Joint Application for Permit

Submitted to the Buffalo District Office of the US Army Corps of Engineers

South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Prepared for:

ConnectGen Chautauqua County LLC
1001 McKinney, Suite 700
Houston, Texas 77002
https://www.southripleysolar.com/

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March 2022

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JOINT APPLICATION FOR PERMIT FORM

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation ☐ Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☑ 401 Water Quality Certification *
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Coastal Erosion Management
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Incidental Take of Endangered / Threatened Species

* See Instructions Page 3

>US Army Corps of Engineers ☑ Check here to confirm you sent this form to USACE.

Check all permits that apply: ☑ Section 404 Clean Water Act ☐ Section 10 Rivers and Harbors Act

Is the project Federally funded? Yes ☑ No

If yes, name of Federal Agency:

General Permit Type(s), if known:

Preconstruction Notification: ☑ Yes No

>NYS Office of General Services ☐ Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

- ☐ State Owned Lands Under Water
- ☐ Utility Easement (pipelines, conduits, cables, etc.)
- ☐ Docks, Moorings or Platforms

>NYS Department of State ☐ Check here to confirm you sent this form to NYSDOS.

Check if this applies: ☐ Coastal Consistency Concurrence

2. **Name of Applicant**

ConnectGen Chautauqua County LLC

Taxpayer ID (if applicant is NOT an individual)

83-3679785

Mailing Address

1001 McKinney Street, Suite 700

Post Office / City

Houston

State

TX

Zip

77002

Telephone 956-454-1236

Email klaughlin@connectgenllc.com

Applicant Must be (check all that apply): ☑ Owner ☑ Operator ☐ Lessee

3. **Name of Property Owner (if different than Applicant)**

Mailing Address

Post Office / City

State

Zip

Telephone

Email

For Agency Use Only	Agency Application Number:

4. **Name of Contact / Agent**

Ben Brazell

Mailing Address	Post Office / City	State	Zip
217 Montgomery Street, Suite 1100	Syracuse	NY	13202

Telephone 315-471-0688 Email bbrazell@edrdpc.com

5. **Project / Facility Name**

South Ripley Solar Project

Property Tax Map Section / Block / Lot Number: See Appendix A of the PCN

Project Street Address, if applicable	Post Office / City	State	Zip
See Figure 2 for Facility Location	N/A	NY	N/A

Provide directions and distances to roads, intersections, bridges and bodies of water

✔ Town Village City County Stream/Waterbody Name

Ripley | Chautauqua | Twentymile Creek

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: 42 ° 11 ' 22.4 " Longitude: -79 ° 42 ' 27.8 "

6. **Project Description:** Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

The purpose of the proposed Facility is to construct and operate an economically viable, 270 MW solar powered electric generating facility with 20MW of battery storage capacity in Chautauqua County, New York that will provide a significant source of renewable energy to the State power grid and also provide long-term economic support for the host landowners and municipalities; consistent with New York State's energy policies.

b. Description of current site conditions:

The proposed Facility is sited in a predominately rural location comprised of agricultural fields and rural residences. Wetlands and streams are present throughout the Facility Site. Slopes within the Facility Site are generally gentle to moderately sloping with some areas of steep slopes in the northern and eastern portion of the Facility Site associated with the forested valleys of Twentymile Creek.

c. Proposed site changes:

Construction of the Facility will require tree and vegetation clearing, grubbing, topsoil stripping and grading, and the placement of fill in for the installation of buried and overhead collection lines, access roads, the collection substation, POI switchyard, laydown yards, panel areas, transformer stations, and the battery energy storage system. Fill/dredge activities in wetlands and streams will result from the installation of access roads and collection lines only. See Section 3.0 of the PCN for more information.

d. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

Twenty-foot-wide access roads will be comprised of a minimum depth of 8"depth crushed stone or gravel over a geotextile fabric or grid. HDPE or concrete pipe culverts will be installed a minimum of 24" below the access road surface with 20% embedment into a stream channel, if applicable. Collection line poles will be directly embedded in pre-drilled foundations and backfilled with crushed aggregate or concrete. See Section 4.0 of the PCN for more information.

e. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

Grading and/or grubbing for access road and collection line installation within wetlands totals 1.35 acres. Dredged material will be separated and stockpiled adjacent to the wetland, outside of agricultural fields, and suitable material will be reused as backfill in site restoration. See Section 4.0 of the PCN for more information.

f. Is tree cutting or clearing proposed? ✔ Yes If Yes, explain below. No

Timing of the proposed cutting or clearing (month/year): November 2022 through November 2024

Number of trees to be cut: TBD Acreage of trees to be cleared: 521 acres, 13 acres in WOTUS

g. Work methods and type of equipment to be used:

See Section 3.2 of the PCN.

h. Describe the planned sequence of activities:

(1) Pre-construction activities including an Environmental Monitor flagging sensitive resources to avoid during construction, identifying limits of clearing and disturbance, location of wetland and stream crossings, locations of underground utilities, and layout of erosion and sediment control measures; (2) Site preparation for construction including tree and vegetation clearing and grubbing; (3) Access road construction; (4) Electrical collection system installation.

i. Pollution control methods and other actions proposed to mitigate environmental impacts:

See Section 6.0 of the PCN.

j. Erosion and silt control methods that will be used to prevent water quality impacts:

See Section 6.0 of the PCN.

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:

See Section 5.0 of the PCN.

l. Proposed use: ☐ Private ☐ Public ☑ Commercial

m. Proposed Start Date: Q4 2022 Estimated Completion Date: Q4 2023

n. Has work begun on project? Yes If Yes, explain below. ☑ No

o. Will project occupy Federal, State, or Municipal Land? ___ Yes If Yes, explain below. ☑ No

p. List any previous DEC, USACE, OGS or DOS Permit / Application numbers for activities at this location:

New York State Office of Renewable Energy Siting (ORES) Section 94-c of the NYS Executive Law - Matter No. 21-00750.

q. Will this project require additional Federal, State, or Local authorizations, including zoning changes?

☑ Yes If Yes, list below. ___ No

SPDES General Permit for Stormwater Discharges from Construction Activity - GP-0-20-001

7. **Signatures.**

Applicant and Owner (If different) must sign the application. If the applicant is the landowner, the **landowner attestation form** can be used as an electronic signature as an alternative to the signature below, if necessary. Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant | Date: March 22, 2022

Applicant Must be (check all that apply): ☑ Owner ☑ Operator ☐ Lessee

Printed Name: Derek Rieman | Title: Vice President

Signature of Owner (if different than Applicant) | Date:

Printed Name: | Title:

Signature of Contact / Agent | Date: March 23, 2022

Printed Name: Ben Brazell | Title: Principal, Environmental Services

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number:

_____ (Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name: | Title:

Signature: | Date:

1.0 INTRODUCTION

1.1 Project Overview and Purpose

ConnectGen Chautauqua County LLC (the Applicant), a direct subsidiary of ConnectGen LLC, is proposing to construct the South Ripley Solar Project, a utility-scale solar energy generation facility and associated infrastructure, including a battery energy storage system (the Facility) in the Town of Ripley in Chautauqua County, New York (see Figure 1). The Facility will have a generating capacity of up to 270 megawatts (MWac) with 20 MWac of battery storage capacity.

Current New York State (State) energy policy is focused on the need to increase competition among energy providers, lower the cost of energy to consumers, increase efficiencies, drive investments in the electric system, and send market signals to support broad State policy preferences for green energy, energy efficiency, and equal access to affordable and clean energy. To advance these interests, both generally and with respect to specific projects, New York relies on a suite of public policy planning tools, including the State Energy Plan (SEP) and, more recently, the Reforming the Energy Vision (REV) initiative and Clean Energy Standard (CES) proceedings, to guide state actions and initiatives. In addition, New York recently enacted the Climate Leadership and Community Protection Act (CLCPA), which requires 40 percent greenhouse gas emissions reductions in absolute terms from 1990 levels by 2030 and 85 percent emissions reductions by 2050. The CLCPA also mandates that 70 percent of the State's electricity must come from renewable energy by 2030 and 100 percent of the State's electricity supply must be emissions free by 2040 (NYS Energy Planning Board, 2015).

The purpose of the proposed Facility is to construct and operate an economically viable, 270 MWac solar powered electric generating facility in Chautauqua County, New York that will provide a significant source of renewable energy to the State power grid and also provide long-term economic support for the host landowners and municipality; consistent with New York State's energy policies. Specifically, the Facility will:

- Satisfy regional energy needs in an efficient and environmentally responsible manner;
- Supplement and offset fossil-fuel electricity generation in the region, with emission-free energy;
- Contribute to reducing the amount of electricity imported to New York;
- Maximize the energy-generating potential of the solar resource in the Facility area.

