



SOMERSET SOLAR, LLC

MATTER NO. 22-00026

§900-2.15 Exhibit 14

Wetlands

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ACRONYM LIST

%	percent
§	Section
AC	alternating current
AES	The AES Corporation, Inc.
AJD	Approved Jurisdictional Determination
CWA	Clean Water Act
DC	direct current
LOD	limit of disturbance
NWI	National Wetlands Inventory
NWP	Nationwide Permit
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
ORES	Office of Renewable Energy Siting
PEM	palustrine emergent
PFO	palustrine forested
PJD	Preliminary Jurisdictional Determination
PV	photovoltaic
PSS	palustrine scrub-shrub
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USCs	uniform standards and conditions
USFWS	United States Fish and Wildlife Service
WRMP	Wetland Restoration and Mitigation Plan

GLOSSARY TERMS

Applicant	Somerset Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), the entity seeking a siting permit for the Facility Site from the Office of Renewable Energy Siting (ORES) under Section (§) 94-c of the New York State Executive Law.
Application	Application under §94-c of the New York State Executive Law for review by the ORES for a Siting Permit.
Facility	The proposed components to be constructed for the collection and distribution of energy for the Somerset Solar Facility, which includes solar arrays, inverters, electric collection lines, and the collection substation.
Facility Site	The limit of disturbance (LOD) that will be utilized for construction and operation of the Facility, which totals about 696 acres on the Project Parcels in the Town of Somerset, Niagara County, New York (Figure 2-1).
Project Parcels	The parcels that are currently under agreement with the Applicant and Landowner, totaling about 1,784 acres in the Town of Somerset, Niagara County, New York, on which the Facility Site will be sited (Figure 3-1).
Project Site	The acreage of the Project Parcels under agreement between the Applicant and the Landowner, consisting of approximately 1,396 acres, in which the Applicant has performed diligence, surveys and assessments in support of Facility design and layout.

EXHIBIT 14 Wetlands

This exhibit addresses the requirements specified in 19 New York Codes, Rules and Regulations (NYCRR) Section (§) 900-2.15 regarding wetlands.

Tetra Tech, Inc. delineated a total of 43 wetlands within the Project Site. The Facility design process used information from the wetland and waterbody delineation to place components where they would avoid and/or minimize wetland activity within New York State- (NYS-) jurisdictional wetlands and their 100-foot adjacent areas wherever possible. Siting of the Facility infrastructure has included avoidance of wetlands to the greatest extent practicable, such that activity within NYS and United States Army Corps of Engineers- (USACE-) jurisdictional wetlands have been limited to approximately 0.05 acre. A Preliminary Jurisdictional Determination (PJD) and Approved Jurisdictional Determination (AJD) received from USACE for wetlands under their jurisdiction was received on March 2, 2023. As there are major activity proposed within a NYS-jurisdictional wetland, a Wetland Restoration and Mitigation Plan (WRMP)¹ has been developed in accordance with §900-2.15(g) to mitigate for the approximately 0.05 acre of major activity within NYS-jurisdictional Wetland WA-5 (Appendix 14-C). Due to the minimal amount of impacts to USACE-jurisdictional wetlands (0.05 acre), no compensatory federal mitigation is required. This Conceptual WRMP details wetland mitigation proposed within the Facility Site, which is intended to create wetland habitat, reduce the presence of invasive species, and increase wetland biodiversity. The Applicant will provide the full wetland mitigation plan as a pre-construction compliance filing after further consultation with Office of Renewable Energy Siting (ORES) and New York State Department of Environmental Conservation (NYSDEC). Additionally, the Applicant intends on planting an appropriate native or naturalized wetland vegetation plant mix that includes local species to ensure impacts to wetlands are minimal. The Facility has been designed to comply with the Uniform Standards and Conditions (USCs) and activity within NYS-regulated wetlands have been avoided and minimized to the maximum extent practicable.

