 104



NH DOT Name and Number and/or Project Title: Pennichuck Water Solar in Nashua, NH		DHR R&C #:
RPR Form RPR PHOTO LOG		
Photo #	NH DHR Inventory # and/or locational information; Include a brief description of the photograph if necessary.	
1	Looking NNE up assess road. Supply Pond down slope to the left in photo.	
2	Slope along assess road above Supply Pond.	
3	Slope along assess road above Supply Pond	
4	Clearing north of area of potential solar array. Edge of ridge above Supply Pond.	
5	Looking back into woods at area of potential solar array.	
6	Slope down into Supply Pond.	
7	Slope to Supply Pond, north of area of potential solar array.	
8	Granite bound found by surveyor. North boundary of potential solar array.	
9	Woods at edge of potential solar array.	
10	Looking from the NE corner into area of potential solar array. Existing water easement.	
11	Woods looking NW. Area of potential solar array.	
12	Woods and existing water easement. Area of potential solar array.	
13	Area of potential solar array.	
14	Area of potential solar array.	
15	Area of potential solar array. Looking towards northern boundary.	
16	Area of potential solar array. Looking towards southern boundary.	
17	Area of potential solar array.	
18	Perched upland adjacent to wetlands to the West of proposed project. Outside of project boundaries.	
19	Looking towards NE corner of proposed project from perched upland. Outside of project boundaries.	
20	Perched upland adjacent to wetlands to the West of proposed project. Outside of project boundaries.	
	**Add rows as necessary.	
	<i>Informative photo captions can be used in place of a photo log.</i>	

RPR PHOTO LOG for Pennichuck Water Solar in Nashua, NH

Photo 1: Looking NNE up access road. Supply Pond down slope to the left in photo.



Photo 2: Slope along assess road above Supply Pond.



Photo 3: Slope along assess road above Supply Pond.



Photo 4: Clearing north of area of potential solar array. Edge of ridge above Supply Pond.



Photo 5: Looking back into woods at area of potential solar array.



Photo 6: Slope down into Supply Pond.



Photo 7: Slope to Supply Pond, north of area of potential solar array.

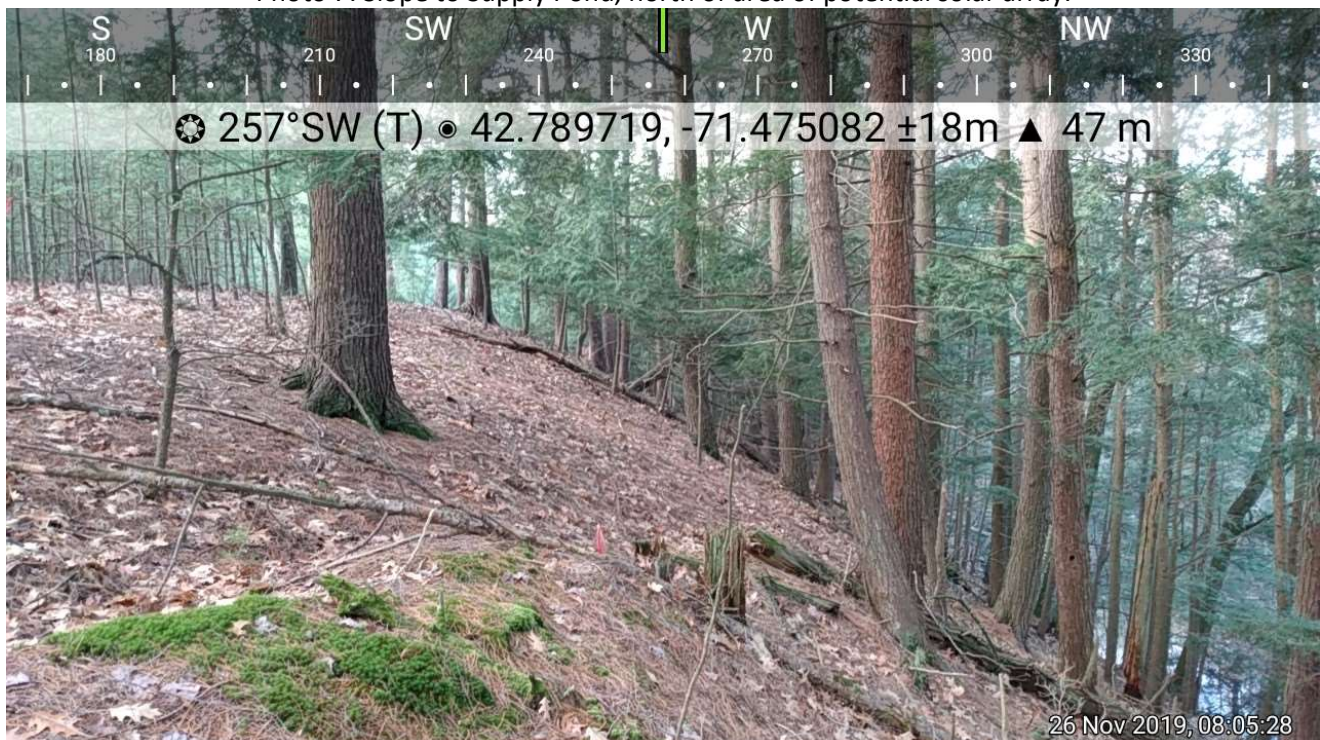


Photo 8. Granite bound found by surveyor. North boundary of potential solar array.



Photo 9: Woods at edge of potential solar array.

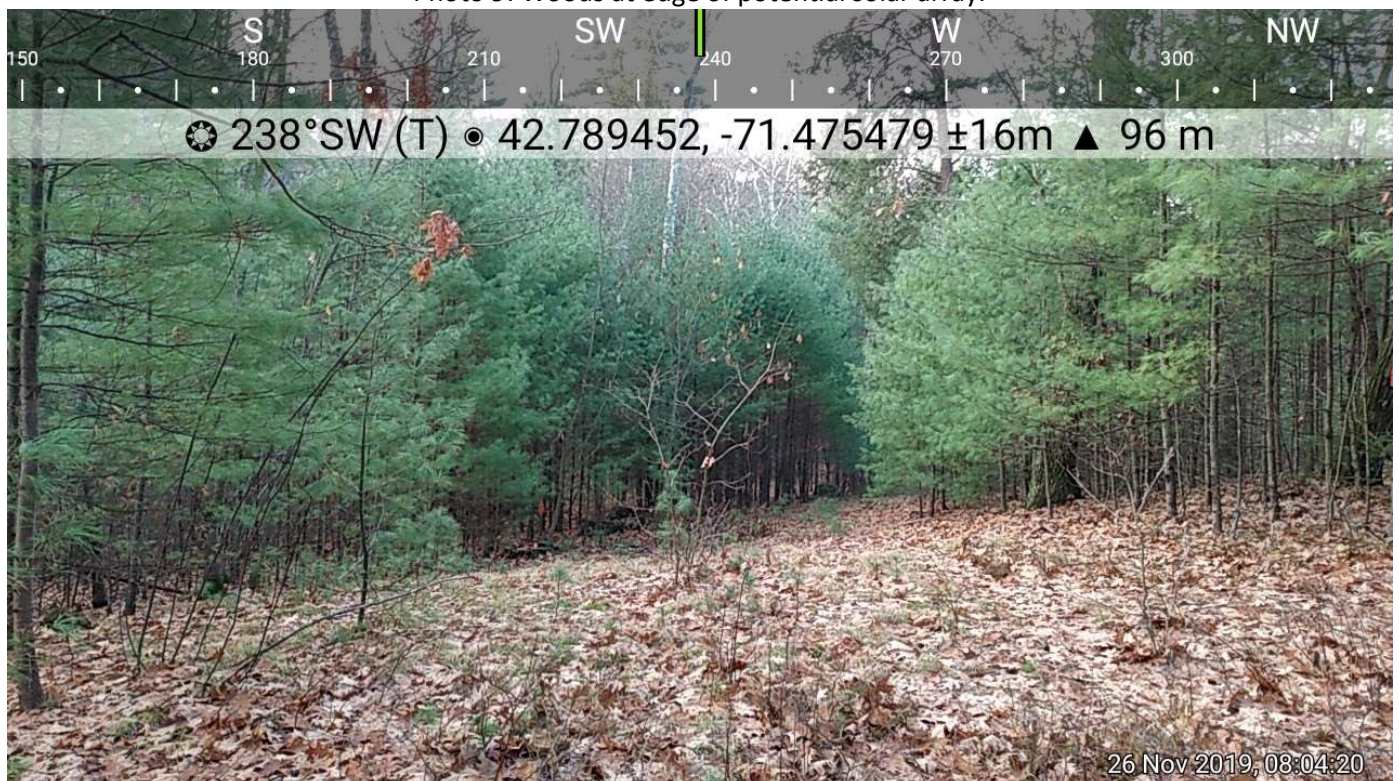


Photo 10: Looking from the NE corner into area of potential solar array. Existing water easement.



Photo 11: Woods looking NW. Area of potential solar array.



Photo 12: Woods and existing water easement. Area of potential solar array.



Photo 13: Area of potential solar array.



Photo 14: Area of potential solar array.



Photo 15: Area of potential solar array. Looking towards northern boundary.



Photo 16: Area of potential solar array. Looking towards southern boundary.



Photo 17: Area of potential solar array.



Photo 18: Perched upland adjacent to wetlands to the West of proposed project. Outside of project boundaries.

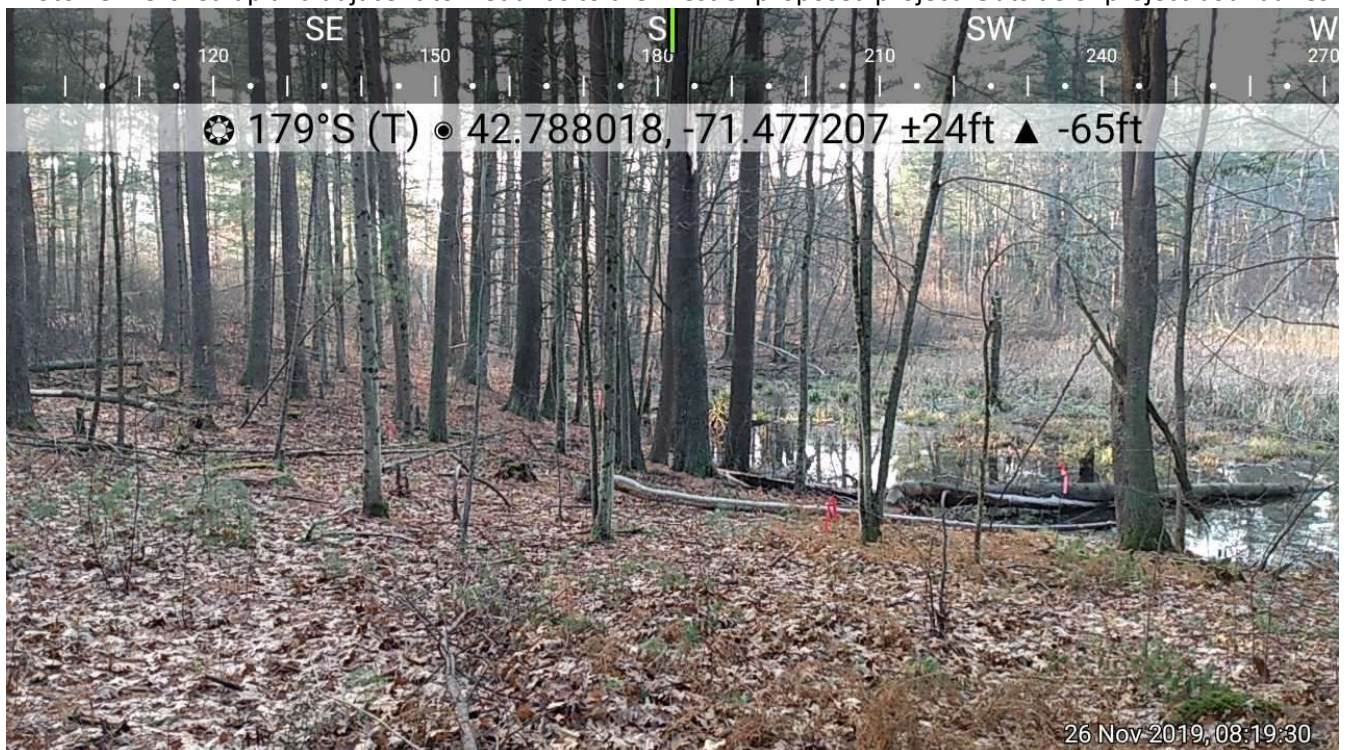
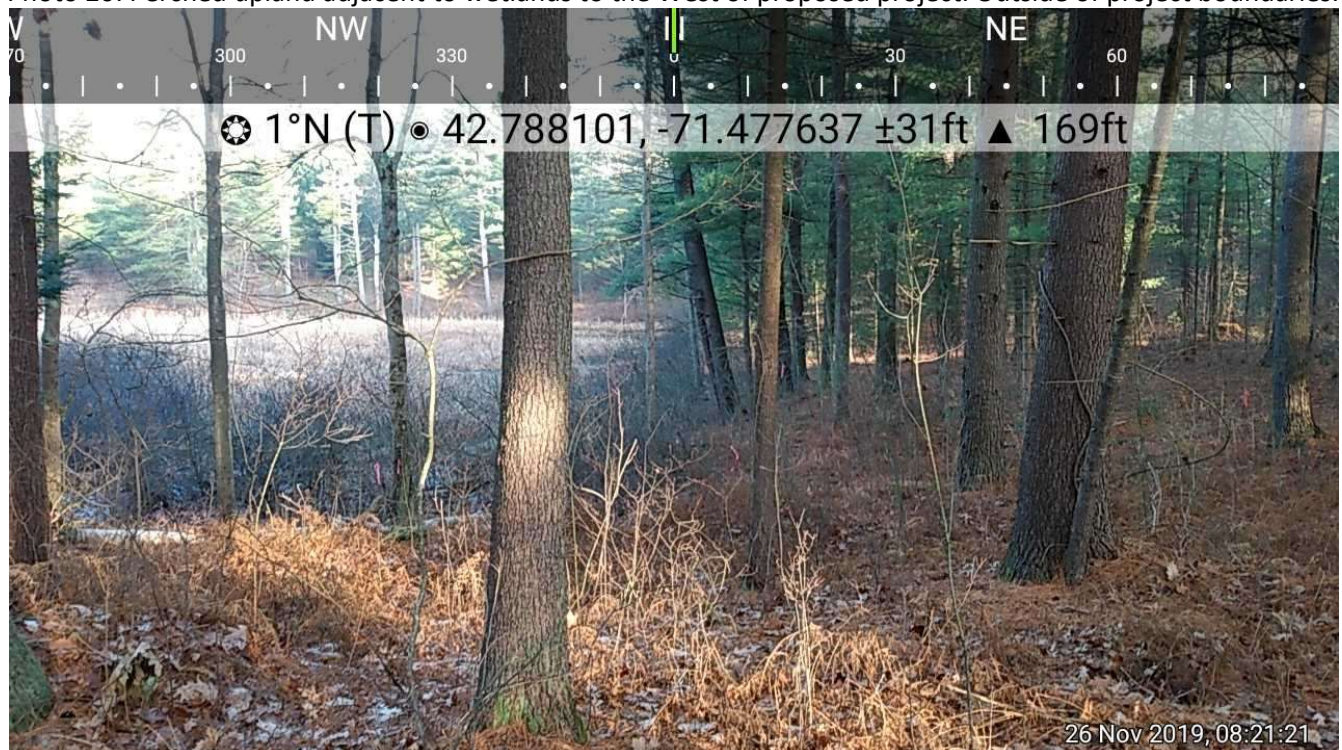



Photo 19: Looking towards NE corner of proposed project from perched upland. Outside of project boundaries.