To advance these goals, the South Ripley Solar Project filed an application with the Office of Renewable Energy Siting (ORES) for a Siting Permit for a Major Renewable Energy Facility pursuant to Section 94-c of the New York State Executive Law (referred to hereafter as the 94-c requirements or regulations) on August 10, 2021 (Matter No. 21-00750). Additionally, a supplement to the 94-c Siting Permit Application was submitted to ORES on January 25, 2022. A Siting Permit is anticipated to be granted for the Facility in 2022.

State and federally regulated wetlands and surface waterbodies exist throughout the proposed Facility Site. Construction of the proposed Facility components will result in temporary and permanent impacts to federally jurisdictional waters of the Unites Status (WOTUS) as well as state-regulated wetlands and 100-foot adjacent areas. Impacts to state-regulated wetlands and 100-foot adjacent areas are presented to

ORES as part of the 94-c Siting Permit Application and are therefore not anticipated to be permitted under this Pre-Construction Notification (PCN). In accordance with Section 404 of the Clean Water Act, this Joint Application for Permit, or PCN, is being submitted to the United States Army Corps of Engineers (USACE) to authorize proposed fill and dredge within WOTUS for construction or operation of certain facility components, specifically electric collection lines and access roads. The Project will perform all federally jurisdictional activities in accordance with Nationwide Permits (NWP) 14 (Linear Transportation Features) and 57 (Electric Utility Line and Telecommunications Activities).

2.0 FACILITY LOCATION & SITE DESCRIPTION

2.1 Facility Location

The proposed Facility includes multiple photovoltaic (PV) panel arrays arranged in discrete subarrays dispersed throughout the Facility Site (the collection of parcels that will host Facility components) which encompasses approximately 3,384 acres in the Town of Ripley, Chautauqua County, New York. Other proposed components include associated electrical collection lines, inverters, pad-mounted transformers, an operations and maintenance (O&M) building, a collection substation, point of interconnection (POI) switchyard, battery energy storage system, fencing, access roads, temporary construction laydown yards, stormwater management facilities, and visual mitigation planting modules. The proposed Facility layout is depicted in Figure 2.

The Facility Site is located in the northwestern part of Chautauqua County which is situated within the Cattaraugus Hills sub-region of the glaciated Allegheny Plateau physiographic province, an area that is characterized by fairly flat-topped ridges separated by broad glacial valleys. Elevations in the Facility range from 760 feet to 1,692 feet above mean sea level.

Soils in the region were derived from glacial till that were left behind as glaciers advanced and retreated (USGS, 1994; NYSDOT, 2013). The Soil Survey for Chautauqua County, New York indicates that the Facility Site includes of 25 mapped soil series. These soils range from "very poorly drained" to "well drained", and soil textures are predominantly silt loam. The Erie-Langford and Busti-Chautauqua soil mapping units comprise approximately 70% of the Facility Site. A complete list of soil types and soil mapping is provided in the attached Wetland and Stream Delineation Report (Appendix A).

The majority of the Facility Site, including the northern and eastern portions, are located in the Chautauqua-Conneaut watershed (USGS Hydrologic Unit 04120101), a sub-basin of the Lake Erie – Niagara River major drainage basin. The southwestern portion of the Facility Site is located in the French watershed (USGS Hydrological Unit 05010004), a sub-basin of the Allegheny River major drainage basin.

2.2 Wetland and Stream Resources

In order to identify wetlands, streams, and other surface water features within the Facility Site, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) defined a Wetland Study Area (Study Area) for the Facility, which included all areas that are proposed to host Facility components, as well as additional areas adjacent to proposed Facility components within participating land

parcels. A list of the participating parcels, along with landowner contact information, is attached to the Wetland and Stream Delineation Report (Appendix A). The Wetland and Stream Delineation Report provides details regarding the presence of mapped and delineated wetlands and streams within the Study Area.

Wetland and stream delineations were conducted by EDR and Fisher Associates, P.E., L.S., L.A., D.P.C. (Fisher or FA) from late June through September 2020 with a final delineation site visit in November 2020. Wetland boundary determinations were made in accordance with the three-parameter methodology described in the *Corps of Engineers Wetland Delineation Manual* (hereafter referred to as the 1987 Manual) (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeastern Region* (hereafter referred to as the Regional Supplement) (USACE, 2012). Stream boundaries were determined based on the presence of ordinary high-water line and bank characteristics. All wetlands and streams delineated onsite were categorized according to the Cowardin Classification System (1979).

A total of 147 wetlands were delineated within the Study Area, totaling approximately 382 acres. In addition, 129 streams, totaling approximately 75,325 linear feet (14.3 miles) were also delineated. In some cases, delineated wetlands and streams extend beyond the boundaries of the Study Area and are larger than the acreage documented within the Study Area. Information pertaining to individual delineated wetlands and streams is summarized in the Wetland Delineation Report (Appendix A). Wetlands and streams were categorized as one or more of the following Cowardin et al. (1979) community types: palustrine emergent wetland (PEM), palustrine scrub-shrub wetland (PSS), palustrine forested wetland (PFO), palustrine open water (POW), riverine upper perennial (R3), riverine intermittent (R4), riverine unknown perennial (R5), and riverine ephemeral (R6). All delineated wetlands and streams within the Study Area are depicted in the Wetland Delineation Report (Appendix A, Figure 7). The Wetland Delineation Report also includes photographs of representative wetland, stream, and upland communities throughout the Facility Site.

2.2.1 Federal Jurisdictional Wetlands and Streams

The Wetland and Stream Delineation Report and associated mapping have been submitted to the USACE as part of the Jurisdictional Determination (JD) request. On May 27, 2021, EDR and USACE performed a joint site visit to review the boundaries of delineated wetland and water resources and determine federal jurisdictional status of the wetlands and streams within the Facility Site. Subsequent to the joint site visit, the Applicant held two pre-application consultation meetings with USACE on June 10, 2021 and December 9, 2021, during which the Applicant indicated its intention to request a preliminary JD for wetlands and streams within the Facility Site. For the purposes of this PCN, all wetlands and streams delineated within the Study Area, including ephemeral ditches, are assumed to be federal jurisdictional WOTUS.

2.2.2 State Jurisdictional Wetlands and Streams

ORES identified 24 of the delineated wetlands to be state jurisdictional pursuant to Article 24 of the ECL due to their occurrence within, or hydrologic connection to mapped NYSDEC Freshwater Wetlands or due to their size exceeding 12.4 acres or hydrologic connection to wetlands exceeding 12.4 acres. In addition, ORES determined six streams associated with Twentymile Creek and unnamed tributaries of Twentymile

Creek to be protected under Article 15 of the ECL. The ORES Final Wetland and Waterbody Determination Letters are provided in Appendix F of the Wetland and Stream Delineation Report (Appendix A). As previously stated, proposed state jurisdictional impacts were submitted to ORES and NYSDEC as part of the 94-c Siting Permit Application and are not discussed in this PCN.

3.0 FACILITY DESCRIPTION

3.1 Facility Components

As stated above, the Facility Site consists of 55 parcels encompassing approximately 3,382 acres. The actual footprint of Facility construction is anticipated to cover an area of approximately 1,267 acres. Facility components include PV arrays, security fences, the collection substation, POI switchyard, battery energy storage system, and associated inverters and transformers. In addition, the Facility will include approximately 33 miles of access roads, 22 miles of buried electrical collection lines, and 4.6 miles of overhead electrical collection lines.

The Facility Layout was sited to avoid and minimize impacts to wetlands streams to the maximum extent practicable. Extensive reviews of the Facility design and subsequent modifications were completed with specific priority given to the avoidance of wetland impacts. Based on the current Facility layout, all PV arrays as well as the collection substation, POI switchyard, and battery energy storage system have been sited in upland areas to completely avoid impacts to wetlands. In addition, access roads and collection lines were shifted multiple times to avoid and minimize wetland impacts. However, a subset of access roads and electrical collection line crossings will result in unavoidable impacts to federally jurisdictional wetlands and streams, as further discussed below. Therefore, for the purposes of this PCN, Facility components and activities that will result in impacts to wetlands and streams are limited to the installation of access roads and electrical collection lines. Activities associated with installation of these Facility components are described below. Section 6.0 provides additional detail on proposed avoidance, minimization, and mitigation measures.