14(a) Map Depicting Wetland Boundaries

Figure 14-1 shows the wetlands delineated within the approximately 696-acre Project Site and 100 foot boundary, as well as wetlands delineated within the limit of disturbance (LOD or Facility

¹ For consistency and to align with the Office of Renewable Energy and Siting Section 94-c regulations terminology, the Applicant is referring to the wetland mitigation plan as the Wetland Restoration and Mitigation Plan (WRMP); however, to address wetland mitigation requirements the Applicant is proposing wetland creation.

Site) and 100 feet of the Facility Site. Each of the delineated wetlands includes a Cowardin wetland classification (Cowardin et. al., 1979), which defines wetlands based on chemical and physical characteristics. The wetland delineation map is broken down into three areas: the Project Site (the largest of all three areas), the Facility Site, and the 100-foot buffer from the Facility Site boundary. The acreage of NYS-jurisdictional wetlands, regulated adjacent areas within 100 feet of NYS-jurisdictional wetlands (regulated adjacent areas), and USACE-jurisdictional wetlands for both the Facility Site and the 100-foot buffer from the Facility Site boundary are listed below.

Project Site:

- A total of 43 wetlands representing approximately 272.27 acres were delineated.

Facility Site:

- A total of 0.61 acre of NYS-jurisdictional wetlands.
- A total of 15.14 acres of regulated adjacent areas (within 100 feet of NYS-jurisdictional wetlands).
- A total of 4.03 acres of USACE-jurisdictional wetlands.

100-foot Buffer from the Facility Site Boundary:

- A total of 12.18 acres of NYS-jurisdictional wetlands.
- A total of 28.01 acres of regulated adjacent areas.
- A total of 10.13 acres of USACE-jurisdictional wetlands.

Appendix 13-C includes a copy of the jurisdictional determination received from the ORES for the NYS-jurisdictional wetlands located within the Project Site. ORES determined that 11 wetlands within the Project Site (Wetland WA-3A, WA-3B, WA-5, WA-7, WA-12, WB-13, WB-18, WB-19, WB-20A, WB-20B, and WB-25) totaling 238.95 acres would be considered NYS-jurisdictional based on the size of the wetland and adjoining wetlands likely exceeding the 12.4-acre threshold. An estimated 0.61 acres of NYS-jurisdictional wetlands and 15.14 acres of regulated adjacent area occur within the Facility Site (Figure 14-1).

Appendix 5-A, Sheets PV-C.02.01–PV-C.02.10 depict the wetlands and activity areas in relation to proposed construction activities within the Facility Site.

14(b) Wetland Delineation Survey Reports

A copy of the wetland delineation reports and additional wetland memo submitted to ORES and USACE are included as Appendix 14-A. A total of 43 wetlands representing approximately 272.27

acres were delineated within the Project Site. The following provides a brief overview of the methodology used and results.

The wetland delineation included a combination of desktop and field assessment. Publicly available desktop data was compiled including: the United States and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2018); NYS Regulatory Freshwater Wetlands from Cornell University Geospatial Information Repository (CUGIR 2013); and the National Hydrology Dataset from the United States Geological Survey (USGS 2023).

Wetland boundaries were delineated in the field using the Routine Onsite Determination Method, as described in the USACE Wetlands Delineation Manual (USACE 1987), together with region-specific methods and guidelines provided in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (USACE 2012). In addition, the Routine Delineation Procedure, as described in the NYS Freshwater Wetlands Delineation Manual (Browne et al., 1995) was also considered. These methods incorporate a three-parameter approach using vegetation, soils, and hydrology to identify the presence of freshwater wetlands.

The presence or absence of wetlands was field-verified by analyzing dominant vegetation, soil classification, and hydrology using at least one sample station within each investigated area. Under the NYS method, the presence of hydrophytic vegetation characteristics (i.e., greater than 50 percent (%) facultative wet or wetter species, 10% or greater areal cover of obligate perennial species, morphological adaptations, or expanses of peat mosses over persistently saturated soils) are typically indicative of a wetland, and an area that exhibits these indicators can generally be considered a wetland without detailed examination of hydrology and/or soils.