Photo 20: Perched upland adjacent to wetlands to the West of proposed project. Outside of project boundaries.



PROJECT SUMMARY & DEVELOPMENT DETAILS

Primary	Details
Nashua_Pennichuck Water Solar	
Project Address	200 Concord St, Nashua, NH 03064
Coordinates	42.788308° -71.475430°
Property Owner and Mailing Address	Pennichuck Corporation (Penn Corp)
Parcel Size (Acreage)	~10 acres
Array Size (AC - DC)	1.7 MW/Ac or 2.4 MW/Dc
Distance to 3 phase & location	at the property
Utility Company	Eversource
Circuit Details	34.5 kV – 3020X Line. 1.613 MVA on, 0.076 MVA pending
Lease Rate & Status	\$10,000 per year, per MW/AC, paid at start of construction, equal to \$16,000 a year based on array estimate in MWs. Lease rate increases 25% at year 25 and 5% at each 5 year extension period thereafter
Opinion of Title	TBD pending report received
Off-Taker Type	Community Solar
Estimated PILOT Rate	PILOT tax payment, which is the responsibility of NESG, will cover the tax impact of the solar equipment on the parcel. Any State utility tax on the equipment will also be the responsibility of NESG. The underlying property tax on the property will continue to be the responsibility of the Landowner.
Pre-NTP Risks	<p>WETLANDS - Some minor wetlands are identified from the desktop review</p> <p>ZONING - commercial/industrial</p> <p>ABUTTERS - none of concern</p> <p>HABITAT - TBD based on State review</p> <p>ARCHAEOLOGICAL - TBD based on State review</p>
Post-NTP Risks	<p>SITE WORK - easy access to site and mostly flat near school</p> <p>CONSTRUCTION LIMITATIONS - none at this time</p>
Estimated Layout	

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED
JAN 22 2020

DHR Use Only	
R&C #	11451
Log In Date	1 / 22 / 20
Response Date	2 / 4 / 20
Sent Date	2 / 5 / 20

Request for Project Review by the New Hampshire Division of Historical Resources

- ☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Pennichuck Water Solar

Project Location 200 Concord St. Nashua, NH 03064

City/Town Nashua Tax Map 52 Lot # blocks 1, 5, 7, 14, 23, 24, 28, 39, 49, 61, 65, 81, 82, 85, 88, 96, 97, and 104

NH State Plane - Feet Geographic Coordinates: Easting 1035613 Northing 105261 ✓
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) EPA - construction general permit
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference #

State Agency and Contact (if applicable) NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name Michael Redding - New England Solar Garden Corporation

Mailing Address 36 Maplewood Ave. Phone Number 603-494-6801

City Portsmouth State CA Zip 03801 Email michael@nesolargarden.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Lillian Fenner

Mailing Address 36 Maplewood Ave. Phone Number 720-334-9153

City Portsmouth State NH Zip 03801 Email lillian@nesolargarden.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dncr.nh.gov or 603.271.3558.

Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 10/14/2019.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

- ☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☒ No Adverse Effect ☐ Adverse Effect

Comments:

In purpous of EPA permitting only.

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: *Neelie Muller, DSHR*

Date: *2/4/2020*



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

April 22, 2021

New Hampshire Division of Historical Resources
State Historic Preservation Office
19 Pillsbury Street
Concord, New Hampshire 03301

Attn: Review & Compliance

RE: Request for Project Review, R&C # 11451
Pennichuck Water Solar
200 Old Harris Road
Nashua, NH 03064

To Whom it May Concern:

Enclosed is a request for review of a solar array project at 200 Old Harris Road, Nashua, New Hampshire. The letter serves as a supplement to the Request for Project Review (RPR) form.

PROJECT DESCRIPTION

The proposed solar array will be located on Map 52, blocks 65 and 118, owned by Pennichuck Corporation (Penn Corp) and contain wooded, undeveloped land south of Supply Pond and Harris Pond, west of the Merrimack River and Concord Street, north of NH-Route 3/Henri A Burque Highway and Pennichuck Middle School athletic fields, and east of Manchester Street. Site location can be seen in Figure 1 attached.

The project will occupy approximately 16 acres. The extents of the proposed solar array can be seen in Figure 4 and 5 attached. The project's area of potential effects consists of permanent and temporary impacts to the ground surface in the case of tree clearing, grading, staging areas, and the permanent installation of posts to support the solar panels.

The project will be reviewed by Rural Utilities Service, Rural Development of the United States Department of Agriculture for RUS funding.

ARCHITECTURE

Due to the topography sloping away and toward the south, views of the solar array panels will be obstructed by the ridgeline between the historic structures at the Pennichuck Water treatment facility and the solar project. A review of previously surveyed or listed properties was conducted via EMMIT from the Department of Historical Resources on October 14, 2019 and again on April 19, 2021. No previously surveyed or listed properties were identified in the immediate project area. The proposed project area falls within the "Nashua, Pennichuck Water



Works" Historic District (Area Code ID NAS-B115). Across from Supply Pond, six structures were built during the mid to late 1800s for the Pennichuck Water Works operation and contribute to the National Register. These buildings are at elevations between 140 and 155 feet and the closest building, NAS1153 Snow Pumping Station, is approximately 720 ft to the northeast of the closest solar panel. Distances are marked on Figure 4. A long forested ridge to the south of these buildings lies between the buildings and the solar project at an elevation of 192 feet. The closest solar panels to these buildings are being installed at an elevation of around 190 feet on the far side of the ridge from the buildings. Figure 5 shows detailed topography of the project while Figure 4 shows topography of the greater area surrounding the project and the historic buildings. Additionally, pictures are attached at the end of this letter which were taken near and within the project site showing the forested ridge and view from the northern edge of the project.

Within a ½ mile buffer from the proposed project site, on the northern bank of Supply Pond, is an area called Harris Pond Intake Structure (Inventory # MER0017). This area is outlined in green, as well as the six historic structures, which are labeled on the April 19, 2021 EMMIT map in Figure 2.

There will be no direct impact to any pre-existing building as the solar panel array and associated equipment are freestanding and separate from any existing structure or dwelling.

ARCHAEOLOGY

The project parcels are zoned as being in the R-18 "B Suburban Residence" district and within the "Water Supply Protection District." Land features consist of a wooded blocks or lots. Past and current land use can be classified as forested wetland buffer with occasional timber harvesting from Penn Corp. Proposed groundbreaking activity consists of driving small diameter posts 4 to 6 feet into the ground for supporting the solar array, tree clearing, grading and staging areas. There are no known or suspected archaeological resources within the project area.

PHOTOGRAPH SUBMITTAL

Site photographs show the past and current site landscape and land uses. Photographs were taken by New England Solar Garden on November 26, 2019 and again on April 6, 2021 and are attached in this RPR.

If you have any questions, please do not hesitate to contact us at 720-334-9153.

Sincerely,

NEW ENGLAND SOLAR GARDEN CORP.

Lillian Fenner | Project Manager



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

Attachments:

DHR RPR Form

Figure 1: Project Location Map

Figure 2: EMMIT Project Site and Historical Properties Map. Scale 1:18,056 with ½ mile buffer

Figure 3: EMMIT Project Site and Historical Properties Map. Scale 1:4,514 with structure names

Figure 4: Photo Log Locator Map with Topography

Figure 5: HSI Engineering Layout with Topography

EMMIT Historic and Project Areas Table

EMMIT Historical Properties Table

DHR Photo Log

April 6, 2021 Site Photos

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

DHR Use Only

R&C # _____

Log In Date ____ / ____ / ____

Response Date ____ / ____ / ____

Sent Date ____ / ____ / ____

Request for Project Review by the New Hampshire Division of Historical Resources

☐ This is a new submittal

☒ This is additional information relating to DHR Review & Compliance (R&C) #: 11451

GENERAL PROJECT INFORMATION

Project Title Pennichuck Water Solar

Project Location Old Harris Road, Nashua, NH 03064

City/Town Nashua Tax Map 52 Lot # blocks 65 and 118

NH State Plane - Feet Geographic Coordinates: Easting 1035613 Northing 105261
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) USDA, EPA - construction general permit
(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference # Rural Utilities Serv

State Agency and Contact (if applicable) NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name Pennichuck Water Works, Inc. Don Ware, P.E.

Mailing Address 25 Manchester Street Phone Number 603-882-5191

City Merrimack State NH Zip 03060 Email donald.ware@pennichuck.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Lillian Fenner

Mailing Address 1023 San Luis Circle, Unit 620 Phone Number 720-334-9153

City Daly City State CA Zip 94014 Email lillian@nesolargarden.co

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION **11451**

Project Boundaries and Description

Nashua

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 4/19/2021.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

- ☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☒ No Adverse Effect ☐ Adverse Effect

Comments:

Thank you for providing additional information as part of a visual assessment for the project per USDA.

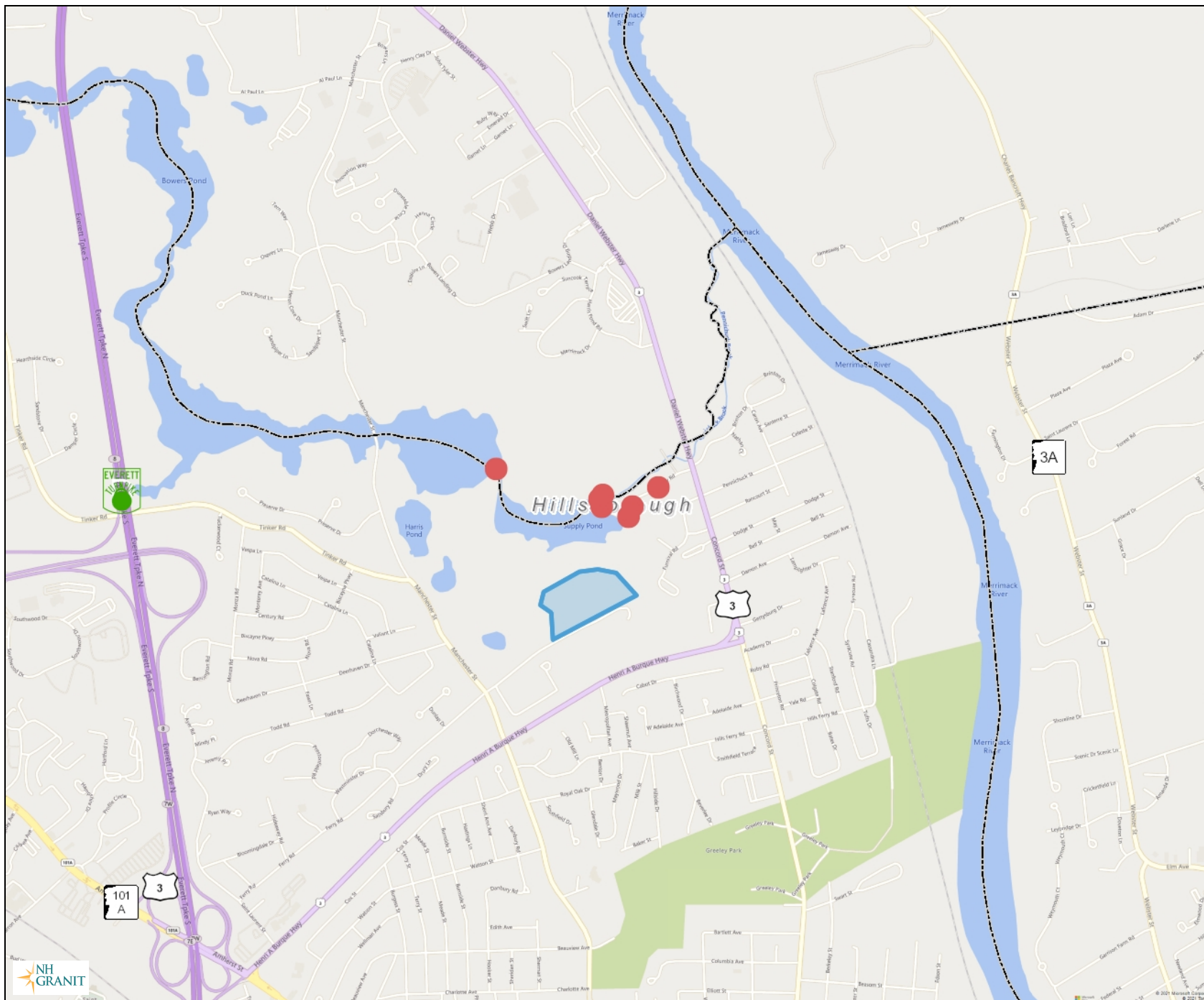
If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: *Nadine Muller, DSHR* Date: *4/26/21*