3.1.1 Access Roads

The total length of access roads required to service the Facility is approximately 33 miles, some of which includes upgrades to existing farm roads. Gravel access roads will be located both inside and outside of PV array areas and will be comprised of gravel or crushed stone underlain by woven geotextile fabric. Construction designs for gravel access roads assume a travel surface width of approximately 20 feet, with additional fill or grading on either side as necessary to achieve design grades. Excavation and filling related to gravel access road construction will vary as dictated by site conditions and excavation/fill requirements, and the design will not impede water flow. In addition, grass access ways (approximately 16 feet in width) may be established within PV arrays, at grade, along perimeter fencing where necessary to facilitate temporary construction access and operational access. To the extent possible, access roads have been sited to avoid impacts to delineated wetlands and streams.

3.1.2 Electrical Collection Lines

The medium voltage (MV) electrical collection system consists of 34.5 kV underground and overhead power lines and associated equipment such as junction boxes, switch gear, and support poles. The MW collection lines gather electricity from the MV transformers in each solar array across the Facility Site and deliver that electricity to the Facility's collection substation for interconnection to the high voltage electric grid. Underground collection is utilized whenever possible, with overhead lines only utilized to avoid and minimize environmental impact where necessary. Additionally, underground collection crossings of wetlands and waters will utilize trenchless installation methods (e.g., underground boring or horizontal directional drilling) to further minimize impacts, where feasible. The current Facility Layout proposes approximately 22 miles of buried collection lines and 4.6 miles of overhead collection lines. All collection line routes will be sited on cleared and maintained right-of-way (ROW) with widths ranging from 75 ft to 150 ft depending on the number of circuits.

3.2 Facility Construction

Pending the receipt of all required construction and environmental permits, Project construction is scheduled to begin in late 2022 or early 2023 and be completed by the end of 2023 or early 2024. Project construction is anticipated to proceed in the following sequence, with multiple activities being performed concurrently:

- Pre-construction activities (e.g., surveying, identifying and marking limits of disturbance, field marking of sensitive features, etc.)
- Site preparation for construction (e.g., clearing woody vegetation)
- Public road improvements
- Access road construction
- PV array construction
- Electrical collection line installation
- Reclamation / restoration

Additional detail on the construction methods for these activities and anticipated impacts to jurisdictional features is provided in Subsections 3.2.1 through 3.2.4. As described above, jurisdictional impacts are anticipated to result from the construction of access roads and collection lines only. Construction of other facility components (e.g., PV arrays, collection substation, POI substation, laydown yard, O&M building, etc.) will not impact any jurisdictional features and therefore, the construction details of these components are not discussed.

3.2.1 Site Preparation for Construction

Site preparation will include clearing of woody vegetation from all PV panel sites, access road corridors, and electrical collection line routes and will be conducted in accordance with the 94-c Uniform Standards and Conditions (USCs). Trees cleared from the work area will be removed and disposed of outside of any wetlands, streams, or floodways. Forest clearing within USACE jurisdictional wetlands will be conducted

without disturbance to the roots or soil and will not result in fill or dredge. Non-jurisdictional tree clearing will utilize typical forestry equipment (i.e., feller-buncher) working from construction matting to fell trees and then remove the trees to upland areas for disposal. However, in some discrete locations, stumps will be grubbed to facilitate the installation of overhead collection line poles. Actual clearing impacts resulting in fill/dredge of jurisdictional wetlands will be based on final engineering design and are described and quantified in Section 4.0.

3.2.2 Access Road Construction

Gravel access road construction will involve topsoil stripping and grubbing of stumps, as necessary, including within wetlands. Stripped topsoil will be stockpiled (and segregated from subsoil) along the road corridor for use in site restoration. Any grubbed stumps will be removed, chipped, or buried in upland areas of the site. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with gravel or crushed stone. A geotextile fabric or grid will be installed beneath the road surface, if necessary, to provide additional support. Grass access roads within fenced PV arrays will not require excavation or installation of fill materials; rather, woody vegetation will be cleared where necessary to establish open corridors and herbaceous vegetation will be maintained in an early successional state.

Gravel access roads will be designed in accordance with International Fire Protection Association requirements, to be 20 feet in width to assure adequate emergency and service access to the site. Permanent impacts from gravel access roads for stream and wetland crossings will vary as dictated by site conditions and excavation/fill requirements, including culvert structure sizing, bank elevation, and other grades. For the purposes of this PCN, permanent impacts were calculated for stream and wetland crossings based on 20-foot-wide finished travel surface with additional fill on either side of the road surface, in some locations, to achieve design grades along each gravel access road as necessary depending on site conditions.

Culverts or low water crossings will be utilized, based on site conditions as necessary, to maintain natural drainage patterns. Where access roads must cross wetlands or streams with surface water flow, a temporary pump-around or coffer dam, will be used to install crossings "in the dry". Appropriate erosion and sediment control measures will be installed and maintained according to the NYSDEC-approved Stormwater Pollution Prevention Plan (SWPPP) developed for the Facility (see Appendix B).

Access road and typical crossing details are depicted in Drawings SRS-C-101-01 and SRS-C-101-02_SUP_A of Appendix B. Stream crossing typical details are depicted in Appendix C. Proposed wetland and stream impacts resulting from the construction of access roads are presented in Section 4.0.

3.2.3 Electrical Collection System Installation

At locations where an electrical collection line crosses streams or wetlands, trenchless installation methods (e.g., horizontal directional drilling [HDD] or jack and bore) will be utilized, where feasible. Trenchless installation involves digging a bore pit and a receiving pit on both sides of and away from the sensitive resource (e.g., stream or wetland). The crossing will be installed using a drilling or auger machine set up in the bore pit, which will create a path for the underground cable to be installed. Trenchless cable installation

avoids significant impacts to environmental resources by routing the cable beneath the sensitive feature and avoiding the need for surface disturbance or clearing activities between the bore pits. The only potential impact associated with the trenchless crossing method could be an inadvertent release (i.e., frac out) of drilling mud. Such inadvertent returns are rare, and an Inadvertent Return Plan will be developed and submitted for ORES approval prior to construction in accordance with the 94-c regulations. This same plan will also be submitted to the USACE for review and approval. The Contractor will be required to implement a final Inadvertent Return Plan during construction. The locations where jack and bore crossing will be implemented are depicted in Figure 3. Typical bore section details under wetlands or streams are depicted in Drawing SRS-E-640-03 (Appendix D-1).

However, at limited locations where trenchless installation methods are not feasible, direct burial methods will result in temporary impacts to jurisdictional waters. These direct burial methods (e.g., cable trenching and cable plowing) utilize common industry equipment (e.g., trenchers, rock saws, cable plows, etc.) to excavate and prepare trenches for the installation of the underground electrical lines. Generally, open trenches will be prepared up to 54-inches deep, for a single circuit. Excavated topsoil and subsoil will be segregated and stockpiled adjacent to the trench excavations and suitable material will be reused as backfill in site restoration. Typical cable trenching details are provided in Drawing SRS-E-640-01 (Appendix D-1).

Where overhead collection lines are proposed, the ROW will be cleared to a width of at least 75 feet, with additional "danger trees" along the edge of the ROW being selectively removed as necessary. Tree and shrub clearing within USACE jurisdictional wetlands will be conducted without disturbance to the roots or soil, to the maximum extent feasible. Grubbing of stumps and permanent soil disturbance will be limited to several discrete pole locations to facilitate installation of pole footings in wetlands. Collection line poles will be directly embedded in pre-drilled foundations and backfilled with crushed aggregate or concrete. Pre-drilling is typically excavated using a drill augur to a depth of at least 6 ft. Collection line turning or corner structures may additionally include support guy wires, typically secured via helical screw anchors wherever soil conditions allow. Helical screw anchors do not require soil excavation and will only create limited soil disturbance at the point of placement associated with construction. Typical details of the collection system components are provided in Appendix D-1 and Appendix D-2. Final pole foundation details, including foundation depth and backfill material, will be determined during final Facility design.

Cleared vegetation will be piled and/or chipped in non-agricultural upland portions of the ROW. No permanent access roads will be built within the ROW. During tree clearing and construction, timber mats will be used within a corridor approximately 16 feet wide within the ROW to avoid soil disturbance at all wetland and stream crossings.