Dominant vegetation in each stratum (tree, shrub, herbaceous, and vine) was identified using appropriate regional field guides. Wetland indicator statuses for dominant species were obtained from the USACE National Wetland Plant List (2018). Wetlands were classified based on the USFWS NWI classification hierarchy (Cowardin et al., 1979). Classifications were assigned by determining the most abundant type classification(s) in the wetland. A wetland was assigned multiple type classifications if more than one class comprised at least 30% aerial coverage. Soil borings were obtained by using a hand-held auger, which was advanced to a depth of 20 inches when possible. Soil profiles/characteristics were recorded in standard soil log format and soil colors were determined by using a Munsell Soil Color Chart (Kollmorgen Corporation, 2009). Primary and secondary wetland hydrology indicators were also visually assessed and recorded. Wetland boundary points and sample stations, and stream centerlines were recorded using an

Eos Arrow 100© handheld Global Positioning System combined with an Apple iPad©. This unit generally provides sub-meter accuracy. Nomenclature for field delineated wetlands and streams consisted of an alphanumeric code, which identified the feature (“W” for wetland and “S” for stream) followed by sequential numbers that identified the individual feature (i.e., W-01 through W-38 and S-01 through S-06). Supporting wetland sample stations were assigned the same name as the wetland identifier (i.e., W-01). The suffix “UP” was added to indicate the corresponding upland sample station (i.e., W-01-UP).

The following describes the three main Cowardin community types of wetlands observed on the Project Site.

Palustrine Emergent (PEM)

Palustrine emergent (PEM) include wetlands characterized by erect, rooted, herbaceous hydrophytes (i.e., aquatic plants), excluding mosses and lichens (Cowardin et al 1979). In the Project Site, the majority of delineated wetlands identified in agricultural fields were (at least partially) of this class, as were several delineated wetlands located near the edge of the survey area and in roadside drainage ditches. Vegetation was largely absent in wetlands delineated in active agricultural fields (except for crops being grown) but included common reed (*Phragmites australis*) and reed canary grass (*Phalaris arundinacea*) in uncultivated areas. Many of these areas have been subject to existing and historic agricultural or construction disturbances, which results in limited function and values of the wetland complex (Appendix 14-B).

Palustrine Scrub-Shrub (PSS)

Palustrine scrub-shrub (PSS) wetlands include wetland areas dominated by woody vegetation less than 20 feet tall (Cowardin et al 1979). In the Project Site, several PSS delineated wetlands were identified in uncultivated areas adjacent to active agricultural fields as well as in the floodplain edges of streams or successional growth areas. Dominant species were various dogwoods (*Cornus* spp.), grey alder (*Alnus incana*), and pussy willow (*Salix discolor*), along with sensitive fern (*Onoclea sensibilis*), giant goldenrod (*Solidago gigantea*), and reed canary grass.

Palustrine Forested (PFO)

Palustrine forested (PFO) wetlands are dominated by woody vegetation that is at least 20 feet tall (Cowardin et al. 1979). The majority of the PFO wetlands were identified in the vicinity of the former railroad line located in the southwest portion of the Project Site and were avoided in the design of the Facility. Dominant vegetation included red maple (*Acer rubrum*), box elder (*Acer negundo*), black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanica*), and eastern cottonwood

(*Populus deltoides*), with an understory of dogwoods or open understory with limited hydrophytic herbaceous species.

14(c) Qualitative and Descriptive Wetland Functional Assessment

The Applicant utilized the *USACE Highway Methodology Workbook Supplement: Wetland Functions and Values – A Descriptive Approach* (Highway Methodology Supplement) (USACE 1999) to determine the qualitative functions of wetlands within the Facility Site. Functions relate to the ecological significance of wetlands, often as beneficial services that wetlands provide to the greater ecosystem or watershed. The approach includes a combination of desktop review and field data review based on the site visits. Aerial photography, NWI and NYSDEC datasets were reviewed to determine potential offsite connectivity to delineated features on the Project Site.