Figure 1: Project Location. Nashua Pennichuck Water Solar DHR R&C #11451

Legend

- State
- County
- City/Town



Map Scale

1: 19,618

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/21/2021



Notes

BLUE outline = Solar project
RED dots = National Register structures



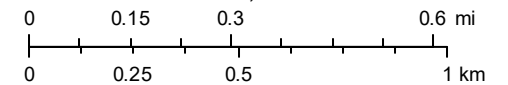
Figure 2: Nashua Pennichuck Water Solar



April 19, 2021

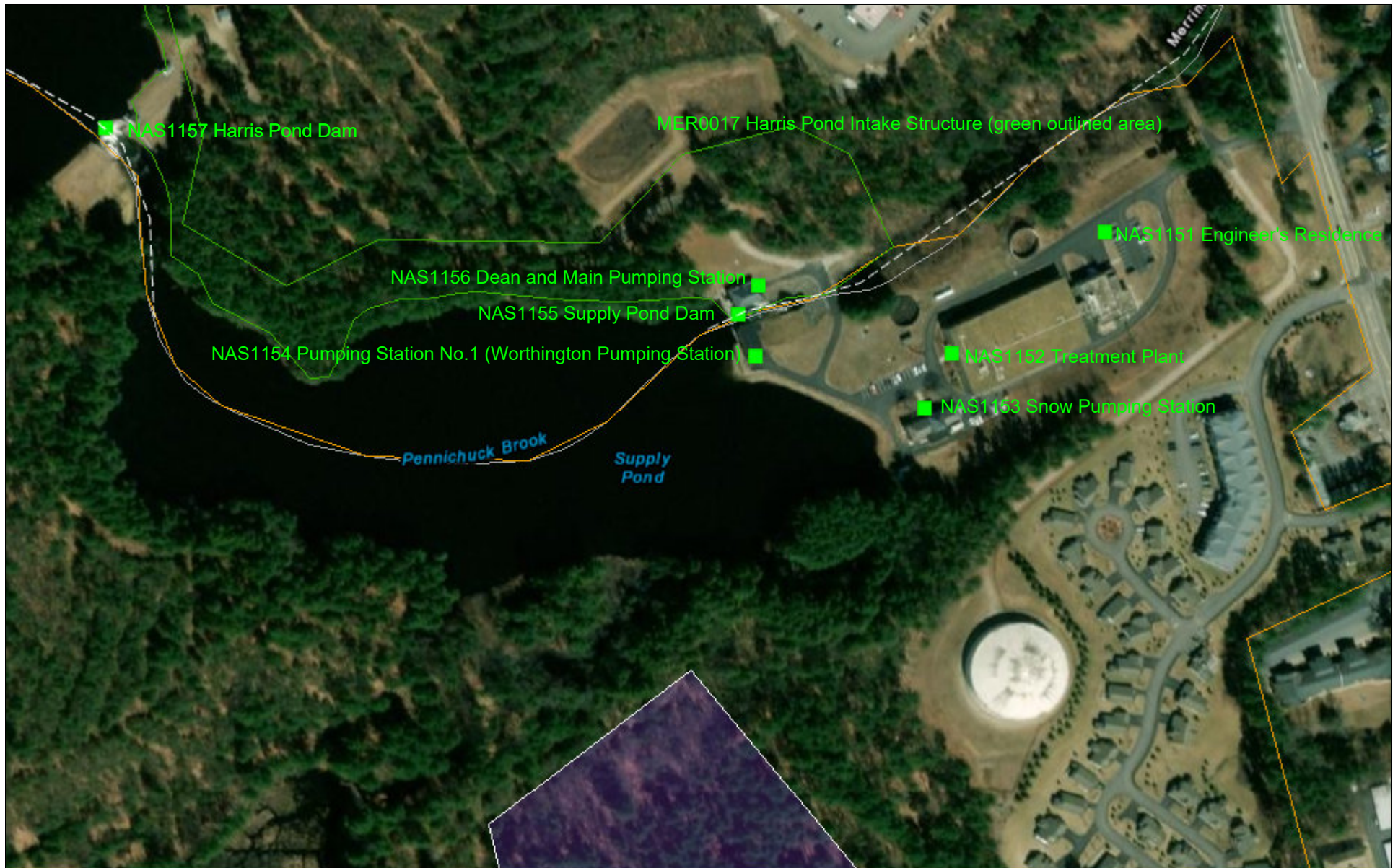
- | | |
|---|--|
| ■ Individual Properties < 10 acres | Project Areas |
| Individual Properties > 10 acres | Counties |
| Historic Districts | Towns |

1:18,056



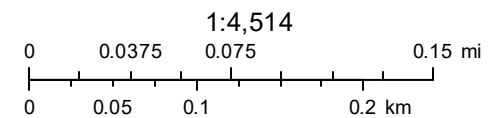
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 3: Nashua Pennichuck Water Solar



April 19, 2021

- Individual Properties < 10 acres
- Individual Properties > 10 acres
- Historic Districts
- Counties
- Towns



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 4: Nashua Pennichuck Water Solar DHR R&C #11451



Legend

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 Contour_2ft_0108010603_s
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 Contour_2ft_0108010607_s

Map Scale

1: 4,905

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/21/2021



Notes

BLUE outline = Solar project
 RED dots = National Register structures
 Location of photo indicated by square,
 direction by arrow.
 Distance from solar panels to closest NR
 properties marked in pink.



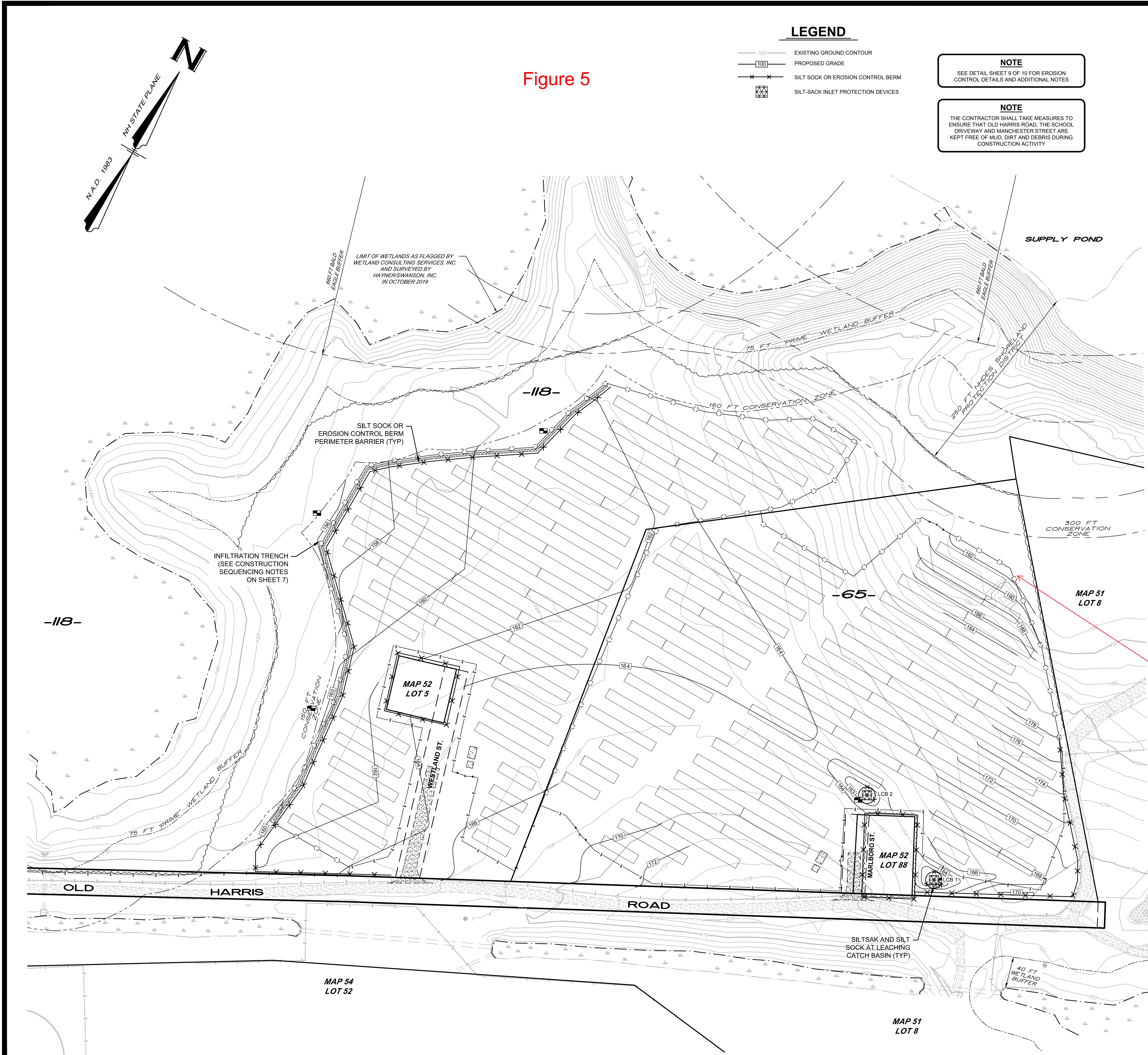


Figure 5

LEGEND

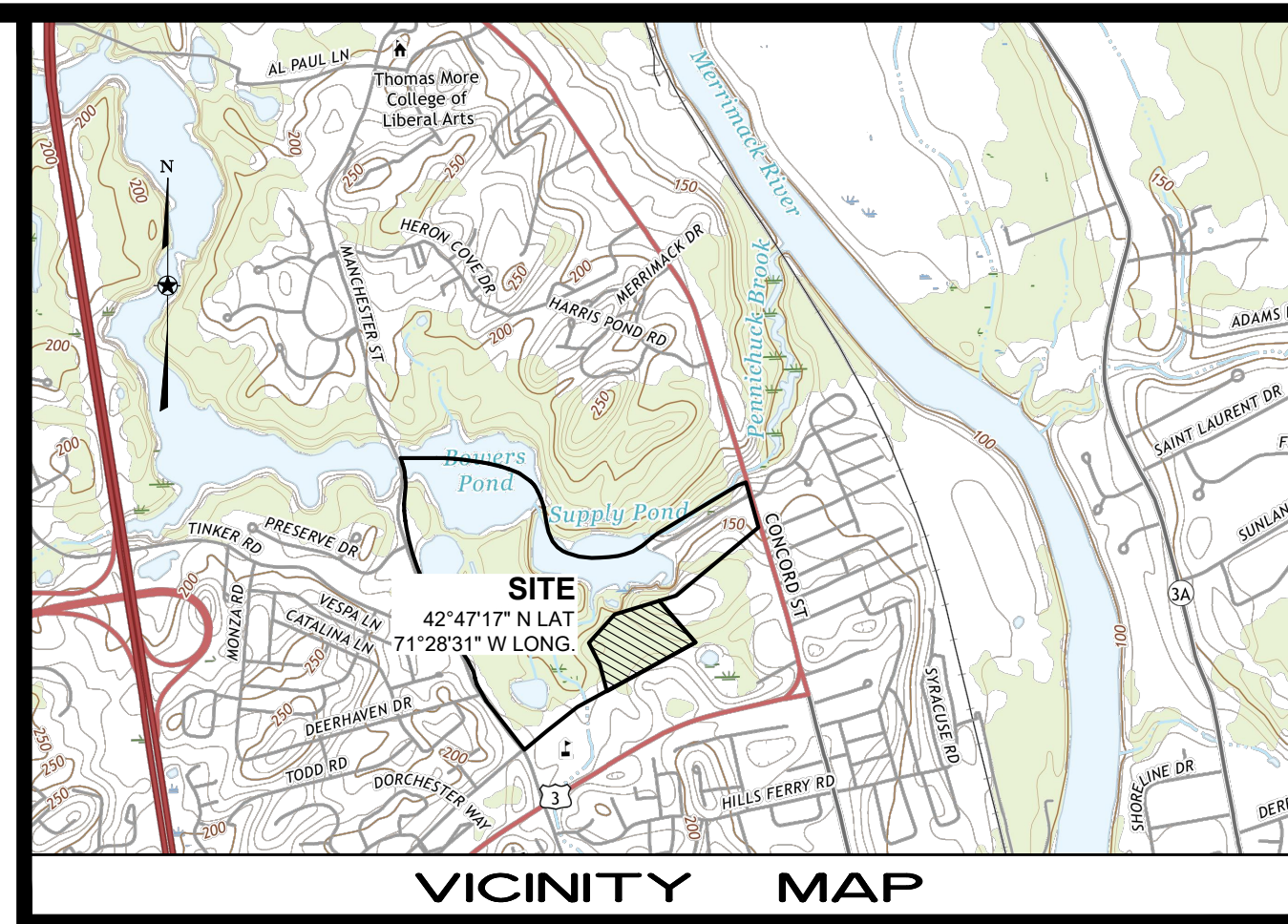
- 100 EXISTING GROUND CONTOUR
- 100 PROPOSED GRADE
- X X SILT SOCK OR EROSION CONTROL BERM
- SILT-SACK INLET PROTECTION DEVICES

NOTE

SEE DETAIL SHEET 3 OF 10 FOR EROSION CONTROL DETAILS AND ADDITIONAL NOTES

NOTE

THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT OLD HARRIS ROAD, THE SCHOOL DRIVEWAY AND MANCHESTER STREET ARE KEPT FREE OF MUD, DIRT AND DEBRIS DURING CONSTRUCTION ACTIVITY



GENERAL NOTES: (PHASE II)

- ALL MEASURES STATED ON THIS EROSION CONTROL PLAN, AND IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETE PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT.
- SILT SOCKS OR EROSION CONTROL BERMS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED WHEN IT REACHED ONE-QUARTER THE HEIGHT OF THE SILT SOCKS.
- INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
- ALL SEEDED AREAS SHALL BE CHECK REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEED AS NEEDED.
- THE CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXIT AS CONDITIONS DEMAND.