4.0 FEDERAL JURISDICTIONAL IMPACTS

Through an iterative design process, the Applicant has avoided or minimized impacts to delineated wetlands and streams to the maximum extent practicable (see discussion in Section 6.1). Where wetland avoidance was not practicable, impacts to wetland and stream resources were minimized by locating collection lines and access roads in narrow and/or previously disturbed areas whenever possible. However, minor temporary disturbance and permanent loss of wetlands and other WOTUS is unavoidable during Facility

construction activities. This section describes the jurisdictional impacts to federal WOTUS anticipated during construction of the proposed Project. Temporary and permanent jurisdictional impacts to federal WOTUS are included in the USACE consolidated spreadsheet provided in Appendix E.

During construction, temporary and permanent direct or indirect impacts to wetlands and surface waters may occur as a result of the installation of access roads and electrical collection lines. Direct impacts, including clearing of trees and vegetation, earthwork (excavating and grading activities), and the placement of fill in wetlands and surface waters, are anticipated to result from the placement of fill to accommodate access roads and associated culverts, and the installation of poles during overhead collection line construction.

4.1 Temporary Federal Wetland and Stream Impacts

Based on the current Facility layout and limits of disturbance (LOD), temporary wetland disturbance will result from soil disturbance associated with trenching for underground collection lines.

To assure that construction-related wetland impacts are minimized to the greatest extent practicable, erosion and sediment control measures will also be implemented wherever Facility construction occurs within, or adjacent to, wetlands and streams. Environmental protection measures will be implemented in accordance with the approved SWPPP and the 94-c USCs. Temporary construction-related impacts to wetlands are summarized in Table 1 and illustrated in Figure 3.

Table 1. Estimated Temporary Impacts to Federal Jurisdictional Wetlands

Wetland ID	Estimated Temporary Soil Disturbance by Wetland Type (SF)	Corresponding Figure 3 Sheet Number(s)	Work Activity [2]	Anticipated Federal Jurisdiction
	PEM[1]			
FA Wetland 021	172.5	14, 15	CL	Yes
Wetland 38	359.6	48	CL	Yes
Total	**532.1 SF**			
	0.012 acre			

[1] Wetland community types are based upon Cowardin et al. (1979): PEM = palustrine emergent wetland.
[2] CL = Collection Line.

Temporary construction-related stream impacts will include the disturbance of stream beds and banks necessary to accommodate a construction access road and culvert. The location and extent of temporary construction impacts to federal jurisdictional streams are indicated in Table 2 and illustrated in Figure 3.

All temporary construction-related impacts to wetlands and streams will be returned to pre-construction contours, stabilized, and re-seeded with native seed mix. Construction related wetland and stream impacts will be further minimized and mitigated as described in Section 6.0.

Table 2. Estimated Temporary Impacts to Federal Jurisdictional Streams

Stream ID	Stream Type(s)[1]	Estimated Temporary Impact (LF)	Estimated Temporary Impact (SF)	Figure 3 Sheet Number	Work Activity[2]	Anticipated Federal Jurisdiction
TT Ditch 002	R6	20	54.3	14	AR/C	Yes
Total		**180 LF**	**54.3**			
			0.001 acre			

[1] Stream community types noted are based upon the Cowardin et al. (1979) classification system: R4 = Riverine Intermittent; R6 = Riverine Ephemeral.
[2] AR = Access Road; C = Culvert.

4.2 Permanent Federal Jurisdictional Dredge/Fill of Wetland and Stream Impacts

Permanent dredge/fill to water resources were avoided through several design iterations of the Facility layout; however, based on the current engineering plans, there will be unavoidable permanent impacts within 14 wetlands and 10 streams. Direct fill in wetlands and streams is necessary for the installation of permanent 20-foot-wide access road crossings. Permanent jurisdictional impacts will also include 0.31 acre of jurisdictional tree and shrub clearing (i.e., soil disturbance associated with tree clearing) within the proposed overhead collection line ROW. Stumps will be grubbed at discrete pole locations to facilitate the installation of the overhead collection line poles.

Access Road Crossing/ Fill – The proposed permanent access road crossings at wetlands and streams will each consist of a 20-foot-wide gravel travel surface and additional fill/grading on both sides as necessary. To minimize impacts, the crossings were intentionally sited in previously disturbed areas, at narrow sections of the wetlands and streams, or along the edges of the wetlands and utilized existing farm roads where available. Prior to installation of each crossing, the top layer of hydric soils will be removed from the work site and stockpiled for re-use during post-construction wetland restoration efforts. Next, the subgrade will be compacted, geotextile fabric will be installed, and bank run gravel fill will be put in place as a road base.

Properly sized culverts will be installed, in accordance with NWP General and Special/Regional Permit Conditions, as necessary to provide for cross drainage and maintain wetland hydrology and/or stream flows. Final culvert sizing and details will be determined during final Facility design. As depicted in Appendix C, all culverts in streams will be partially buried to a minimum of 20 percent of the culvert's vertical rise throughout the length of the culvert to maintain low flow conditions and the passage of aquatic organisms. They will be sized at 1.25 times the width of the stream channel at ordinary high water in order to maintain bankfull flows and accommodate the modeled 2-year storm event. The culvert will be installed to align with the existing stream channel, if applicable, and will not permanently modify the pattern or profile of the stream upstream or downstream of the crossing point. High-density polyethylene (HDPE) pipes will be used for proposed culverts that are under 48 inches in diameter and corrugated metal pipe or concrete pipes will be used for larger diameter culverts. Upon completion of construction, the travel surface will be topped with crushed stone and the side slopes (and any other disturbed areas) will be stabilized with topsoil and native

seed mixes and protected with straw, cellulose mulch, or biodegradable erosion control matting in accordance with the Facility's approved SWPPP (see Appendix B).

Collection Line Permanent Forested Wetland Conversion and Fill – A total of 12.7 acres of forested wetlands will be cleared and converted to emergent or scrub-shrub wetlands and maintained as such over the life of the Facility. Approximately 12.4 acres are anticipated to include non-jurisdictional tree clearing above the soil's surface (i.e., no soil disturbance such as grubbing of stumps (see Figure 3).

However, during construction, up to a total of 0.30 acres of forested wetlands and 0.01 acre of scrub shrub wetlands may be cleared in a manner such as grubbing, causing temporary soil disturbance, or the placement of temporary or permanent fills and would be considered a jurisdictional activity. Permanent fill within USACE jurisdictional wetlands will only occur within the overhead collection line corridors at a total of 26 discrete pole locations. The actual footprint of each pole is anticipated to comprise approximately 7 square feet; however, pole details will be determined during final Facility design.

Estimated permanent impacts resulting from the placement of fill in federal jurisdictional wetlands and jurisdictional tree clearing impacts associated with each single and complete crossing are summarized in Tables 3 and 4 and shown in Figure 3. Estimated permanent stream impacts are summarized in Table 5 and also shown on Figure 3.

Table 3. Permanent Impacts (Fill) to Federal Jurisdictional Wetlands

Wetland ID	Permanent Fill (square feet)				Type of Impact[2]	Figure 3 Sheet #	Anticipated Federal Jurisdiction	PCN Trigger
	PEM[1]	PFO[1]	PSS[1]	TOTAL				
Approximate 2	7,755.8			7,755.8	CL	2	Yes	NWP 57 – single and complete project[3] exceeds 0.10-acre loss of wetlands
Wetland 33		780.8		780.8	CL	2	Yes	
FA Wetland 006	679.6			679.6	AR	8	Yes	NWP 14 – fill in special aquatic site (wetland)
FA Wetland 015	995.9			995.9	AR	10	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 102	2,102.1			2,102.1	AR/C	16	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 98	5,058.0			5,058.0	AR	20	Yes	NWP 14 – fill in special aquatic site (wetland); exceeds 0.10-acre
FA Wetland 029			16,104.9	16,104.9	AR	21, 22	Yes	NWP 14 – fill in special aquatic site (wetland); exceeds 0.10-acre loss of wetlands
Wetland 52	1,301.0		311.3	1,612.3	AR/C	27	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 84			2,880.5	2,880.5	AR	36	Yes	NWP 14 – fill in special aquatic site (wetland)

Wetland ID	Permanent Fill (square feet)				Type of Impact[2]	Figure 3 Sheet #	Anticipated Federal Jurisdiction	PCN Trigger
	PEM[1]	PFO[1]	PSS[1]	**TOTAL**				
Wetland 46	365.8	3,253.1	1,050.8	4,669.7	AR	22, 28, 33, 34, 39, 41	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 44	1,090.4			1,090.4	AR/C	57	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 81	36.7			36.7	AR	58	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 82	220.5			220.5	AR	58	Yes	NWP 14 – fill in special aquatic site (wetland)
Wetland 83	1,180.0			1,180.0	AR	59	Yes	NWP 14 – fill in special aquatic site (wetland)
TOTAL	**20,785.8 SF**	**4,033.9 SF**	**20,347.5 SF**	**45,167.2 SF**				
	0.48 acre	**0.09 acre**	**0.47 acre**	**1.04 acre**				

[1] Wetland cover types noted are based upon the Cowardin et al (1979) classification system: PFO = forested wetland, PSS = shrub scrub wetland, PEM = emergent marsh.