The Highway Methodology identifies eight different wetland functions and five different values. These include:

Functions

- Groundwater recharge/discharge – potential for wetland to act as source of groundwater recharge (potential for wetland to contribute water to underlying aquifer) and/or discharge (potential for wetland to act as source of groundwater transfer to the surface, i.e., springs and hillside seeps).
- Floodflow alteration – effectiveness of wetland in reducing flood damage by containing an enhanced ability to store floodwaters for an extended period following heavy precipitation events.
- Fish and shellfish habitat (freshwater and marine) – wetland’s ability to contain or influence suitable habitats for fish and shellfish species.
- Sediment/toxicant/pathogen retention – ability of wetland to hinder degradation of water qualities downstream, as it relates to effectiveness of wetland as a trap for sediments, toxicants, or pathogens based on its geomorphic position, connectivity, soil thickness, and other physical characteristics.
- Nutrient removal/retention/transformation – wetlands having ability to prevent excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.
- Production export - wetland’s ability to produce food or usable products for organisms, including humans, within the trophic levels associated with the watershed.

- Sediment/shoreline stabilization – wetland’s ability to effectively stabilize streambanks and shorelines against future erosion events.
- Wildlife habitat - effectiveness of wetland to provide habitat for various types and populations of animals typically associated with wetlands and their habitat for various types and populations of animals typically associated with wetlands and their periphery. Resident and migrating species considered along with the potential for any NYS or federally listed species as occurring within the target wetland.

Values

- Recreation – value indicates if wetland is effective in providing or assisting in establishment of recreational opportunities, such as boating, fishing, hunting, and other leisurely pursuits. Recreation in this capacity includes both consumptive (consumes or diminishes plants, animals, or other resources that are naturally located in the wetland) and non-consumptive (does not consume or diminish plants, animals, or other resources that are naturally located in the wetland) activities.
- Educational/scientific – value considers effectiveness of wetland as a site for public education or as a location for scientific research.
- Uniqueness/heritage – value applies to wetlands that contain a singular or rare quality. Special qualities may include the wetland’s history and the presence of archaeological sites; historical events which may have taken place at the wetland; or unique plants, animals, or geologic features located within, or supported by, the wetland feature.
- Visual quality/aesthetics – value relates to visual and aesthetic qualities of the wetland.
- Endangered species habitat – value related to the effectiveness of the wetland or associated waterbodies to specifically support threatened or endangered species.

These wetland functions and values were determined utilizing a list of considerations identified in the Highway Methodology Supplement. Tetra Tech, Inc. reviewed these considerations along with wetland delineation data and publicly available datasets to determine the functions of wetlands identified within the Facility Site.

Highway Methodology Supplement Functional Assessment Forms for proposed impacted wetlands are presented in Appendix 14-B. The wetlands assessed include wetlands WA-5, WB-1, WB-2, WB-3, WB-4, WB-5, WB-6, WB-7, WB-8, WB-9, WB-10, WB-11, WB-12, WB-14, WB-15, WB-16, WB-17, WB-18, and WB-25. Wetlands WB-10 and WB-11 as well as WB-15 and WB-16 are addressed on the same form due to connectivity. Based on this assessment, the two

primary functions observed within the Project Site include: floodflow alteration and wildlife habitat. Floodflow alteration considers the effectiveness of the wetland in reducing flooding by attenuating floodwaters during prolonged rain events or snow melt. The wildlife habitat function considers the effectiveness of the wetland to provide habitat for various wildlife species.

In general, the isolated PEM wetlands (Wetlands WB-1 through WB-9, WB-12 and WB-17) within the Facility Site were found to provide low value to the larger landscape, while still providing several key functions including floodflow alteration and wildlife habitat. These PEM wetlands mainly include vegetative drainage ditches and areas of concave landscape associated with agricultural fields and uses (WB-5 through WB-9, WB-12 and WB-17) and in upland forest areas (WB-1 through WB-4). These areas do not provide recreational, educational, uniqueness/heritage, visual/quality/aesthetics, or endangered species habitat. Though their principal functions are floodflow alteration and wildlife habitat, they have seasonal limitations. These wetlands have seasonal periods of wetland hydrology, dependent on times of high precipitation to retain and/or transport water. Vegetation consists of forbs and grasses that are present during certain times of year, and generally do not persist to provide habitat or food sources during fall or winter months. Although classified as potentially suitable for the functions of floodflow alteration and wildlife habitat, their assessed quality generally was “Fair” or “Poor”.