Closest solar panels at elevation of 192 ft on south side of forested ridge from the historic buildings in Nashua Pennichuck Water Works historic area.

Closest historic buildings located to north and northeast at elevations of 140-150 ft.

PREPARED FOR:
GSSG NEW HAMPSHIRE, LLC
36 WATWOOD AVENUE PORTSMOUTH, NEW HAMPSHIRE 03801 (603) 494-6801

RECORD OWNER:
PENNICHUCK WATER WORKS, INC.
25 MANCHESTER STREET P.O. BOX 1947 MERRIMACK, NH 03054 (603) 882-5191

EROSION CONTROL PLAN
PHASE II

PENNICHUCK WATER SOLAR
200 OLD HARRIS ROAD
NASHUA, NEW HAMPSHIRE

HSL
Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
3 Courser Street
Nashua, NH 03063
(603) 883-2057
www.haynerswanson.com

STATE OF NEW HAMPSHIRE
JAMES N. PETROPOULOS
No. 10274
Professional Engineer
C/SEAL

FIELD BOOK: 144
DWG. LOC.: J-5000/1877/0W6/5677 SITE
Scale 1" = 60'
Date 5677
8 OF 10
Sheet

2020
24 SEPTEMBER



NH DOT Name and Number and/or Project Title:		DHR R&C #: 11451
Nashua Pennichuck Water Solar		
RPR Form RPR PHOTO LOG		
Photo #	NH DHR Inventory # and/or locational information; Include a brief description of the photograph if necessary.	
1	Looking northeast from south edge of project site towards water storage tank and residential properties located at top of ridge/hill. Historic buildings and structures are located behind below water storage tank down the hill. Far left tree line will remain as is.	
2	Photo taken from abutter's yard south of the top of ridge (notice hill rising to right). Water storage tank located out of picture to right at top of ridge. Solar project area through trees to left, below ridge.	
3	Photo of project's southern boundary at the end of Old Harris Road. Looking NW toward tree line of northern project boundary in background. Forested ridge located to right and rising further right.	
4	Photo taken from NE corner of project site looking SW towards southern boundary of site defined by Old Harris Road. Land slopes down towards Old Harris Road and SW corner of site.	



Photo 1: Looking northeast from south edge of project site towards water storage tank and residential properties located at top of ridge/hill. Historic buildings and structures are located behind below water storage tank down the hill. Far left tree line will remain as is.



Photo 2: Photo taken from abutter's yard south of the top of ridge (notice hill rising to right). Water storage tank located out of picture to right at top of ridge. Solar project area through trees to left, below ridge.



Photo 3: Photo of project's southern boundary at the end of Old Harris Road. Looking NW toward tree line of northern project boundary in background. Forested ridge located to right and rising further right.



Photo 4: Photo taken from NE corner of project site looking SW towards southern boundary of site defined by Old Harris Road. Land slopes down towards Old Harris Road and SW corner of site.

Appendix XI: Tribal Consultations



United States Department of Agriculture

5/5/2021

Rural Development
Rural Utilities Service
1400 Independence
Ave SW, Room 2230
Stop 1570,
Washington, DC,
20250
Voice 202.695.2540
Fax 202.690.0649

Eugene Rich
Chief
Sovereign Abenaki Nation of Missisquoi
PO Box 276
Swanton, VT 05488

Subject: USDA RD RUS Staff THPO Recommended Finding of No Adverse Effects
Pennichuck Water Solar Facility Project
Nashua, New Hampshire

Dear Chief Rich:

Thank you for your March 17, 2021 email responding to Aligned Climate Capital LLC's letter about their Pennichuck Solar Facility Project (see Enclosure A).

As you know, the Rural Utilities Service (RUS), which is one of the three federal agencies that comprise the U.S. Department of Agriculture's Rural Development (RD), is considering an application for financial assistance from Aligned Climate Capital LLC (Aligned) for Pennichuck Solar Facility Project. Aligned proposes to construct a ground-mount 2,250 kilowatt ground-mount solar photovoltaic (PV) facility located at 200 Concord St., Nashua, NH 03064.

RUS may fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review if there is agreement. RUS recognizes that consultation is a federal responsibility. Therefore, RUS wants to thank the Sovereign Abenaki Nation of Missisquoi for their willingness to work directly with our applicants as they proceed through the steps of Section 106 review.

As part of that effort, the potential applicants noted above have recently submitted information to you regarding their proposed Project(s) for the Pennichuck Solar Facility Project (see Enclosure B).

The proposed solar array will be located on Map 52, blocks 65 and 118, owned by Pennichuck Corporation and contained wooded, undeveloped land south of Supply Pond and Harris Pond, west of the Merrimack River and Concord Street, north of NH-

Route 3/Henri A Burque Highway and Pennichuck Middle School athletic fields, and east of Manchester Street (see Figure 1 of Enclosure C). The project will take place on parcels that amount to approximately 8 acres (see Figure 4 and 5 of Enclosure C). The project's area of potential effects consist of permanent and temporary impacts to the ground surface in the case of tree clearing, grading, and staging areas. Ground-breaking activities include driving small diameter posts 4 to 6 feet into the ground for supporting the solar array, tree clearing, grading, and staging areas.

Due to the topography sloping away and toward the south, views of the solar array panels will be obstructed by the ridgeline between the historic structures at the Pennichuck Water treatment facility and the Project. A review of previously surveyed or listed properties was conducted via EMMIT from the Department of Historical Resources on October 14, 2019 and again on April 19, 2021. No previously surveyed or listed properties were identified in the immediate project area. The proposed project falls within the Nashua, Pennichuck Water Works Historic District (Area Code NS-B115). Across from Supply Pond, six structures were built during the mid to late 1800s for the Pennichuck Water Works operation and contribute to the Historic District. These buildings are at elevations between 140 and 155 feet and the closest building, NAS1153 Snow Pumping Station is approximately 720 ft. to the northeast of the closest solar panel and the distances are marked on Figure 4 of Enclosure C. A long forested ridge to the south of these buildings lies between the buildings and the solar project at an elevation of 192 feet. The closest solar panels to these buildings are being installed at an elevation of around 190 feet on the far side of the ridge from the buildings. Figure 5 shows the detailed topography of the project while Figure 4 shows topography of the greater area surrounding the project and the historic buildings. Additional pictures were taken near and within the project site showing the forested ridge and view of the northern edge of the project (see Enclosure C). Within a ½-mile buffer from the proposed site, on the northern band of Supply Pond, is an area called Harris Pond Intake Structure (Inventory #MER0017). This area is outlined in green, as well as the six historic structures which are labeled on the EMMIT map in Figure 2 (see Enclosure C).

The proposed project consists of driving small diameter posts 4 to 6 feet into the ground for supporting the solar array, tree clearing, grading, and staging areas. There are no known or suspected archaeological resources within the project area.

The SHPO concurred on a finding of no adverse effect on April 26, 2021. Based on the findings of the viewshed analysis and the SHPO's comments, a finding of no adverse effect in accordance with 36 CFR § 800.5(b) is appropriate for the Pennichuck Solar Facility Project (see Enclosure D).

Accordingly, the RUS is submitting a finding of no adverse effect in accordance with 36 CFR § 800.5(b) and supporting documentation for review and consideration by the Sovereign Abenaki Nation of Missisquoi.

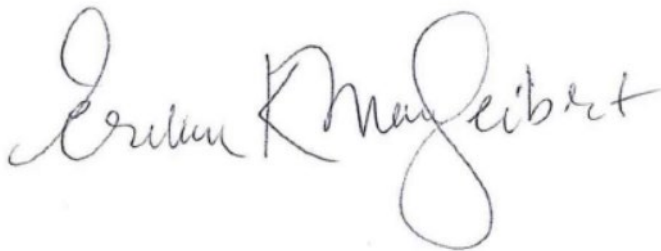
In your response you requested that Sovereign Abenaki Nation of Missisquoi pay a processing fee. RUS recognizes that under applicable Federal statute (NHPA) and in regulations (36 CFR

Part 800) there is no requirement for federal agencies or their applicants to remunerate any party, including an Indian tribe, for its participation in Section 106 review. Accordingly, when a federal agency or its applicant is seeking the views of an Indian tribe to fulfill the agency's legal obligations under a specific provision of 36 CFR Part 800, the agency or applicant is not required to pay the tribe for providing its views. Because the legal basis for the THPO's request is absent in federal law and regulations, RUS has advised these applicants not to pay the processing fee as requested.

However, it is the hope of RUS that you will elect to continue participating in Section 106 review for the referenced undertakings as we value your opinion and recommendations. Please submit your recommendations within 30 days of your receipt of this request to RUS. If no timely response is received, the federal agency may determine how to proceed with Section 106 review in accordance with 36 CFR § 800.3(b)(4).

In the hope that you do participate, or should you have any questions, we ask that you please contact Alexandria Anderson, RUS Anthropologist at alexandria.anderson@usda.gov for any additional information that you might need for your review.

Sincerely,

A handwritten signature in cursive script, reading "Erika K. Martin Seibert". The signature is written in dark ink on a white background.

Erika K. Martin Seibert, Ph.D.
Federal Preservation Officer, Archaeologist
Rural Utilities Service, Rural Development
U.S. Department of Agriculture

Enclosure(s)

Enclosure A: March 17, 2021 email from Sovereign Abenaki Nation of Missisquoi

Enclosure B: Project Maps and Viewshed Analysis

Enclosure C: March 16, 2021 Submission to Sovereign Abenaki Nation of Missisquoi

Enclosure D: April 26, 2021 SHPO Concurrence

CC

Sent: Wednesday, March 17, 2021 5:34 PM

To: Anderson, Alexandria - RD, Washington, DC <alexandria.anderson@usda.gov>

Subject: FW: [External Email]Re: Tribal Consultation Letter - Pennichuck Solar Project

Alex,

Please see response below from the Abenaki Nation (NH) in regards to Aligned Solar incoming projects.

I've not encountered this type of response...

"Will your company or the USDA be providing compensation for resources to review and have active participation in this process?"

Any guidance you could provide would be appreciated.

Michael Geiger

Environmental Protection Specialist

Environmental and Engineering Staff

Water and Environmental Programs

Rural Utilities Service, Rural Development Agency United States Department of Agriculture

1400 Independence Avenue, SW

Washington, DC 20250

Phone: 202.819.0076

<https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.rd.usda.gov%2F&data=04%7C01%7C%7C1b968ea96d984310247a08d8ed371d26%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637520168414812410%7CUnknown%7CTWFpbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IjEhaWwiLCJXVCi6Mn0%3D%7C1000&data=%2F%7C4WjcULXlcaukHWUCLD7zCu5HeucbH9xYB32YTIGeA%3D&reserved=0>

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-----Original Message-----

From: chiefdonstevens@comcast.net <chiefdonstevens@comcast.net>

Sent: Wednesday, March 17, 2021 4:20 PM

To: Eric Lee <eric@alignedclimatecapital.com>

Cc: Brendan Bell <brendan@alignedclimatecapital.com>; Geiger, Michael, - RD, Washington, DC <Michael.Geiger@usda.gov>; Brian Chenevert <brialcay@yahoo.com>

Subject: [External Email]Re: Tribal Consultation Letter - Pennichuck Solar Project

[External Email]

If this message comes from an unexpected sender or references a vague/unexpected topic; Use caution before clicking links or opening attachments.

Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

Kwai (greetings) Eric,

Wliwni (thank you) for contacting our tribe. I have copied in Brian Chenevert who is out Tribal Historic Preservation Officer for review and comment. I will be available to him and yourself as time allows.

Will your company or the USDA be providing compensation for resources to review and have active participation in this process?

Wao lowzi (Be Very Well),

Don Stevens, Chief

Nulhegan Band of the Coosuk - Abenaki Nation

<https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.abenakitribes.org%2F&data=04%7C01%7C%7C1b968ea96d984310247a08d8ed371d26%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637520168414812410%7CUnknown%7CTWFpbGZsb3d8eyJWljiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I1haWwiLCJXVCi6Mn0%3D%7C1000&sdata=BRZwUwJAcATsI38whVEkKnpI3INfps%2FYwd1IZKF%2Fpjs%3D&reserved=0>

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> On 03/16/2021 7:23 PM Eric Lee <eric@alignedclimatecapital.com> wrote:

>

>

> Dear Chief Stevens,

> I hope this email finds you well. My name is Eric Lee, and I work for Aligned Climate Capital LLC (Aligned). I am reaching out to you today because Aligned is seeking financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) under its direct loan program for a ground-mount solar electric generating project named Pennichuck Solar located in New Hampshire. Based on information gathered, Aligned was advised to consult with your tribe regarding this project.

> We request that you review the attached letter. If you have any questions, please feel free to reach out to me by email or phone.

> Sincerely,

> Eric Lee

> Vice President

> Aligned Climate Capital

> 3900 W Alameda Ave.

> Los Angeles, CA 91505

> Mobile:(818) 640-6717

> LinkedIn:<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%25>

> 25

> 2F%2Fwww.linkedin.com%2Fin%2Ffelee1593%2F&data=04%7C01%7C%7C6c1dc0e

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> 7EEONOI1vCT7%2BUeALCep%2B9AyU3GpcE%3D&reserved=0

> <https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.a>

> [ignedclimatecapital.com%2F&data=04%7C01%7C%7C6c1dc0e50e7f408e42fc](https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.alignedclimatecapital.com%2F&data=04%7C01%7C%7C6c1dc0e50e7f408e42fc)

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> 0h4MZ3Ce6nlQUeyR%2Ffx58%3D&reserved=0



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

April 22, 2021

New Hampshire Division of Historical Resources
State Historic Preservation Office
19 Pillsbury Street
Concord, New Hampshire 03301

Attn: Review & Compliance

RE: Request for Project Review, R&C # 11451
Pennichuck Water Solar
200 Old Harris Road
Nashua, NH 03064

To Whom it May Concern:

Enclosed is a request for review of a solar array project at 200 Old Harris Road, Nashua, New Hampshire. The letter serves as a supplement to the Request for Project Review (RPR) form.