[2] CL = Collection Line; AR = Access Road; C = Culvert.

[3] Approximate 2 and Wetland 33 are part of the same wetland and therefore, the combined impacts for this single and complete project exceed 0.10-acre and require PCN. Please see Tables 6 and 7 for additional information on single and complete linear projects.

Table 4. Jurisdictional Forested Wetland Conversion[1]

Wetland ID	Ecological Community Type	Area (square feet)			Type of Impact[2]	Figure 3 Sheet #	Anticipated Federal Jurisdiction	PCN Trigger
		PFO[2]	PSS[2]	TOTAL				
Wetland 35	Beech-maple Mesic Forest	669.8		669.8	CL	3	Yes	NWP 57 – None, <0.10 acre
FA Wetland 012	Beech-maple Mesic Forest	3,829.5		3,829.5	CL	4, 8	Yes	NWP 57 – None, <0.10 acre
Wetland 107	Beech-maple Mesic Forest	832.9		832.9	CL	12	Yes	NWP 57 – None, <0.10 acre
FA Wetland 025	Hemlock-Northern Hardwood Forest	2,791.1		2,791.1	CL	18, 19	Yes	NWP 57 – single and complete project exceeds 0.10-acre loss of wetlands[4]
FA Wetland 026	Beech-maple Mesic Forest		567.7	567.7	CL	24	Yes	
Wetland 108	Hemlock-Northern Hardwood Forest	424.4		424.4	CL	19	Yes	
Wetland 46	Hemlock-Northern Hardwood Forest	4,534.9		4,534.9	CL	22, 23, 28, 34, 39, 41	Yes	
Total		**13,082.6 SF**	**568 SF**	**13,650.3 SF**				
		0.30 acre	**0.01 acre**	**0.31acre**				

[1] Tree clearing in combination with temporary soil disturbance and/or fill.
[2] Wetland cover types noted are based upon the Cowardin et al (1979) classification system: PFO = forested wetland, PSS = shrub scrub wetland, PEM = emergent marsh.
[3] CL = Collection Line.
[4] Wetlands FA Wetland 024, FA Wetland 026, Wetland 108, and Wetland 46 are hydrologically connected and considered part of mapped NYSDEC wetland SR-8; therefore, the combined impacts for this single and complete project exceed 0.10-acre and require PCN. Please see Tables 6 and 7 for additional information on single and complete linear projects.

Table 5. Permanent Impacts to Federal Jurisdictional Streams

Stream ID	Stream Type[1]	Permanent Impact[2] (LF)	Permanent Impact[2] (SF)	Type of Impact[3]	Figure 3 Sheet #	Anticipated Federal Jurisdiction	PCN Trigger
ST-1002	R4	9	2.9	Permanent fill associated with AR	39, 41	Yes	NWP 14 – None, <0.10 acre
ST-17	R6	80	237.2	Permanent fill associated with AR/C	1	Yes	NWP 14 – None, <0.10 acre
ST-30	R4	67	258.3	Permanent fill associated with AR/C	56	Yes	NWP 14 – None, <0.10 acre
ST-39	R3	36	142.9	Permanent fill associated with AR/C	30	Yes	NWP 14 – None, <0.10 acre
ST-40	R4, R6	31	97.2	Permanent fill associated with AR	27	Yes	NWP 14 – None, <0.10 acre
ST-41	R4	33	62.5	Permanent fill associated with AR	27	Yes	NWP 14 – None, <0.10 acre
ST-50	R3	63	633.6	Permanent fill associated with AR/C	29	Yes	NWP 14 – None, <0.10 acre
ST-69	R3	92	447.1	Permanent fill and clearing associated with AR/C	38	Yes	NWP 14 – None, <0.10 acre
ST-73	R6	47	114.4	Permanent fill associated with AR/C	40	Yes	NWP 14 – None, <0.10 acre
TT Ditch 002	R6	61	94.9	Permanent fill and clearing associated with AR/C	14	Yes	NWP 14 – None, <0.10 acre
Total		**499 LF**	**2,090.96 SF** **0.048 acre**				

[1] Stream types are based upon the Cowardin et al (1979) classification system: R3 = riverine upper perennial, R4 = riverine intermittent, R6 = riverine ephemeral.

[2] Permanent impact includes areas of fill below ordinary/mean high water.

[3] AR = Access Road; CL = Collection Line; C = Culvert.

4.3 Summary of Impacts

In summary, construction of the proposed access roads and electric collection lines will result in an estimated permanent loss of up to 1.35 acres of federal jurisdictional wetlands, with no one single and complete crossing exceeding 0.5 acre. Estimated temporary impacts to federal jurisdictional wetlands associated with the construction of access roads and electric collection lines will total up to 0.01 acre. Impacts to streams will include 0.001 acre (20 linear feet) of temporary disturbance and 0.05 acre (499 linear feet) of permanent impact. Overall, estimated permanent loss (direct fill) of federal jurisdictional wetlands and streams total approximately 1.4 acres.

Since the proposed wetland and streams impacts are primarily resulting from the construction of access roads and collection lines, this PCN is being submitted as a request for USACE verification for each single and complete project to proceed under Nationwide Permits (NWPs) 14 (Linear Transportation Features) and 57 (Electric Utility Line and Telecommunications Activities).

The proposed impacts to federally jurisdictional WOTUS are dispersed across the larger Facility Site. Each discrete crossing results in relatively de minimis impacts to the impacted WOTUS, with no single crossing exceeding the NWP threshold of 0.5 acre. As a result, each of these discrete crossings should be considered a single and complete project according to the definition for both NWP 14 and 57:

> *"Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately."*

As depicted in the Facility Layout (Figure 2), the Facility includes dozens of individual access roads, each of which begins at an existing public road and ends at a specific PV array. Therefore, each individual access road has a unique point of origin and terminal point. The Facility's electrical collection system is also made up of multiple linear electrical lines that each transmit electricity from the PV arrays (origin) to a single point of interconnect (terminal point).

The "single and complete linear project" definition above clearly requires the crossing of single or multiple waterbodies at separate and distant locations to be considered single and complete projects for the purposes of NWP authorization. As further clarified in the definition, "*…individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately*." Facility-related delineations did not identify any braided streams or rivers, or irregularly shaped lakes, and therefore such features are not

relevant to the applicability of the separate and distant definition. However, delineations did identify large, irregularly shaped wetlands, and for the purposes of PCN, the crossing of individual arms of such wetlands will not be considered separately.

To facilitate USACE review of separate and distant crossing impacts, Tables 6 and 7 summarize the total impacts for all anticipated single and complete linear projects pursuant to NWP 14 (Linear Transportation Projects) and NWP 57 (Electric Utility Line and Telecommunications Activities), respectively. Delineated wetlands comprising large, irregularly shaped wetlands were grouped based on visual observations of hydrologic connectivity in the field, review of available spatial data, and State jurisdictional determinations provided in the April 19, 2021 ORES Final Wetlands Determination letter (Appendix F of the Wetland and Stream Delineation Report).

Table 6. NWP 14 Single and Complete Project Impacts

Wetland ID	Hydrologic Connection[1]	Access Road Impacts		PCN Trigger	Figure 3, Sheet #
		SF	Acre		
FA Wetland 006	No	679.6	0.02	NWP 14 – discharge of fill in special aquatic site (wetland)	8
FA Wetland 015	No	995.9	0.02	NWP 14 – discharge of fill in special aquatic site (wetland)	10
Wetland 102	No	2,102.1	0.05	NWP 14 – discharge of fill in special aquatic site (wetland)	16
Wetland 98	Unmapped >12.4 acres	21,162.9	0.49	NWP 14 – loss >0.10-acre; discharge of fill in special aquatic site (wetland)	20, 21, 22
FA Wetland 029					
Wetland 52	Mapped, SR-8	9,162.5	0.21	NWP 14 – loss >0.10-acre; discharge of fill in special aquatic site (wetland)	22, 23, 39, 41
Wetland 84					
Wetland 46					
Wetland 44	No	1,090.4	0.03	NWP 14 – discharge of fill in special aquatic site (wetland)	57
Wetland 81	No	36.7	0.00	NWP 14 – discharge of fill in special aquatic site (wetland)	58
Wetland 82	No	220.5	0.01	NWP 14 – discharge of fill in special aquatic site (wetland)	58
Wetland 83	No	1,180.0	0.03	NWP 14 – discharge of fill in special aquatic site (wetland)	59

[1] Per ORES Final Wetland Jurisdictional Determination dated April 19, 2021.