The PFO wetland complexes with sections of PSS or PEM wetlands (Wetlands WA-5, WB-13, WB-10, WB-11, WB-14 through WB-18, and WB-25), are located in lower-lying drainages not subject to active agricultural use and are generally of slightly higher quality, providing more value and greater functions to the larger landscape resulting in Fair, Good, and Excellent quality assessments. The majority of these wetlands are generally undisturbed with their adjacent areas disturbed through development. These disturbances included development of the agricultural fields, public roads and residential homes with landscaped lawns (Wetlands WB-14, WB-15, WB-16, WB-18 and WB-25). Wetlands WA-5, WB-10 and WB-11 have evidence of being formerly used for agriculture, showing successional growth of hydrophytic vegetation and inundated areas formerly used for drainage features. These PFO wetland complexes were found to be primarily suitable for floodflow alteration, sediment/toxicant retention, nutrient removal, sediment/shoreline stabilization, wildlife habitat, and uniqueness/heritage. These wetlands also have deep soils and are located downslope from gradually sloped and flat areas. The wetland hydroperiod is expected to be nearly year-round and sourced from surface runoff and groundwater and is expected to be at a low risk of seasonal variations. The described PFO wetland complexes exhibit several cover types with multiple habitats that can persist throughout the seasons. Persisting vegetation

includes forested area, successional shrub areas, and sparsely vegetated emergent areas. The wetlands provide sediment retention and nutrient removal functions for the chemical and nutrient runoff from adjacent active agricultural fields and paved roads.

14(d) Off-Site Wetlands Hydrological and Ecological Influence

There are 21 wetlands located within 100-feet of the Facility Site, 9 of which are considered NYS-jurisdictional wetlands (Wetlands WA-3A, WA-3B, WA-5, WA-12, WB-13, WB-18, WB-19, WB-20A, and WB-25). These NYS-jurisdictional wetlands total 12.18 acres. There are no negative effects or increased runoff expected to off-site wetlands due to the design of stormwater controls and measures identified in the Stormwater Pollution Prevention Plan (SWPPP) provided as Appendix 13-B. The Facility will be designed to meet NYSDEC stormwater control requirements and includes use of a portion of the existing stormwater basins associated within the former coal plant, Somerset Station, as well as implementing additional controls including grassed filter strips.

The ecological influence of agricultural activities currently present include excess nutrients, pesticides, and sediment entering into wetlands located adjacent to agricultural areas which can cause fluctuations and imbalances of nutrients in these habitats. The Facility will shift land management from agricultural activities to solar energy production which is expected to have little to no influence on the ecology of the adjacent wetlands. Furthermore, best management practices such as stormwater controls used during construction and stabilization of disturbed lands will prevent erosion or release of sediment to off-site wetlands that could adversely affect ecology of off-site wetlands. Over time wetland ecology also is expected to improve due to the lack of pesticides, fertilizers or excess sediment sources entering the off-site wetlands currently influenced by agriculture and industrial activities.

14(e) Avoidance of Impacts on NYS Wetlands and Adjacent Areas

Applicant has designed the Facility to avoid areas of NYS-jurisdictional wetlands delineated within the Facility Site and the regulated adjacent areas located within 100 feet from these wetlands to the maximum extent practicable. The wetlands avoided include large, linear Wetlands WA-7 and WB-19 located in the southwestern Project Site along the former railroad track, the wetland complexes located in the eastern portion of the Project Site (Wetlands WA-2, WA-3A, WA-3B, WB-20A, and WB-20B), and the majority of Wetlands WA-5 and WA-12 located in the southeastern portion of the Project Site. Additional design considerations include siting solar panel arrays, inverters, and fencing outside of NYS-jurisdictional wetlands.. To avoid activity within wetlands, the Facility Site uses previously disturbed areas for component placement, fencing, paved access roads, and the Somerset Collector Substation, including those in

agricultural use, and those associated with the former coal plant and a capped landfill (Solid Waste Disposal Area II) to the extent practicable. Access roads were sited to avoid and minimize activity within NYS-jurisdictional wetlands to the maximum extent practicable, with the exception of a 0.05-acre area needed to access areas of development.