PROJECT DESCRIPTION

The proposed solar array will be located on Map 52, blocks 65 and 118, owned by Pennichuck Corporation (Penn Corp) and contain wooded, undeveloped land south of Supply Pond and Harris Pond, west of the Merrimack River and Concord Street, north of NH-Route 3/Henri A Burque Highway and Pennichuck Middle School athletic fields, and east of Manchester Street. Site location can be seen in Figure 1 attached.

The project will occupy approximately 16 acres. The extents of the proposed solar array can be seen in Figure 4 and 5 attached. The project's area of potential effects consists of permanent and temporary impacts to the ground surface in the case of tree clearing, grading, staging areas, and the permanent installation of posts to support the solar panels.

The project will be reviewed by Rural Utilities Service, Rural Development of the United States Department of Agriculture for RUS funding.

ARCHITECTURE

Due to the topography sloping away and toward the south, views of the solar array panels will be obstructed by the ridgeline between the historic structures at the Pennichuck Water treatment facility and the solar project. A review of previously surveyed or listed properties was conducted via EMMIT from the Department of Historical Resources on October 14, 2019 and again on April 19, 2021. No previously surveyed or listed properties were identified in the immediate project area. The proposed project area falls within the "Nashua, Pennichuck Water



Works" Historic District (Area Code ID NAS-B115). Across from Supply Pond, six structures were built during the mid to late 1800s for the Pennichuck Water Works operation and contribute to the National Register. These buildings are at elevations between 140 and 155 feet and the closest building, NAS1153 Snow Pumping Station, is approximately 720 ft to the northeast of the closest solar panel. Distances are marked on Figure 4. A long forested ridge to the south of these buildings lies between the buildings and the solar project at an elevation of 192 feet. The closest solar panels to these buildings are being installed at an elevation of around 190 feet on the far side of the ridge from the buildings. Figure 5 shows detailed topography of the project while Figure 4 shows topography of the greater area surrounding the project and the historic buildings. Additionally, pictures are attached at the end of this letter which were taken near and within the project site showing the forested ridge and view from the northern edge of the project.

Within a ½ mile buffer from the proposed project site, on the northern bank of Supply Pond, is an area called Harris Pond Intake Structure (Inventory # MER0017). This area is outlined in green, as well as the six historic structures, which are labeled on the April 19, 2021 EMMIT map in Figure 2.

There will be no direct impact to any pre-existing building as the solar panel array and associated equipment are freestanding and separate from any existing structure or dwelling.

ARCHAEOLOGY

The project parcels are zoned as being in the R-18 "B Suburban Residence" district and within the "Water Supply Protection District." Land features consist of a wooded blocks or lots. Past and current land use can be classified as forested wetland buffer with occasional timber harvesting from Penn Corp. Proposed groundbreaking activity consists of driving small diameter posts 4 to 6 feet into the ground for supporting the solar array, tree clearing, grading and staging areas. There are no known or suspected archaeological resources within the project area.

PHOTOGRAPH SUBMITTAL

Site photographs show the past and current site landscape and land uses. Photographs were taken by New England Solar Garden on November 26, 2019 and again on April 6, 2021 and are attached in this RPR.

If you have any questions, please do not hesitate to contact us at 720-334-9153.

Sincerely,

NEW ENGLAND SOLAR GARDEN CORP.

Lillian Fenner | Project Manager



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

Attachments:

DHR RPR Form

Figure 1: Project Location Map

Figure 2: EMMIT Project Site and Historical Properties Map. Scale 1:18,056 with ½ mile buffer

Figure 3: EMMIT Project Site and Historical Properties Map. Scale 1:4,514 with structure names

Figure 4: Photo Log Locator Map with Topography

Figure 5: HSI Engineering Layout with Topography

EMMIT Historic and Project Areas Table

EMMIT Historical Properties Table

DHR Photo Log

April 6, 2021 Site Photos

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

DHR Use Only

R&C # _____

Log In Date ____ / ____ / ____

Response Date ____ / ____ / ____

Sent Date ____ / ____ / ____

Request for Project Review by the New Hampshire Division of Historical Resources

☐ This is a new submittal

☒ This is additional information relating to DHR Review & Compliance (R&C) #: 11451

GENERAL PROJECT INFORMATION

Project Title Pennichuck Water Solar

Project Location Old Harris Road, Nashua, NH 03064

City/Town Nashua Tax Map 52 Lot # blocks 65 and 118

NH State Plane - Feet Geographic Coordinates: Easting 1035613 Northing 105261
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) USDA, EPA - construction general permit
(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference # Rural Utilities Serv

State Agency and Contact (if applicable) NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name Pennichuck Water Works, Inc. Don Ware, P.E.

Mailing Address 25 Manchester Street Phone Number 603-882-5191

City Merrimack State NH Zip 03060 Email donald.ware@pennichuck.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Lillian Fenner

Mailing Address 1023 San Luis Circle, Unit 620 Phone Number 720-334-9153

City Daly City State CA Zip 94014 Email lillian@nesolargarden.co

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (*Informative photo captions are requested.*)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (*Blank table forms are available on the DHR website.*)
EMMIT or in-house records search conducted on 4/19/2021.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

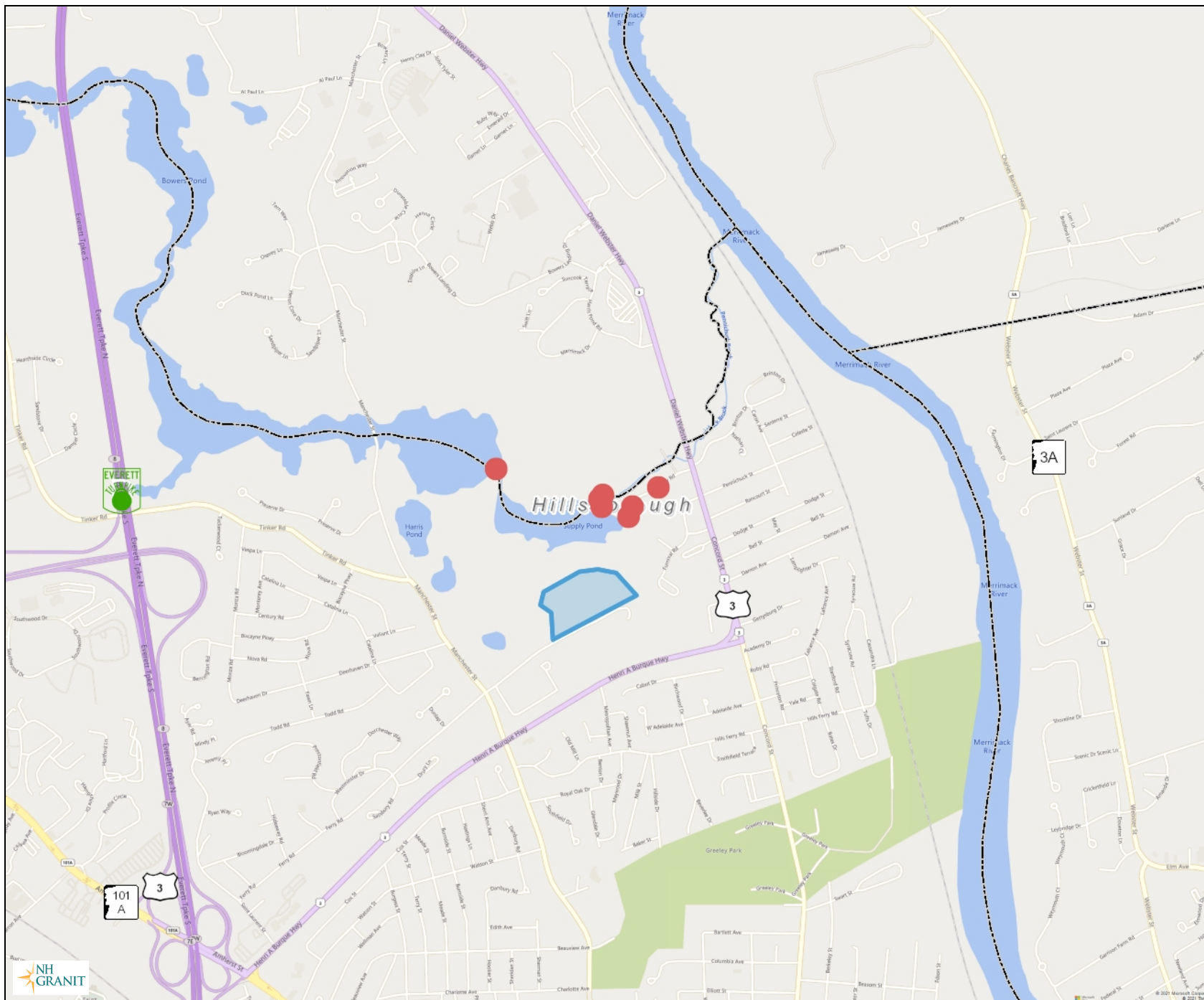
- ☐ **Insufficient information to initiate review.** ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: _____ Date: _____

Figure 1: Project Location. Nashua Pennichuck Water Solar DHR R&C #11451



Legend

- State
- County
- City/Town

Map Scale

1: 19,618

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/21/2021



Notes

BLUE outline = Solar project
RED dots = National Register structures



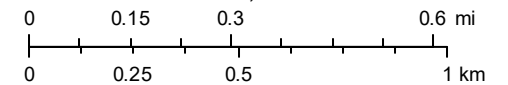
Figure 2: Nashua Pennichuck Water Solar



April 19, 2021

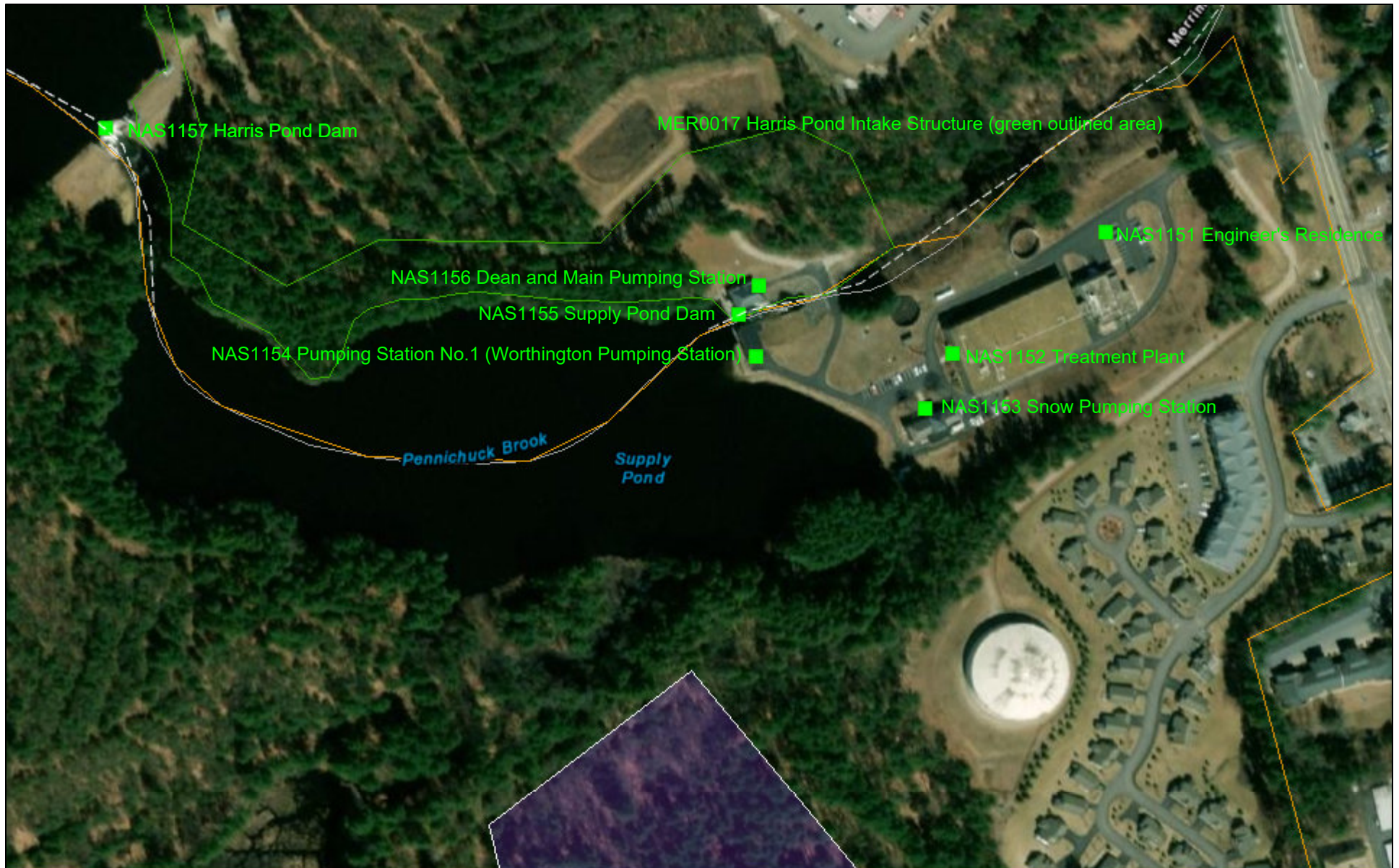
- | | |
|---|--|
| ■ Individual Properties < 10 acres | Project Areas |
| Individual Properties > 10 acres | Counties |
| Historic Districts | Towns |

1:18,056



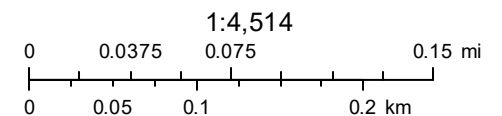
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 3: Nashua Pennichuck Water Solar



April 19, 2021

- Individual Properties < 10 acres
- Individual Properties > 10 acres
- Historic Districts
- Counties
- Towns



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 4: Nashua Pennichuck Water Solar DHR R&C #11451



Legend

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 Contour_2ft_0108010607_s

Map Scale

1: 4,905

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Map Generated: 4/21/2021



Notes

BLUE outline = Solar project
 RED dots = National Register structures
 Location of photo indicated by square,
 direction by arrow.
 Distance from solar panels to closest NR
 properties marked in pink.