Table 7. NWP 57 Single and Complete Project Impacts

Wetland ID	Hydrologic Connection[1]	Overhead Collection Line Impacts		PCN Trigger	Figure 3, Sheet #
		SF	Acre		
Approximate 2 Wetland 33	No	8,536.6	0.20	NWP 57 – loss of wetland exceeds 0.10-acre	2
Wetland 35	No	669.8	0.02	NWP 57 – None, <0.10 acre	3
FA Wetland 012	No	3,829.50	0.09	NWP 57 – None, <0.10 acre	4, 8
Wetland 107	No	832.9	0.02	NWP 57 – None, <0.10 acre	12, 13
FA Wetland 025 FA Wetland 026 Wetland 108 Wetland 46	Yes, Mapped, SR-8	8,318.1	0.19	NWP 57 – loss of wetland exceeds 0.10-acre	18, 19, 22, 23, 24

[1] Per the ORES Final Wetland Jurisdictional Determination dated April 19, 2021.

5.0 ALTERNATIVES ANALYSIS

This section provides information to facilitate understanding of the selection criteria that the Applicant employed in identifying the proposed Facility Site and possible alternatives to avoid and minimize impacts to jurisdictional wetlands and streams.

5.1 Alternative Facility Layout

The Applicant selected the proposed site for the Facility based on the presence of a suitable solar resource, open and available land, willing landowners, and compatible land use. In addition, the proposed site provides good vehicular access, relative ease of connecting to the existing electric transmission grid, available capacity on the high-voltage electric grid, and the ability to avoid areas of high environmental or cultural sensitivity. These factors combined to make the proposed site desirable from the standpoint of large-scale solar power development. Given the unique nature and constraints associated with the siting of solar-powered electric generation facilities in New York, as discussed above, the Applicant did not conduct a detailed evaluation of the comparative advantages and disadvantages of alternate Facility Sites. It is simply not practicable to procure land contracts, perform environmental and engineering studies, enter into and progress through multiple interconnection permit processes, and conduct community outreach for alternative locations. Additionally, since this proposed Facility location meets the criteria for developing a viable solar energy project with relatively minor environmental impacts, the evaluation of alternate sites in the region was not considered necessary.

5.2 Facility Design/Layout Alternatives

The preferred alternative for the Facility is the layout of Facility components described in this PCN.

The Applicant has continually refined the Facility layout since 2019, when an initial layout of the Facility was developed based on a desktop review of mapped resources and known site features. Since then, the Applicant has made multiple revisions to the Facility design, based on environmental, cultural, and other studies and on-site engineering, as well as various regulatory considerations. Changes included modifications to the overall footprint of the Facility (e.g., PV array locations), shorter spacing between rows of PV modules, and changes to the placement of certain components to avoid ecological and archaeological resources, all while maintaining an area that would support the level of energy production necessary to meet the fixed costs of development, interconnection, mobilization, financing, and operation of the Facility. A summary of the iterative Facility layout changes made throughout the design process is provided in Appendix F.

The Applicant has prioritized minimization of environmental and cultural impacts throughout the development of the Facility design. This has included regular and ongoing consultation with the ORES, NYSDEC, SHPO, and other stakeholders regarding wetlands and other sensitive resources.

The Applicant has also proactively engaged many stakeholders to identify and avoid the most valuable resources found within the Facility Site. These consultations resulted in the relocation of PV modules from certain parcels within the proposed layout which would have increased the Facility's visual impacts. After initial results from environmental studies were made available, the Applicant negotiated agreements with additional landowners to expand the Facility Site and relocate PV modules to avoid areas with high conservation priority, such as NYSDEC-mapped wetlands, forested wetlands, and archaeological sites.

The currently proposed Facility layout is the result of the final layout considered under the 94-c Siting Permit Application and the culmination of multiple iterations of refinement to the initial layout which has substantially reduced impacts to wetlands.

5.2.1 No Action

The No Action Alternative assumes that the Facility Site would continue to exist as is (i.e., that the Facility would not be constructed) and no wetlands would be temporarily or permanently filled or dredged. This no action alternative would not affect current land use, ambient noise conditions, traffic or public road conditions, and would maintain the ecological resources, community character and socioeconomic conditions as they currently exist. It may also increase the potential for other types of development in the future if participating landowners decide to sell and/or develop their land. The no-action alternative would, however, deprive the state and region of a significant source of clean, pollutant-free energy and significant new revenue for host municipalities and landowners, all of which would be inconsistent with the CLCPA and State policy. It would also eliminate the benefits that the Facility would provide toward the State's efforts to combat climate change by decarbonizing the State's energy system.

6.0 IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATION

6.1 Avoidance and Minimization Measures

As stated above, a number of iterative changes were made to the Facility layout throughout the design process in order to avoid and minimize impacts to wetlands and streams. Please see Appendix F for a description of the iterative steps of Facility layout design and the impacts avoided or minimized by changes in design and loss of solar capacity. Extensive reviews of the Facility design and subsequent modifications were completed with specific priority given to the avoidance of wetland impacts. Based on the current Facility layout, all PV arrays as well as the collection substation, POI switchyard, and battery energy storage system have been designed to completely avoid impacts to wetlands. In addition, access roads and collection lines were shifted multiple times to avoid and minimize wetland impacts. However, some access roads and overhead collection lines will result in unavoidable impacts to wetlands and streams, as discussed in Section 4.0. The Applicant will implement site-specific measures to further avoid and minimize proposed wetland and stream impacts. This section provides details on specific impact minimization measures to WOTUS and other regulated features.

6.1.1 Pre-Construction Activities

Exact locations of proposed Facility components will be staked out in the field before construction commences. In accordance with the anticipated requirements of the 94-c Siting Permit for the Facility, the Applicant will provide funding for an Environmental Monitor to oversee Facility construction and restoration activities to ensure compliance with all applicable environmental protection measures included in the 94-c Siting Permit, this NWP Authorization, and other permit conditions. Prior to the start of construction at any given location, the Environmental Monitor and a representative of the construction contractor will conduct a walk-over of areas to be affected, or potentially affected, by proposed construction activities. This pre-construction walk-over will focus on sensitive resources to avoid (e.g., wetlands, streams, archaeological resources, agricultural resources, rare plant communities), as well as the limits of clearing, limits of disturbance, location of wetland and stream crossings, location of drainage features (e.g., culverts, ditches), location of underground utilities and tile drainage lines, and layout of erosion and sediment control measures. Upon identification of these features, they will be marked in the field with stakes, pin flags, and/or fencing. Other pre-construction activities include a baseline invasive species survey, which will be completed within six months of commencing construction-related earthmoving activities. The Applicant will then prepare and implement a site-specific Invasive Species Control and Management Plan (ISCMP) during construction and operation of the Facility in accordance with the 94-c regulations.

6.1.2 Implementation of SWPPP and SPDES General Permit

As mentioned previously, typical indirect impacts to wetlands resulting from Facility construction could include siltation and degradation of downstream water quality. However, construction related impacts to jurisdictional wetlands and streams will be avoided and minimized through implementation of a SWPPP in accordance with the Facility's State Pollutant Discharge Elimination System (SPDES) General Permit. Specific control measures are identified in the Project's Preliminary SWPPP (see Appendix B), and the location of these features will be indicated on construction drawings and reviewed by the contractor and other appropriate parties prior to construction. In addition, a soil erosion and sedimentation control plan has

been developed and will be implemented as part of the SPDES General Permit for the Project. The construction contractor will implement NYSDEC-approved best management practices (BMPs) for sediment and siltation control (e.g., silt fences, compost filter socks, temporary siltation basins, etc.). These controls would be installed and maintained throughout Project construction, as required until all construction and restoration activities are complete.

6.1.3 Environmental Compliance and Monitoring Plan

The Applicant will develop an Environmental Compliance and Monitoring Plan in accordance with the 94-c requirements and hire an independent, third-party environmental monitor to oversee compliance with environmental commitments and permit requirements in accordance with the 94-c USCs.