To prevent disturbance to avoided wetlands that are located within the LOD during construction, these wetlands will have their boundaries flagged and erosion and sediment control best management practices such as silt fence or compost filter socks placed around them to prevent disturbance to the wetlands and their associated vegetation. In instances where complete avoidance of a wetland was not feasible, the Facility design limits activity within NYS-jurisdictional wetlands, with activities limited to those allowed within wetlands classified as Unmapped >12.4 acres. Due to these careful design considerations, major activity within a NYS-jurisdictional wetland requiring mitigation are limited to 0.05-acre for construction of an access road in the southeast part of the Facility Site, within Area 6 (Appendix 5-A Sheet PV-C.02.06). Design features that further minimized the amount of major activities proposed to occur within to Wetland WA-5 from the construction of the access road include curving the road to avoid as much of the wetland as possible, siting the crossing at the narrowest part of the wetland (which also includes the portion of the wetland that has been subject to the highest level of past disturbance), and installing multiple culverts at the road crossing to maintain hydrologic connectivity to the maximum extent practicable.

14(f) Minimization of Impacts on NYS Wetlands and Adjacent Areas

(1) Limitations for Avoidance

The Facility has been designed to largely avoid activity within NYS-jurisdictional wetlands and their associated adjacent areas. Activity within NYS-jurisdictional wetlands and the regulated adjacent areas that are considered unavoidable are associated with placement of necessary Facility components within the confines of the Facility Site, including tree/shrub clearing and grubbing for placement of Facility infrastructure and preventing shading of the solar array panels, placement of PV array racking, and construction of unpaved access roads. NYS-jurisdictional wetlands and regulated adjacent areas activity are described in Table 14-1 and Table 14-2, respectively; and are detailed in Figure 14-2.

(2) Minimization Measures

The Applicant has taken an iterative design approach to, by and large, avoid wetlands within the Facility Site through project design changes. A more compact project improves economics, and it is in the best interest of the developer to maximize utilization of available land and minimize “orphan areas” within the fence-line since those areas are leased for the Facility. However, invariably, a number of constraints emerged in the design process which left open areas of land without panels that might otherwise appear usable. Environmental constraints, such as the location of larger wetland complexes, potential cultural impacts, and habitat impacts were initial constraints identified for location of components. On a more “micro” level, additional constraints that must be considered include:

1. Technical Feasibility and Fixed String Length – Single axis tracking hardware has emerged as the most cost competitive technology (as opposed to fixed tilt) for PV panels. Panels are not “plug and play” in small segments. “Trackers” come in fixed string lengths and anticipated module designs for this Facility have fixed those lengths at approximately 215 and 319 feet in those areas where single axis trackers are proposed, as shown in the design plans provided in Appendix 5-B. Consequently, if there is an area that has space for a 300-foot single axis tracker, it must be truncated to 215-feet, and if there is an area with space for a 200-foot single axis tracker, that tracker must be dropped entirely. The result is that while a developer will seek to maximize land utilization, a panel layout will often have a jagged saw tooth edge, often resulting in the presence of open areas having a triangular shape without panels. There are similar space considerations for fixed tilt racking as well. The fixed tilt racks have lengths at approximately 99 feet and 49 feet.
2. Shading – Trees with considerable canopy height can cast shadows on panels limiting their energy capture. Typically, panels would be set back from tree lines at least two times canopy height to avoid or minimize shading losses.
3. Setbacks – The Applicant had to adhere to various setbacks required by §94-c or local ordinances, or to address specific landowner concerns or preferences. Section 94-c has several requirements that dictate setbacks to roads, property lines, and whether adjacent areas are participating or non-participating properties. Those may not be evident simply by looking at panel layouts at a micro level, but the broader design must accommodate those setback requirements.