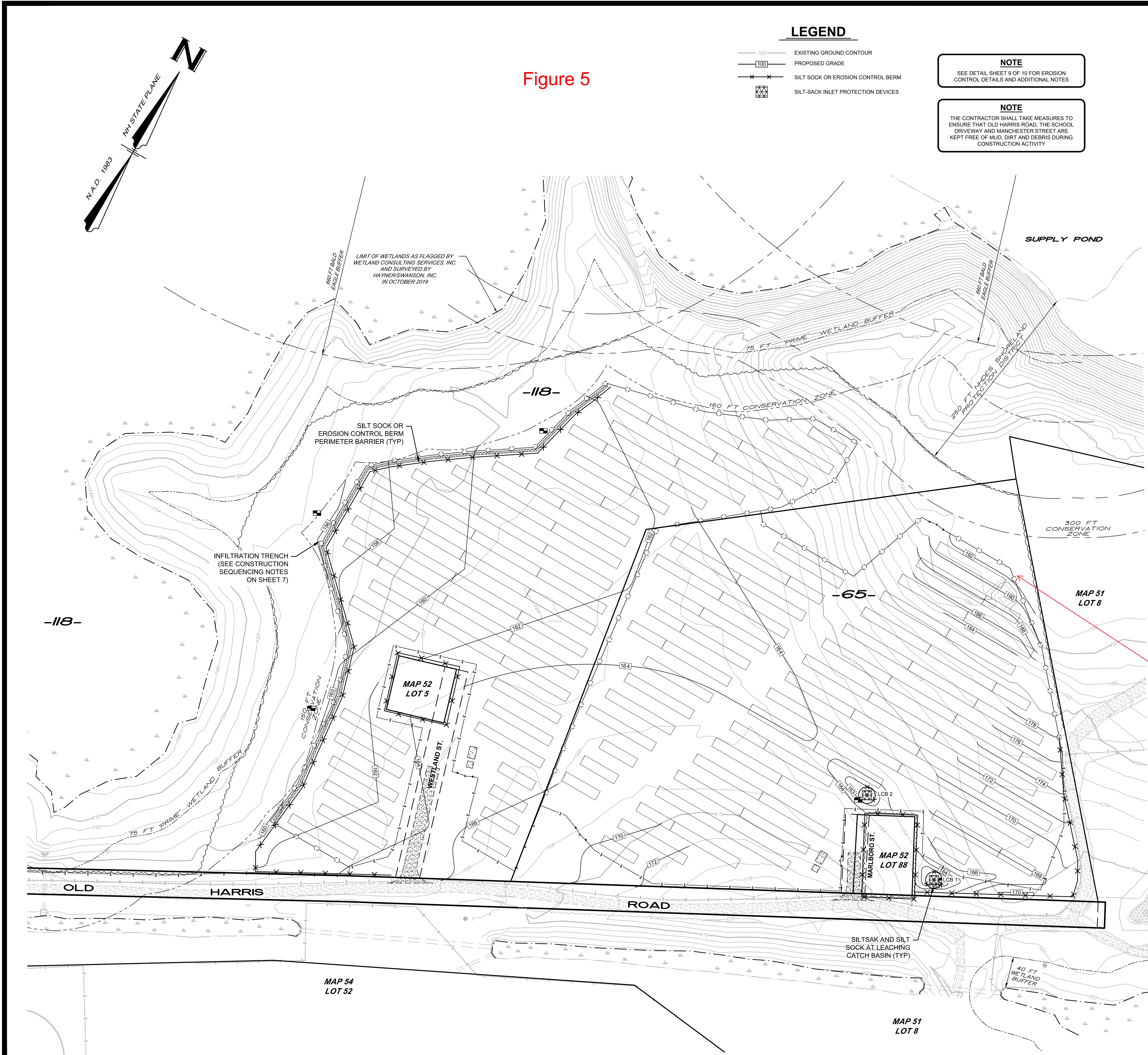


Figure 5

LEGEND

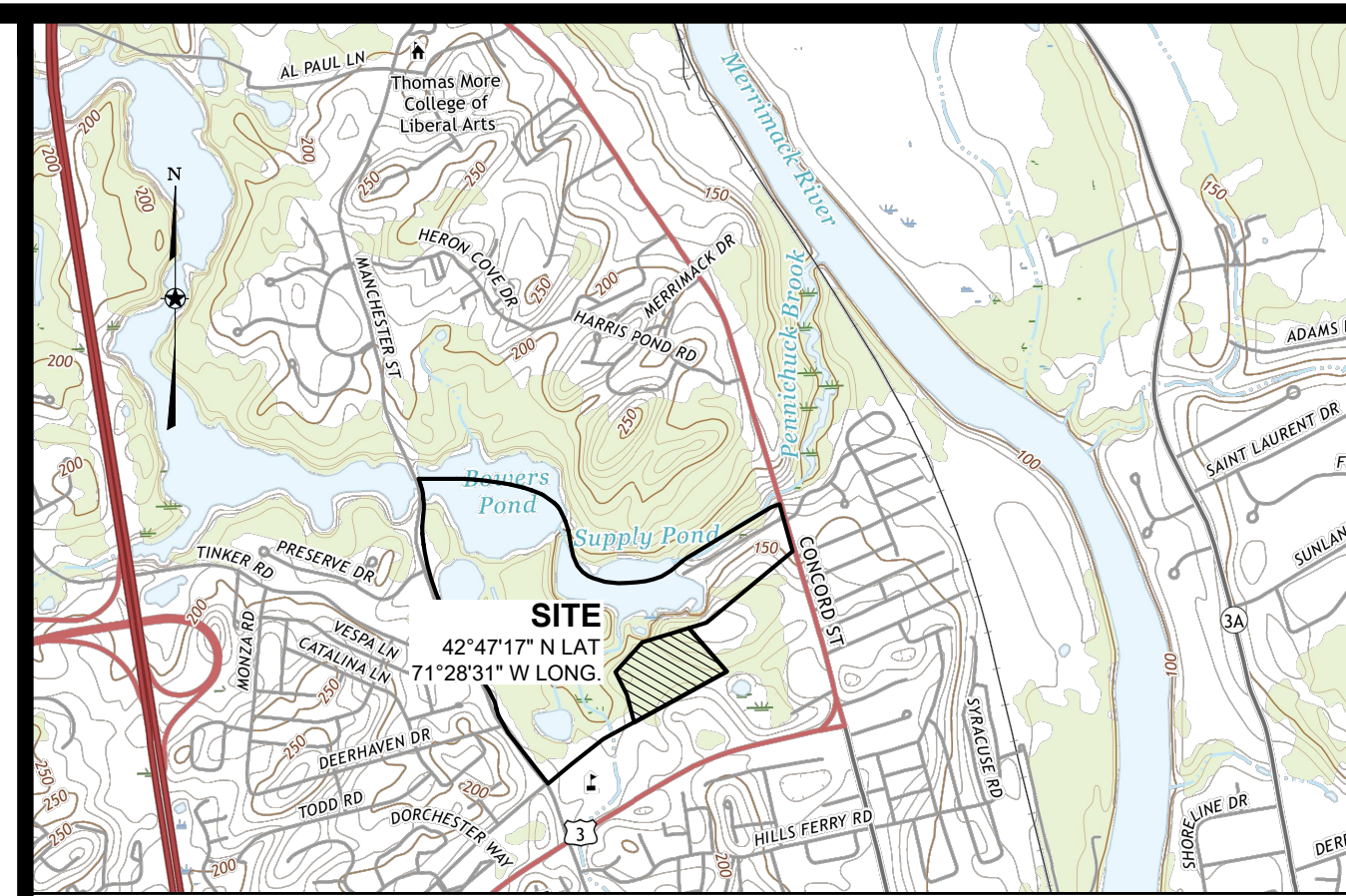
- 100 EXISTING GROUND CONTOUR
- 100 PROPOSED GRADE
- X X SILT SOCK OR EROSION CONTROL BERM
- SILT-SACK INLET PROTECTION DEVICES

NOTE

SEE DETAIL SHEET 3 OF 10 FOR EROSION CONTROL DETAILS AND ADDITIONAL NOTES

NOTE

THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT OLD HARRIS ROAD, THE SCHOOL DRIVEWAY AND MANCHESTER STREET ARE KEPT FREE OF MUD, DIRT AND DEBRIS DURING CONSTRUCTION ACTIVITY



VICINITY MAP

GENERAL NOTES: (PHASE II)

- ALL MEASURES STATED ON THIS EROSION CONTROL PLAN, AND IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETE PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT.
- SILT SOCKS OR EROSION CONTROL BERMS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED WHEN IT REACHED ONE-QUARTER THE HEIGHT OF THE SILT SOCKS.
- INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
- ALL SEEDED AREAS SHALL BE CHECK REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEED AS NEEDED.
- THE CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXIT AS CONDITIONS DEMAND.

Closest solar panels at elevation of 192 ft on south side of forested ridge from the historic buildings in Nashua Pennichuck Water Works historic area.

Closest historic buildings located to north and northeast at elevations of 140-150 ft.

PREPARED FOR:
GSSG NEW HAMPSHIRE, LLC
36 WATWOOD AVENUE PORTSMOUTH, NEW HAMPSHIRE 03801 (603) 494-6801

RECORD OWNER:
PENNICHUCK WATER WORKS, INC.
25 MANCHESTER STREET P.O. BOX 1947 MERRIMACK, NH 03054 (603) 882-5191

EROSION CONTROL PLAN
PHASE II

PENNICHUCK WATER SOLAR
200 OLD HARRIS ROAD
NASHUA, NEW HAMPSHIRE

HSL
Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
3 Courser Street
Nashua, NH 03063
(603) 883-2057
www.haynerswanson.com

STATE OF NEW HAMPSHIRE
JAMES N. PETROPOULOS
No. 10274
Professional Engineer
C/ENGR
6/11/2020

FIELD BOOK: 144
DWG. LOC.: J-5000/5877/0W6/5877 SITE
Scale 1" = 60'

8 OF 10
5677
Sheet
24 SEPTEMBER 2020



36 Maplewood Avenue
Portsmouth, New Hampshire 03801

NH DOT Name and Number and/or Project Title:		DHR R&C #: 11451
Nashua Pennichuck Water Solar		
RPR Form RPR PHOTO LOG		
Photo #	NH DHR Inventory # and/or locational information; Include a brief description of the photograph if necessary.	
1	Looking northeast from south edge of project site towards water storage tank and residential properties located at top of ridge/hill. Historic buildings and structures are located behind below water storage tank down the hill. Far left tree line will remain as is.	
2	Photo taken from abutter's yard south of the top of ridge (notice hill rising to right). Water storage tank located out of picture to right at top of ridge. Solar project area through trees to left, below ridge.	
3	Photo of project's southern boundary at the end of Old Harris Road. Looking NW toward tree line of northern project boundary in background. Forested ridge located to right and rising further right.	
4	Photo taken from NE corner of project site looking SW towards southern boundary of site defined by Old Harris Road. Land slopes down towards Old Harris Road and SW corner of site.	



Photo 1: Looking northeast from south edge of project site towards water storage tank and residential properties located at top of ridge/hill. Historic buildings and structures are located behind below water storage tank down the hill. Far left tree line will remain as is.



Photo 2: Photo taken from abutter's yard south of the top of ridge (notice hill rising to right). Water storage tank located out of picture to right at top of ridge. Solar project area through trees to left, below ridge.



Photo 3: Photo of project's southern boundary at the end of Old Harris Road. Looking NW toward tree line of northern project boundary in background. Forested ridge located to right and rising further right.



Photo 4: Photo taken from NE corner of project site looking SW towards southern boundary of site defined by Old Harris Road. Land slopes down towards Old Harris Road and SW corner of site.

March 16, 2021

Eugene Rich
Chief, Sovereign Abenaki Nation of Missisquoi
PO Box 276
100 Grand Avenue
Swanton, VT 05488

Dear Chief Rich,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

Aligned Climate Capital LLC (Aligned) is seeking financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) under its direct loan program pursuant to the Rural Electrification Act of 1936 for a ground-mount solar electric generating project located in New Hampshire. Based on information provided to Aligned by the New Hampshire Division of Historical Resources, Aligned was advised to consult with your tribe regarding the proposed 2,250 kilowatt (kWDC) ground-mount solar photovoltaic (PV) facility located at 200 Concord St., Nashua, NH 03064. A project site map for this projects is attached to this letter for your review.

This project is expected to sell 100% of its electricity generation to the incumbent electric utility (i.e. Eversource or NHEC) pursuant to New Hampshire State law (RSA 362-A:9, XIV) and NH Public Utilities Commission regulations (NH PUC 900). This tariff program is established and guaranteed through December 31, 2040. The project will be owned by Aligned Solar Partners 4 LLC (ASP4), which is a single purpose entity established for the sole purpose of owning solar PV facilities. An affiliate of Aligned, Aligned Partners Management LLC, serves as the manager of ASP4. Aligned is working with the following firms on these projects: a) GSSG Solar (developer), Precision Solar (construction firm), and ReVision Energy (O&M provider).

If RUS elects to fund the above projects, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review.