6.1.4 Invasive Species Control Measures

The Applicant will develop an ISCMP in accordance with the 94-c pre-construction compliance filings. The ISCMP plan will outline the control measures to be utilized during construction to avoid and minimize the spread of invasive species. Control measures will include construction materials inspection and sanitation, invasive species treatment and removal, and site restoration in accordance with the Facility's final approved SWPPP. The success of the ISCMP will be evaluated based on data collected as part of a post-construction monitoring program.

6.1.5 Inadvertent Return Plan

The Applicant is proposing the use of trenchless installation methods in 31 locations to further avoid and minimize impacts to wetlands and streams. These locations are shown in Figure 3. The Applicant will prepare a preliminary Inadvertent Return (IR) Plan for the Project prior to construction. The purpose of the plan is to minimize the potential for IRs, provide for timely detection of IRs, and to provide response and notification procedures. The Applicant will develop the Final IR Plan in accordance with the 94-c regulations and USACE requirements.

6.2 Compensatory Mitigation

As described in Section 4.0, impact estimates for the proposed Facility total 0.01 acre of temporary disturbance, 1.04 acres of permanent fill impact, and 0.31 acre of jurisdictional forest conversion within federal jurisdictional wetlands. Estimated impacts to streams include 0.001 acre (20 linear feet) of temporary impacts and 0.05 acre (499 linear feet) of permanent impacts. Combined, estimated permanent impacts to federal jurisdictional wetlands and streams total 1.4 acres, with no one single and complete project exceeding 0.5 acre.

Currently, there are no wetland mitigation banks that service the Chautauqua-Conneaut watershed (04120101). Therefore, to offset unavoidable impacts to federal jurisdictional wetlands and streams, as well as state-regulated wetlands and 100-foot RAAs, the Applicant will implement an on-site permittee-responsible mitigation site located within the Facility Site.

The objective of this mitigation site is to compensate for losses to federal and state wetland resources through creation, enhancement, and/or restoration. The following mitigation ratios have been applied to all proposed permanent federal jurisdictional wetland and stream impacts:

- 1:1 for permanent fill impacts to federally regulated emergent wetlands = 0.48 acres
- 1:1 for permanent fill impacts to federally regulated streams = 0.05 acres
- 1.5:1 for federally regulated scrub-shrub wetlands = 0.72 acres
- 3:1 for federally regulated forested wetlands = 1.18 acres

However, in accordance with Nationwide Permit General Condition #23 (Mitigation), compensatory mitigation is required for all wetland losses that exceed 0.10-acre and require PCN, and for all streambed losses that exceed 0.03-acre and require PCN, unless otherwise determined by the district engineer. For wetland and stream losses that do not meet these criteria, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Based on impact calculations presented in Tables 6 and 7, there are five single and complete wetland crossings that will require mitigation which collectively total 1.86 acres[1] of compensatory mitigation. None of the individual stream crossing impacts require PCN and are all well below the mitigation threshold of 0.03-acre, as detailed in Table 5. Therefore, in accordance with Nationwide Permit General Condition #23, the Applicant does not propose any stream mitigation under Section 404 of the CWA. The Applicant will continue coordination with USACE to confirm applicable mitigation requirements and ratios. The total compensatory mitigation acreage, as determined by USACE, will be detailed in a conceptual wetland and stream mitigation plan that will be submitted to USACE for review and approval.

With respect to mitigation for impacts to State jurisdictional wetlands and 100-foot RAAs, the Applicant is continuing to work with ORES staff to determine the appropriate extent and location of on-site mitigation activities. A draft Wetland Restoration and Mitigation Plan has been prepared based on the established mitigation thresholds in §900-2.15(g) of Section 94-c of the New York State Executive Law and in accordance with the draft Siting Permit anticipated to be issued by ORES. The proposed mitigation activities will be designed to satisfy the requirements of both Section 94-c of the NYS Executive Law and Section 404 of the Clean Water Act.

EDR and the Applicant have identified several potential parcels as suitable candidates for wetland restoration and creation activities. The specific details of on-site wetland mitigation will be provided in the form of a Final Wetland Restoration and Mitigation Plan submitted to ORES (as a pre-construction compliance filing pursuant to the 94-c regulations) and USACE prior to NWP authorization.

Each parcel will be reviewed further via a combination of desktop and field analysis to evaluate potential suitable mitigation sites. To assure compliance with state and federal mitigation requirements, the evaluation and site selection will be based on the following criteria:

[1] Anticipated compensatory mitigation for wetland impacts includes 0.33-acre of PEM wetland, 0.81-acre of PFO wetlands, and 0.72-acre of PSS wetlands.

- The site includes state-regulated wetlands and 100-foot RAAs (particularly PEM or PSS wetlands which may provide more availability for wetland mitigation opportunities than PFO wetlands);
- The site is adjoining or directly adjacent to the same state-regulated wetlands that are being impacted;
- The site is currently subject to anthropogenic disturbance (i.e., degraded state in need of restoration/enhancement);
- The existing wetland or 100-foot RAA can be enhanced without disturbing other existing sensitive resources (e.g., forest vegetation or agricultural practices);
- The site has suitable access for mitigation activities and subsequent monitoring;
- The landowner is agreeable to allowing mitigation activities and future conservation easements on their property;
- Construction logistics, costs, and technical requirements are all feasible; and
- The mitigation area will be ecologically sustainable and practical for long-term monitoring and maintenance.

While on-site mitigation is preferred, in the unlikely event that the Facility Site parcels are determined to be undesirable or not suitable for wetland mitigation sites, off-site mitigation may be explored within the same watershed.

7.0 COMPLIANCE WITH THE FEDERAL AND STATE ENDANGERED SPECIES ACTS

The United States Fish and Wildlife Service (USFWS) maintains the online database Information Planning and Conservation (IPaC) where users can request site-specific information for known occurrences of federally listed threatened, endangered, and candidate species listed under the Endangered Species Act. In November 2020, an official species list from USFWS was obtained to determine potential presence of federally-listed species in the Project area. The USFWS IPaC Official Species List identified the northern long-eared bat (NLEB, *Myotis septentrionalis*) as potentially occurring in the vicinity of the proposed Facility. Additionally, of note, the USFWS IPaC listed the bald eagle (*Haliaeetus leucocephalus*) as a migratory bird species protected under the Bald and Golden Eagle Protection Act (BGEPA) that could potentially occur within the vicinity of the Facility Site. A recent review of the USFWS IPaC (completed in February 2022) also identifies one candidate species, the Monarch butterfly (*Danaus plexippus*), as potentially occurring within the vicinity of the Facility Site.

7.1 Northern Long-eared Bat

The northern long-eared bat (NLEB) is currently listed as threatened, both federally and in New York State. The Project was reviewed under the IPaC Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule Consistency Determination Key on February 10, 2022. Based on the IPaC submission, it was determined that the proposed action is consistent with activities analyzed in the Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Exempted from Take Prohibitions. The proposed action may affect the NLEB; however, any incidental take that may occur as a result of the Project is not prohibited under the ESA Section 4(d) rule adopted for this species.

The New York Natural Heritage Program (NYNHP), NYSDEC staff, and ORES staff have indicated through consultations that there are no known NLEB maternity roost trees within 1.5 miles or NLEB winter hibernacula within 5 miles of the Facility Site. Therefore, based on the lack of known NLEB presence in the vicinity of the Facility, no take of the NLEB is anticipated. Furthermore, the Applicant will implement avoidance and minimization measures outline in the 94-c USCs. Please refer to Appendix G for a copy of agency correspondence.

7.2 Bald Eagles

Bald eagles were de-listed from the Federal ESA in 2007 but remain protected by the Bald and Golden Eagle Protection Act (BGEPA) (50 CFR 22.26). The BGEPA provides federal protection of bald and golden eagles by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds.

ORES concluded in a determination letter that there are no known bald eagle nests within the vicinity of the Facility. Subsequent correspondence with ORES (email correspondence dated March 23, 2021) identified two recently documented bald eagle nests that are located approximately 0.2 to 0.3 miles southwest of the proposed Facility. Due to the separating distance and the presence of a visual barrier between these nests and the nearest proposed Facility components, ORES concluded that the Project is not anticipated to adversely impact bald eagles. Construction and operation of the Facility will comply with the National Bald

Eagle Management Guidelines (USFWS, 2007) and the USCs of the 94-c regulations to avoid and minimize any potential impacts to bald eagles. Refer to Appendix G for a copy of agency correspondence.