4. Inverter Size – Panels in an array are collected as Direct Current (DC) and then aggregated at an inverter and converted to Alternating Current (AC). Inverters come in various sizes, but they are step functions and not a continuous range of sizes. There can be instances where usable areas to install panels exceeds the capacity of the nearby inverter and it is not practical to increase the size of the inverter for a marginal increase in panel count. Similarly, there can be areas that are not large enough to support an inverter on their own. In either case, this can result in residual locations of land without panels.
5. Laydown, Temporary Construction, and Stormwater Control Areas – The Facility development area requires laydown and temporary construction areas, which were sited in suitable areas to avoid wetlands and other sensitive areas. Additionally, some open space areas were utilized to incorporate the stormwater retention, detention and control features that will ensure protection of water quality of surface waters (wetlands and streams) both on and off the Facility Site.

The Applicant considered all plausible alternative routing and siting options for NYS-jurisdictional wetland crossings, utilizing narrow crossing locations and existing crossings wherever possible. All alternatives regarding Facility design were examined and the current design incorporates these alternatives. There are some areas that will require selective tree/shrub cutting to prevent shading of panels, which will not involve clear cutting of forested wetland or grubbing. In areas of selective tree/shrub cutting, vegetation will be cut with hand tools. If removal of cut trees/shrubs from the wetland area requires vehicles or machine use, timber mats will be placed down to avoid impacting the wetland. Impacts within the LOD and from temporary laydown of materials have been maximized to occur within previously disturbed areas of the former coal plant and in agricultural areas that have historically been disturbed from routine farming activities. Activity within NYS-jurisdictional wetlands have been minimized through careful design and study of the Facility Site, and are limited to approximately 0.05 acre within the 696-acre Facility Site, with additional design features added to minimize activity in this area, such as curving the proposed access road in the southeast part of the Facility Site within Area 6 (Appendix 5-A Sheet PV-C.02.06) to avoid as much of the wetland as possible, crossing the wetland at its narrowest point (which also includes the portion of the wetland that has been subject to the highest level of past disturbance), and installation of a culvert system that will maintain the hydrologic connectivity to portions of wetland WA-5 located outside the activity area. Wetlands within the Facility Site will have their boundaries flagged and erosion and sedimentation controls placed to prevent impact during the construction period.

(3) Wetland Function Considerations in Design and Siting

The Facility was designed and sited to minimize activity within NYS-jurisdictional wetlands based on the functions and values of the wetlands. There are approximately 0.05 acre of unavoidable major activity within Wetland WA-5, associated with the unpaved access road section in the southeast of the Facility Site that is required to provide access to construct Facility components within Area 6. This major activity will result in wetland fill and prevent the growth of wetland vegetation where the road crossing is located. In addition, there will be minor activities associated with selective tree/shrub cutting and grading and manipulation of disturbed areas within NYS-jurisdictional adjacent areas of Wetlands WB-18, WA-5, and WA-12 which have portions located within an agricultural field. Selective tree/shrub cutting does not include stump removal or associated ground disturbances, and overall impacts to these wetlands are expected to recover through successional regrowth during post-construction. Careful siting of the Facility has avoided and minimized activity within NYS-jurisdictional wetland resources, with major activity limited to approximately 0.05 acre (Table 14-1). For NYS-regulated adjacent areas, approximately 3.96 acres of major activity, approximately 0.56 acres of intermediate activity, and approximately 10.87 acres of minor activity are expected from the Facility (Table 14-2).