In accordance with this blanket delegation, Aligned is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct

interaction between its borrowers and the relevant Tribal Historic Preservation Officer (THPO) or official Tribal designees on these matters. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

Aligned proposes that the area of potential effects (APE) for the referenced projects consists of the projects' site location, the interconnection point, and the existing access roads as shown on the enclosed site maps. The geographic scope of the APE will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

We request that you please review the project design, map, and other attached materials. After completing your review, please provide Aligned with your recommendation(s) about whether or not study of the APE is needed to identify affected historic properties. If you recommend a study, please explain the nature and scope of the proposed investigation specifically in reference to those factors identified in 36 CFR §800.4(b)(1).

We request that you submit your recommendations within thirty (30) days of your receipt of this request to Eric Lee, Vice President, Aligned Climate Capital, 818.640.6717, eric@alignedclimatecapital.com.

If no timely response is received, Aligned will notify RUS so the federal agency may determine how to proceed with Section 106 review in accordance with 36 CFR § 800.3(b)(4). Should you have any questions, please contact Eric Lee at eric@alignedclimatecapital.com or 818.640.6717.

Sincerely,

A handwritten signature in black ink that reads "Eric Lee". The signature is written in a cursive, flowing style.

Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION **11451**

Project Boundaries and Description

Nashua

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 4/19/2021.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

- ☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☒ No Adverse Effect ☐ Adverse Effect

Comments:

Thank you for providing additional information as part of a visual assessment for the project per USDA.

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: *Nadine Muller, DSHR* Date: *4/26/21*

March 16, 2021

Don Stevens
Chief, Nulhegan Band of the Coosuk - Abenaki Nation
156 Bacon Drive
Shelburne VT 05482

Dear Chief Stevens,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

Aligned Climate Capital LLC (Aligned) is seeking financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) under its direct loan program pursuant to the Rural Electrification Act of 1936 for a ground-mount solar electric generating project located in New Hampshire. Based on information provided to Aligned by the New Hampshire Division of Historical Resources, Aligned was advised to consult with your tribe regarding the proposed 2,250 kilowatt (kWDC) ground-mount solar photovoltaic (PV) facility located at 200 Concord St., Nashua, NH 03064. A project site map for this projects is attached to this letter for your review.

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Sincerely,

A handwritten signature in black ink that reads "Eric Lee". The signature is written in a cursive, flowing style.

Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Peter Newell
Council Chief, NH Intertribal Native American Council
9 Durrell Mountain Road
Belmont NH 03220

Dear Council Chief Newell,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

Aligned Climate Capital LLC (Aligned) is seeking financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) under its direct loan program pursuant to the Rural Electrification Act of 1936 for a ground-mount solar electric generating project located in New Hampshire. Based on information provided to Aligned by the New Hampshire Division of Historical Resources, Aligned was advised to consult with your tribe regarding the proposed 2,250 kilowatt (kWDC) ground-mount solar photovoltaic (PV) facility located at 200 Concord St., Nashua, NH 03064. A project site map for this projects is attached to this letter for your review.

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Sincerely,



Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Frances Howes
President, Laconia Indian Historical Association
109 Osgood Rd.
Sanbornton NH 03269

Dear President Howes,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

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Sincerely,



Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Amy Therrian, Carrie Gendreau, and Shirley Hook
Council of Chiefs, Koasek of the Koas of the Abenaki Nation
188 Allen Bent Road
W. Braintree
Roxbury, VT 05669

Dear Council of Chiefs,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

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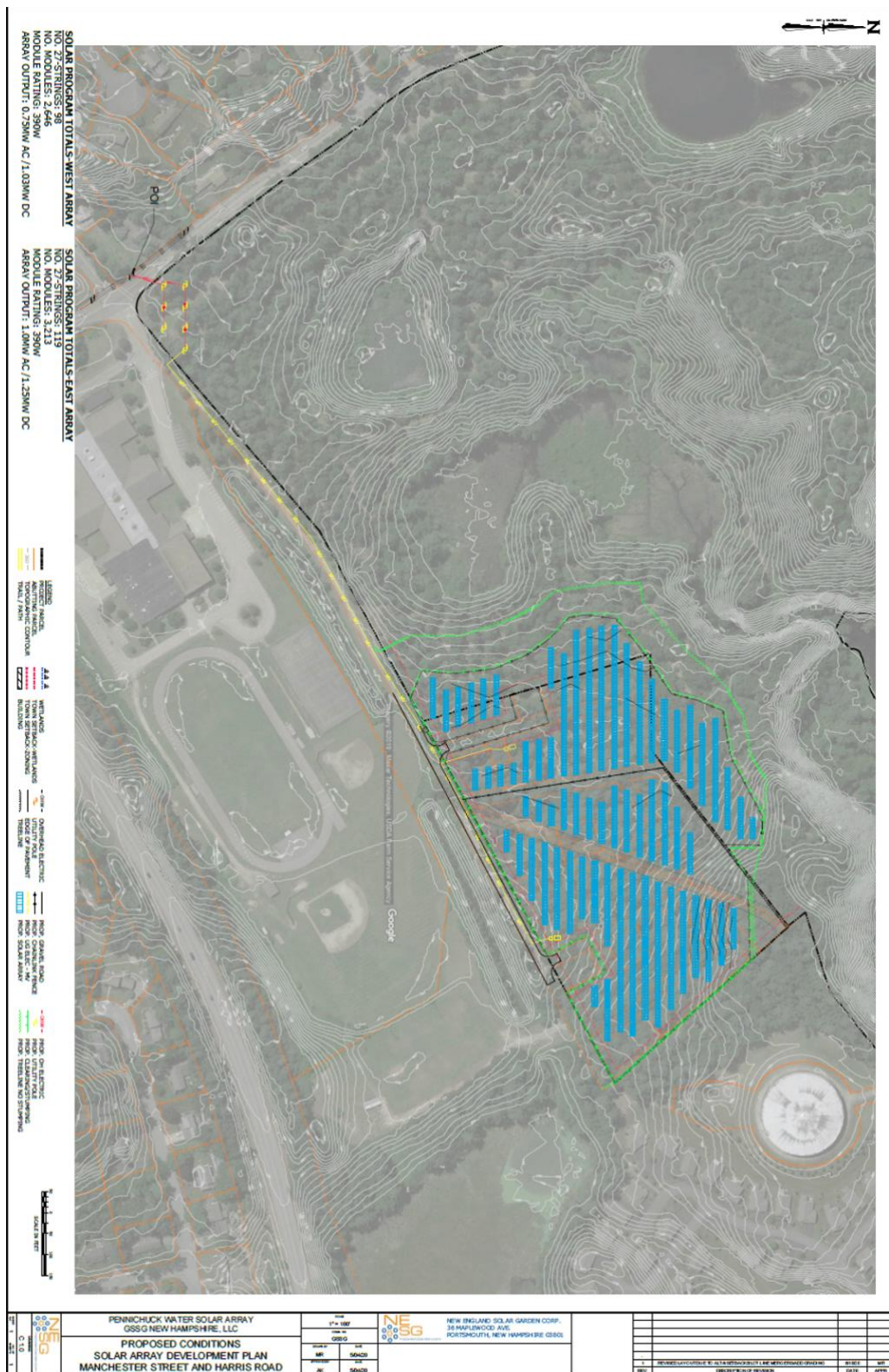
Sincerely,



Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map



March 16, 2021

Nathan Pero
Chief, Koasek (Cowasuck) Traditional Band of the Sovereign Abenaki Nation
P.O. Box 147
Post Mills, VT 05058

Dear Chief Pero,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

Aligned Climate Capital LLC (Aligned) is seeking financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) under its direct loan program pursuant to the Rural Electrification Act of 1936 for a ground-mount solar electric generating project located in New Hampshire. Based on information provided to Aligned by the New Hampshire Division of Historical Resources, Aligned was advised to consult with your tribe regarding the proposed 2,250 kilowatt (kWDC) ground-mount solar photovoltaic (PV) facility located at 200 Concord St., Nashua, NH 03064. A project site map for this projects is attached to this letter for your review.

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Sincerely,



Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Paul "Gwilawato" Bunnell
Chief, Ko'asek (Co'wasuck) Traditional Band of the Abenaki Nation
49 Pleasant St. #106
Alstead, NH 03602

Dear Chief Bunnell,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

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Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Paul Pouliot
Speaker, Cowasuck Band of the Pennacook – Abenaki People
P.O. Box 52
840 Suncook Valley Road
Alton, NH 03809-0052

Dear Speaker Pouliot,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

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Eric Lee
Vice President
Aligned Climate Capital LLC

ATTACHMENTS

1. Pennichuck Project Site Map

March 16, 2021

Rhonda Besaw
Speaker, Abenaki Nation of New Hampshire
262 Lancaster Rd
Whitfield, NH 03598

Dear Speaker Besaw,

41 MADISON AVENUE
31ST FLOOR
NEW YORK, NY 10010

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ATTACHMENTS

1. Pennichuck Project Site Map

Appendix XII: Air Quality



You are here: EPA Home > Green Book > >National Area and County-Level Multi-Pollutant Information >New Hampshire Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

New Hampshire Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of February 28, 2021

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m³) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:

NEW HAMPSHIRE

Important Notes

Download National Dataset: dbf | xls | Data dictionary (PDF)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/Part County	Population (2010)	State/County FIPS Codes
NEW HAMPSHIRE								
Cheshire County	1-Hour Ozone (1979)-NAAQS revoked	Cheshire Co, NH	92939495969798990001020304	//	Incomplete Data	Whole	77,117	33/005
Hillsborough County	1-Hour Ozone (1979)-NAAQS revoked	Boston-Lawrence-Worcester (E. Mass), MA-NH	92939495969798990001020304	//	Serious	Part	202,700	33/011
Hillsborough County	1-Hour Ozone (1979)-NAAQS revoked	Manchester, NH	92939495969798990001020304	//	Marginal	Part	198,021	33/011
Hillsborough County	8-Hour Ozone (1997)-NAAQS revoked	Boston-Manchester-Portsmouth (SE), NH	040506070809101112	03/04/2013	Moderate	Part	347,992	33/011
Hillsborough County	Carbon Monoxide (1971)	Manchester, NH	929394959697989900	01/29/2001	Not Classified	Part	109,565	33/011
Hillsborough County	Carbon Monoxide (1971)	Nashua, NH	929394959697989900	01/29/2001	Not Classified	Part	86,494	33/011

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Hillsborough County	Sulfur Dioxide (2010)	Central New Hampshire, NH	131415161718	09/20/2019		Part	17,651	33/011
Merrimack County	1-Hour Ozone (1979)-NAAQS revoked	Manchester, NH	92939495969798990001020304	//	Marginal	Whole	146,445	33/013
Merrimack County	8-Hour Ozone (1997)-NAAQS revoked	Boston-Manchester-Portsmouth (SE), NH	040506070809101112	03/04/2013	Moderate	Part	15,013	33/013
Merrimack County	Sulfur Dioxide (2010)	Central New Hampshire, NH	131415161718	09/20/2019		Part	94,372	33/013
Rockingham County	1-Hour Ozone (1979)-NAAQS revoked	Boston-Lawrence-Worcester (E. Mass), MA-NH	92939495969798990001020304	//	Serious	Part	164,200	33/015
Rockingham County	1-Hour Ozone (1979)-NAAQS revoked	Manchester, NH	92939495969798990001020304	//	Marginal	Part	47,768	33/015
Rockingham County	1-Hour Ozone (1979)-NAAQS revoked	Portsmouth-Dover-Rochester, NH	92939495969798990001020304	//	Serious	Part	83,255	33/015
Rockingham County	8-Hour Ozone (1997)-NAAQS revoked	Boston-Manchester-Portsmouth (SE), NH	040506070809101112	03/04/2013	Moderate	Part	286,035	33/015
Rockingham County	Sulfur Dioxide (2010)	Central New Hampshire, NH	131415161718	09/20/2019		Part	12,430	33/015
Strafford County	1-Hour Ozone (1979)-NAAQS revoked	Portsmouth-Dover-Rochester, NH	92939495969798990001020304	//	Serious	Whole	123,143	33/017

Important Notes

2021-02-28


Appendix XIII: Socio- Economic/ Environmental Justice

QuickFacts

Hillsborough County, New Hampshire; New Hampshire

QuickFacts provides statistics for all states and counties, and for cities and towns with a *population of 5,000 or more*.