8.0 COMPLIANCE WITH THE FEDERAL AND STATE HISTORIC PRESERVATION ACTS

Throughout the development of the Project, the Applicant has conducted cultural resources surveys and engaged in regular coordination with anticipated Section 106 Consulting Parties, including the New York State Office of Parks, Recreation and Historic Preservation (per their role as State Historic Preservation Office [SHPO]), Seneca Nation of Indians, Tonawanda Band of Seneca, and Tuscarora Nation, as summarized in Table 8.[2] At the time of filing this JAP, the Applicant has received one email response from the Seneca Nation of Indians on June 23, 2021, expressing interest to be included in Project consultation. The Applicant has not received any response from the Tonawanda Seneca Nation or the Tuscarora Nation as of this filing. The Applicant continued consultation with Seneca Nation of Indians, Tonawanda Band of Seneca, and Tuscarora Nation by sending periodic project updates and copies of cultural resource survey reports. In addition, the three Nations are contacts on the Project's Cultural Resources Information System page.

SHPO determined two historic properties within the Facility Site to be eligible for listing in the State and National Register of Historic Places (S/NRHP), including the Sawyer-Swezey-Kehlri Farm Complex and the South Ripley Cemetery. On October 15, 2021, SHPO issued a letter stating that the Facility will have No Adverse Impact on the two aforementioned S/NRHP-eligible resources provided that the Applicant follows the visual screening guidelines stated in the letter.

Additionally, on September 21, 2021, NYSHPO provided a letter stating that SHPO had no further archaeological concerns for the Facility. Subsequent to this determination, the New York Independent Systems Operator (NYISO) determined that additional interconnection facilities are needed for Facility interconnection onto the 230-kV electric grid which involved a minor modification to the Facility's POI and substation layout. The Applicant continued consultation with SHPO and provided a memorandum dated December 10, 2021 detailing the proposed layout changes and evaluating the potential impacts to cultural resources. On January 11, 2022, NYSHPO issued a letter stating that no S/NRHP-listed or eligible archaeological or historic resources would be adversely impacted by the proposed Facility layout change. A copy of the SHPO determinations is included in Appendix H.

[2] The Applicant has provided copies of all cultural resources reports to SHPO, including those referenced in Table 12; these reports can be provided upon request.

Table 8. Summary of Cultural Resources Correspondence for the South Ripley Solar Project

Date	Summary of Submittal/Correspondence
June 18, 2020	The Applicant initiated formal consultation with the NYSOPRHP/SHPO via the online Cultural Resources Information System (CRIS). This submission provided a description of the Project and its components, a location map, existing land uses, permitting information, and a proposed study methodology.
June 22, 2020	NYSOPRHP/SHPO responded to the initial request for consultation with concurrence of EDR's general approach to the Historic Resources Survey and requested that EDR submit Historic Resources Survey Methodology/Survey Work Plan and "define a Zone of Visual Influence".
June 24, 2020	SHPO/OPRHP initiated formal consultation with the Tonawanda Nation, Seneca Nation of Indians, Tuscarora Nation with a Project Introduction Letter and copies of the SHPO's response to the cultural resources reports submitted to date.
August 17, 2020	On behalf of the Applicant, EDR submitted the *Phase IA Historic Resources Survey Work Plan* to the NYSOPRHP via the CRIS website.
August 19, 2020	The NYSOPRHP responded to the *Phase IA Historic Resources Survey* via the CRIS website and concurred with the Historic Resources Survey methodology and APE proposed by APE.
January 22, 2021	On behalf of the Applicant, EDR submitted the *Phase IA Archaeological Survey* via the CRIS website.
February 8, 2021	The NYSOPRHP responded to the *Phase IA Archaeological Resources Survey* and concurred with the conclusions and Phase IB Survey recommendations.
February 22, 2021	Following completion of fieldwork, a *Historic Resources Survey Report*, summarizing the findings of the survey was submitted to the NYSOPRHP via the CRIS website.
March 19, 2021	The NYSOPRHP responded to the *Historic Resources Survey Report* stating: "Our Survey and National Register staff reviewed the architectural survey you submitted and two historic sites have been identified that are going to be visually impacted by the solar project. These are: 1.Sawer-Swezey-Kehrli Farm Complex 2. South Ripley Cemetery We will be reviewing the project for its potential visual impact on these two sites and we look forward to reviewing the facility site and facility components when they become available."
April 27, 2021	Following completion of fieldwork, a *Phase IB Archeological Survey Report,* summarizing the findings of the survey was submitted to the NYSOPRHP via the CRIS website.
May 26, 2021	The NYSOPRHP responded to the Phase IB Archaeological Survey Report with a request for additional surveys and the submission of a Phase IB Addendum Report.
June 9, 2021	EDR submitted a Supplemental Phase IB Archaeological Survey Research Design to NYSOPRHP for review and comment via the CRIS website.
June 10, 2021	The NYSOPRHP responded to the Phase IB Revised Scope with concurrence on the proposed methodology.
June 15, 2021	On behalf of the Applicant, EDR provided a letter to the Tonawanda Nation, Seneca Nation of Indians, and Tuscarora Nation including an overview of the cultural resource surveys conducted to date as well as copies of NYSOPRHP correspondence.
June 23, 2021	The Seneca Nations of Indians responded to the Applicant's Cultural Resource Survey Overview via email correspondence and expressed interest to be included in Project consultation.

Date	Summary of Submittal/Correspondence
July 28, 2021	On behalf of the Applicant, EDR provided letters with an update on the status of ongoing cultural resource surveys to the Tonawanda Nation, Seneca Nation of Indians, and Tuscarora Nation.
August 12, 2021	The Applicant submitted a copy of the Application for a Permit to operate a Major Renewable Energy Facility pursuant to Section 94-c of the New York State Executive Law and Title 19 of NYCRR, Part 900 for the South Ripley Solar Project to NYSOPRHP via the CRIS website.
August 12, 2021	On behalf of the Applicant, EDR submitted a copy of the Visual Impact Assessment conducted in support of the 94-c Siting Permit Application to NYSOPRHP via the CRIS website.
September 2, 2021	EDR submitted revised Phase IB Addendum figures to the CRIS website per a NYSOPRHP request.
September 17, 2021	On behalf of the Applicant, EDR submitted a Visual Impacts memorandum to NYSOPRHP via CRIS. This memorandum was prepared to address the NYSOPRHP's September 16, 2021 inquiry regarding visibility and visual impact determinations for the Sawer-Swezey-Kehrli Farm Complex (NYSHPO USN01322.000104; hereafter, Farm Complex). The memorandum incudes additional clarifying points, viewshed maps, and a line of sight analysis at the farm complex.
September 21, 2021	The NYSOPRHP responded to the Phase IB and Phase IB Addendum Survey Reports and stated: "OPRHP has determined that all fifteen (15) sites are not eligible for inclusion in the State and National Registers of Historic Places, and thus no further archaeological investigations are warranted. OPRHP has no further archaeological concerns for this project. Should project designs change, including an expansion of the proposed project, OPRHP recommends further consultation with our office."
October 15, 2021	The NYSOPRHP responded to the Historic Resources Survey, Visual Impacts Assessment, and Visual Impacts memorandum and concluded that: "It is the opinion of OPRHP that the project will have No Adverse Impact on the Sawer-Swezey-Kehrli Farm Complex and the South Ripley Cemetery or any other historic resources on the following conditions: 1. The vegetative buffers that you have proposed follow the guidelines below: A. It is located on the solar project property and the solar project owner is responsible for it. B. It consists of a mixture of indigenous coniferous and deciduous trees and shrubs that are staggered, not in straight rows. C. The trees are balled and burlapped and have a 4-inch caliper unless otherwise specified by a tree specialist."
December 10, 2021	On behalf of the Applicant, EDR submitted a memorandum detailing the POI Layout redesign to the CRIS website.
January 11, 2022	The NYSOPRHP responded with a finding of no adverse impact of the Facility Layout change to historic or archaeological resources.

9.0 REFERENCES

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army.

New York State Energy Planning Board. 2015. 2015 New York State Energy Plan, amended in 2020. Available online at: https://energyplan.ny.gov/

New York State Department of Environmental Conservation (NYSDEC). 2017. New Record Established for New York's Breeding Bald Eagles. Released July 3, 2017. Available online at: http://www.dec.ny.gov/press/110637.html.

United States Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North central and Northeastern Region*.

United States Fish & Wildlife Service (USFWS). 2021. IPaC Information for Planning and Consultation. Available online at: https://ecos.fws.gov/ipac/. Accessed September 2021.