Table

All Topics ▼	Hillsborough County, New Hampshire	New Hampshire
Population estimates, July 1, 2019, (V2019)	417,025	1,359,711
 PEOPLE		
Population		
Population estimates, July 1, 2019, (V2019)	417,025	1,359,711
Population estimates base, April 1, 2010, (V2019)	400,706	1,316,462
Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	4.1%	3.3%
Population, Census, April 1, 2010	400,721	1,316,470
Age and Sex		
Persons under 5 years, percent	▲ 5.2%	▲ 4.7%
Persons under 18 years, percent	▲ 20.2%	▲ 18.8%
Persons 65 years and over, percent	▲ 16.2%	▲ 18.7%
Female persons, percent	▲ 50.3%	▲ 50.4%
Race and Hispanic Origin		
White alone, percent	▲ 89.9%	▲ 93.1%
Black or African American alone, percent (a)	▲ 3.2%	▲ 1.8%
American Indian and Alaska Native alone, percent (a)	▲ 0.3%	▲ 0.3%
Asian alone, percent (a)	▲ 4.5%	▲ 3.0%
Native Hawaiian and Other Pacific Islander alone, percent (a)	▲ 0.1%	▲ Z
Two or More Races, percent	▲ 2.1%	▲ 1.8%
Hispanic or Latino, percent (b)	▲ 7.3%	▲ 4.0%
White alone, not Hispanic or Latino, percent	▲ 83.8%	▲ 89.8%
Population Characteristics		
Veterans, 2015-2019	26,449	96,098
Foreign born persons, percent, 2015-2019	9.7%	6.1%
Housing		
Housing units, July 1, 2019, (V2019)	173,309	642,315
Owner-occupied housing unit rate, 2015-2019	66.0%	71.1%
Median value of owner-occupied housing units, 2015-2019	\$274,800	\$261,700

Median selected monthly owner costs -with a mortgage, 2015-2019	\$2,058	\$1,948
Median selected monthly owner costs -without a mortgage, 2015-2019	\$866	\$811
Median gross rent, 2015-2019	\$1,191	\$1,111
Building permits, 2019	1,252	4,743

Families & Living Arrangements

Households, 2015-2019	161,086	532,037
Persons per household, 2015-2019	2.51	2.46
Living in same house 1 year ago, percent of persons age 1 year+, 2015-2019	84.9%	86.1%
Language other than English spoken at home, percent of persons age 5 years+, 2015-2019	13.3%	8.0%

Computer and Internet Use

Households with a computer, percent, 2015-2019	94.1%	93.0%
Households with a broadband Internet subscription, percent, 2015-2019	89.6%	87.7%

Education

High school graduate or higher, percent of persons age 25 years+, 2015-2019	92.1%	93.1%
Bachelor's degree or higher, percent of persons age 25 years+, 2015-2019	38.1%	37.0%

Health

With a disability, under age 65 years, percent, 2015-2019	8.3%	9.0%
Persons without health insurance, under age 65 years, percent	▲ 7.3%	▲ 7.6%

Economy

In civilian labor force, total, percent of population age 16 years+, 2015-2019	70.0%	67.5%
In civilian labor force, female, percent of population age 16 years+, 2015-2019	64.8%	63.4%
Total accommodation and food services sales, 2012 (\$1,000) (c)	762,192	2,942,278
Total health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	3,089,070	9,616,460
Total manufacturers shipments, 2012 (\$1,000) (c)	7,450,822	18,895,624
Total merchant wholesaler sales, 2012 (\$1,000) (c)	4,749,344	18,029,179
Total retail sales, 2012 (\$1,000) (c)	7,724,727	26,018,201
Total retail sales per capita, 2012 (c)	\$19,172	\$19,700

Transportation

Mean travel time to work (minutes), workers age 16 years+, 2015-2019	28.3	27.5
--	------	------

Income & Poverty

Median household income (in 2019 dollars), 2015-2019	\$81,460	\$76,768
Per capita income in past 12 months (in 2019 dollars), 2015-2019	\$40,955	\$40,003
Persons in poverty, percent	▲ 7.5%	▲ 7.3%

BUSINESSES

Businesses

Total employer establishments, 2018	11,030	38,375
Total employment, 2018	187,741	612,420
Total annual payroll, 2018 (\$1,000)	10,647,514	31,633,130

Total employment, percent change, 2017-2018	0.6%	1.4%
Total nonemployer establishments, 2018	29,810	108,327
All firms, 2012	35,638	131,638
Men-owned firms, 2012	20,353	76,716
Women-owned firms, 2012	11,124	38,525
Minority-owned firms, 2012	2,817	6,111
Nonminority-owned firms, 2012	31,231	121,297
Veteran-owned firms, 2012	4,101	16,119
Nonveteran-owned firms, 2012	29,338	108,817



GEOGRAPHY


Geography

Population per square mile, 2010	457.4	147.0
Land area in square miles, 2010	876.14	8,952.65
FIPS Code	33011	33

About datasets used in this table

Value Notes

 Estimates are not comparable to other geographic levels due to methodology differences that may exist between different data sources.

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info  icon to the left of each row in TABLE view to learn about sampling error.

The vintage year (e.g., V2019) refers to the final year of the series (2010 thru 2019). *Different vintage years of estimates are not comparable.*

Fact Notes

- (a) Includes persons reporting only one race
- (c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data
- (b) Hispanics may be of any race, so also are included in applicable race categories

Value Flags

- Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest or upper interval of an open ended distribution.
- F Fewer than 25 firms
- D Suppressed to avoid disclosure of confidential information
- N Data for this geographic area cannot be displayed because the number of sample cases is too small.
- FN Footnote on this item in place of data
- X Not applicable
- S Suppressed; does not meet publication standards
- NA Not available
- Z Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

CONNECT WITH US



Accessibility | Information Quality | FOIA | Data Protection and Privacy Policy | U.S. Department of Commerce

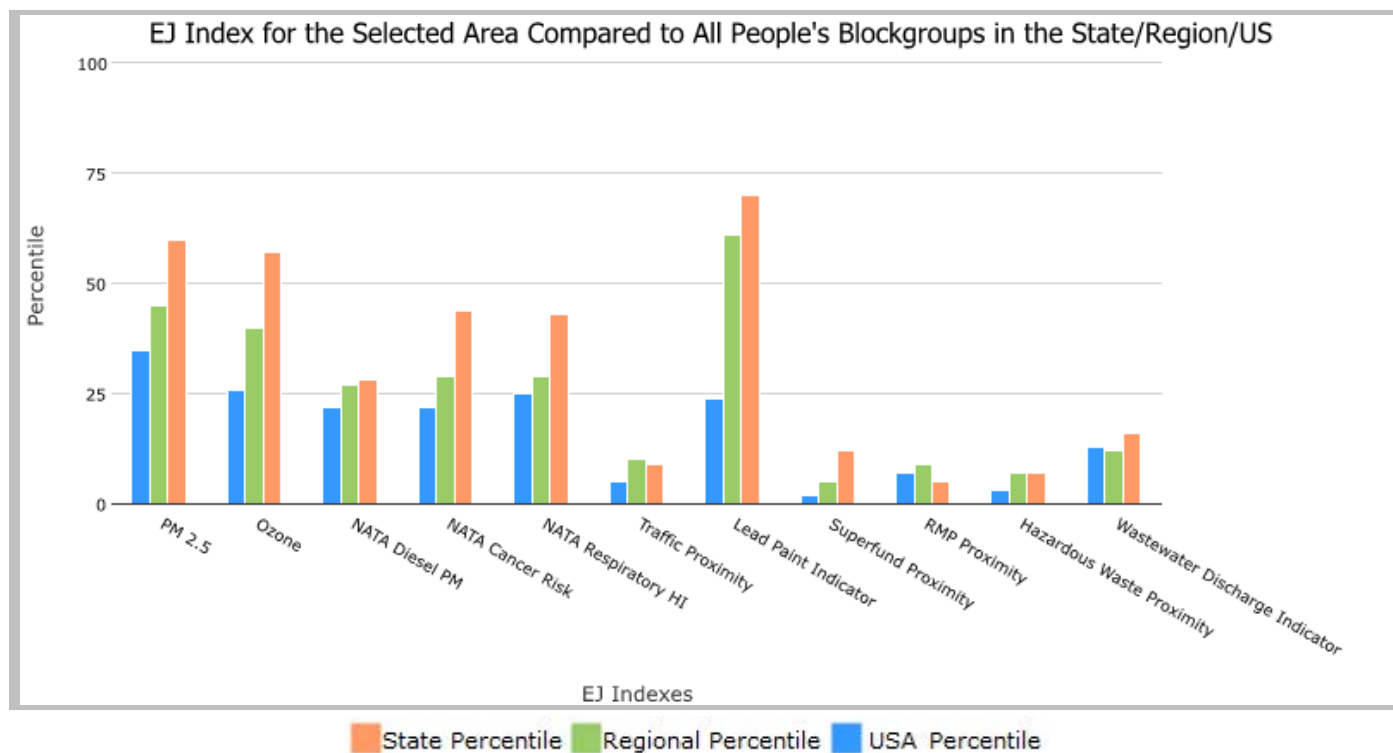
1 mile Ring Centered at 42.788357,-71.475423, NEW HAMPSHIRE, EPA Region 1

Approximate Population: 5,765

Input Area (sq. miles): 3.14

Pennichuck Solar

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	60	45	35
EJ Index for Ozone	57	40	26
EJ Index for NATA* Diesel PM	28	27	22
EJ Index for NATA* Air Toxics Cancer Risk	44	29	22
EJ Index for NATA* Respiratory Hazard Index	43	29	25
EJ Index for Traffic Proximity and Volume	9	10	5
EJ Index for Lead Paint Indicator	70	61	24
EJ Index for Superfund Proximity	12	5	2
EJ Index for RMP Proximity	5	9	7
EJ Index for Hazardous Waste Proximity	7	7	3
EJ Index for Wastewater Discharge Indicator	16	12	13



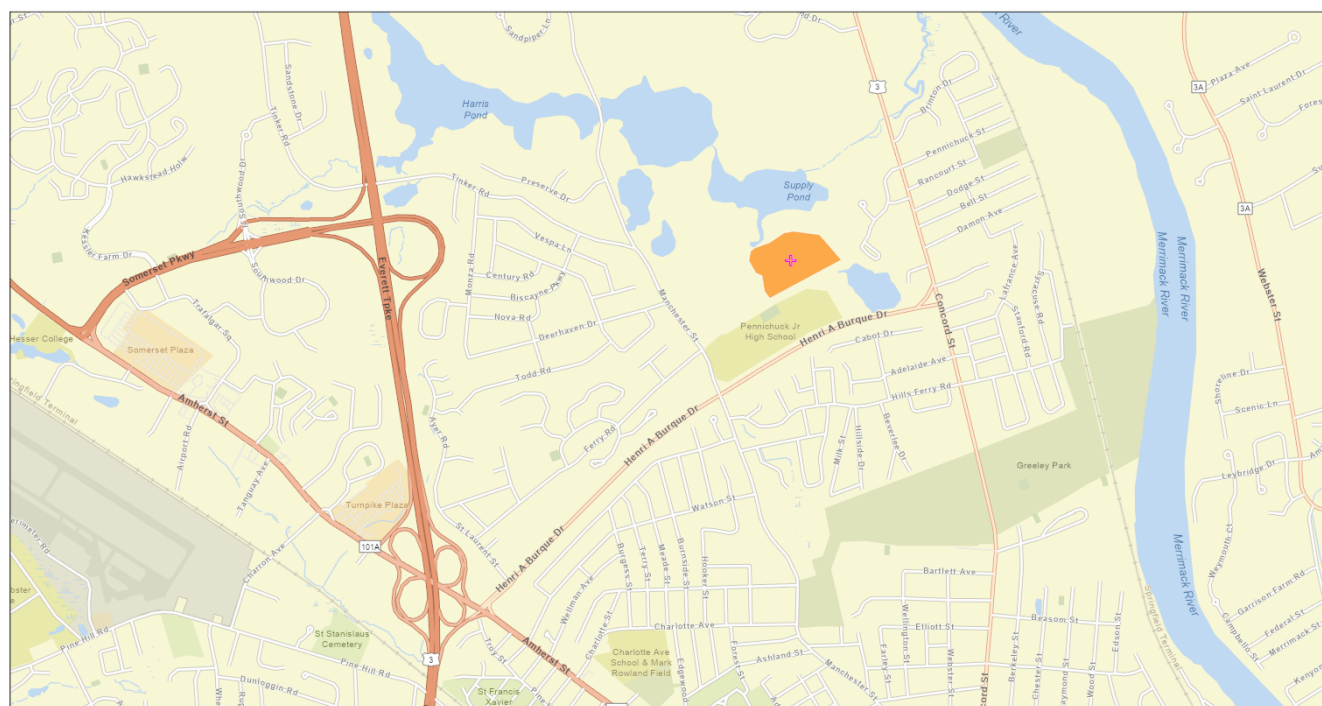
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

1 mile Ring Centered at 42.788357,-71.475423, NEW HAMPSHIRE, EPA Region 1

Approximate Population: 5,765

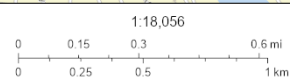
Input Area (sq. miles): 3.14

Pennichuck Solar



March 19, 2021

- + Pennichuck Solar
- pennichuck solar



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA

Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	2

EJSCREEN Report (Version 2020)

1 mile Ring Centered at 42.788357,-71.475423, NEW HAMPSHIRE, EPA Region 1

Approximate Population: 5,765

Input Area (sq. miles): 3.14

Pennichuck Solar

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	5.15	5.3	29	6.14	5	8.55	0
Ozone (ppb)	37.8	36.8	71	39.5	20	42.9	19
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.352	0.204	89	0.345	60-70th	0.478	<50th
NATA* Cancer Risk (lifetime risk per million)	29	23	96	25	90-95th	32	<50th
NATA* Respiratory Hazard Index	0.35	0.28	94	0.31	70-80th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	790	400	82	930	71	750	77
Lead Paint Indicator (% Pre-1960 Housing)	0.23	0.31	43	0.44	24	0.28	55
Superfund Proximity (site count/km distance)	0.46	0.18	90	0.15	94	0.13	94
RMP Proximity (facility count/km distance)	0.98	0.24	96	0.58	80	0.74	75
Hazardous Waste Proximity (facility count/km distance)	5.7	1.9	89	4.1	81	5	86
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0036	0.24	82	0.7	78	9.4	74
Demographic Indicators							
Demographic Index	14%	15%	60	24%	40	36%	17
People of Color Population	17%	10%	83	24%	55	39%	32
Low Income Population	12%	20%	35	24%	32	33%	18
Linguistically Isolated Population	1%	1%	75	5%	50	4%	50
Population With Less Than High School Education	6%	7%	55	9%	48	13%	36
Population Under 5 years of age	5%	5%	59	5%	54	6%	41
Population over 64 years of age	19%	17%	66	17%	68	15%	74

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

Appendix XIV: Transportation



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2020-ANE-159-OE

Issued Date: 01/28/2020

Travis Bell
GSSG Solar, LLC
1774 Platte St
Denver, CO 80202

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Pennichuck Water Solar Array (SW corner)
Location:	Nashua, NH
Latitude:	42-47-13.09N NAD 83
Longitude:	71-28-35.60W
Heights:	161 feet site elevation (SE)
	10 feet above ground level (AGL)
	171 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 07/28/2021 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (817) 222-5928, or chris.smith@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ANE-159-OE.

Signature Control No: 427315860-429088974

(DNE)

Chris Smith
Specialist

Attachment(s)
Map(s)