(4) Wetland Function in Adjacent Areas

The remaining unimpacted NYS-regulated adjacent areas are developed, currently used for agriculture, or consist of undisturbed forest area. Following Facility construction, the agricultural areas within the Facility Site will be converted from conventional agricultural land to successional herbaceous plant communities following the revegetation and establishment of meadow habitat within the PV array areas. This shift from conventional agriculture to meadow habitat is considered beneficial to the functions and values of the adjacent areas, as it is expected to result in a reduction in fertilizer and pesticide input and plowing of the land, thereby minimizing the potential for pesticides, fertilizers and sediment to travel downslope through runoff and enter sensitive wetland communities. Additionally, the meadow habitat will provide year-round ground cover to prevent sedimentation in NYS-jurisdictional wetlands. The Facility will implement storm water control practices during construction and operation through installation of grassed filter strips, reuse of stormwater detention basins, and other stormwater best management practices outlined in the SWPPP that will further reduce potential impacts from nutrient and sedimentation inputs from areas surrounding the NYS-jurisdictional wetlands (Appendix 13-B). These reductions in nutrient and sedimentation transport are anticipated to improve the function and value of these NYS-jurisdictional wetlands by stabilizing the ground, minimizing erosion, increasing biodiversity

and wildlife habitat, and restoring the land post-construction. This also will improve the ecological richness and vegetative cover density leading to an increase in the various functions and values associated with activity within NYS-regulated adjacent areas.

Table 14-1 shows the major activity proposed within NYS-jurisdictional wetlands (totaling approximately 0.05 acre) due to construction of a section of unpaved access road.

Table 14-1. Activity within NYS-Jurisdictional Wetlands within the Facility Site.

Wetland Identification	Cowardin Classification ¹	Office of Renewable Energy Siting (ORES/NYS) Status	Feature/Activity	Activity Acreage
Major Activity				
WA-5	PFO	Unmapped >12.4 acres	Access Road	0.05
Total ORES/NYS Wetland Activity				0.05

1 – Definitions: PFO – palustrine forested.

Table 14-2 shows the activity within NYS-regulated adjacent areas within the Facility Site (totaling approximately 15.39 acres) due to solar panel/PV array racking, clearing of forest, access roads, clearing and manipulation of undisturbed herbaceous vegetation, and grading and manipulation of disturbed area. Wetland activity by type is detailed for wetland features in Figure 14-2.

Table 14-2. Facility Site Activity within State-Regulated Adjacent Areas.

Wetland Identification	Cowardin Classification ¹	Office of Renewable Energy Siting (ORES/NYS) Status	Feature/Activity ²	Activity Acreage
Major Activity				
WA-3A	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.01
WA-3B	PFO	Unmapped >12.4 acres	Solar panels	0.19
WA-5	PFO	Unmapped >12.4 acres	Clearing of forest	0.33
WA-5	PFO	Unmapped >12.4 acres	Access roads	0.45
WA-5	PFO	Unmapped >12.4 acres	Solar panels	0.01
WA-5	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.09

Wetland Identification	Cowardin Classification ¹	Office of Renewable Energy Siting (ORES/NYS) Status	Feature/Activity ²	Activity Acreage
WA-12	PFO	Unmapped >12.4 acres	Access roads	0.15
WA-12	PFO	Unmapped >12.4 acres	Solar panels	0.10
WA-12	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.01
WB-18	PFO	Unmapped >12.4 acres	Access roads	0.52
WB-18	PFO	Unmapped >12.4 acres	Clearing of forest	0.03
WB-18	PEM	Unmapped >12.4 acres	Solar panels	0.73
WB-18	PSS	Unmapped >12.4 acres	Solar panels	0.62
WB-18	PFO	Unmapped >12.4 acres	Solar panels	0.06
WB-18	PSS	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.12
WB-18	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.04
WB-19	PFO	Unmapped >12.4 acres	Access roads	0.04
WB-19	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.03
WB-20A	PFO	Unmapped >12.4 acres	Clearing of forest	0.05
WB-20A	PFO	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.01
WB-25	PEM	Unmapped >12.4 acres	Clearing of forest	0.33
WB-25	PEM	Unmapped >12.4 acres	Power interconnections (including clearing for interconnections)	0.04
Intermediate Activity				
WA-5	PFO	Unmapped >12.4 acres	Clearing and manipulation of undisturbed herbaceous vegetation	0.30
WA-12	PFO	Unmapped >12.4 acres	Clearing and manipulation of undisturbed herbaceous vegetation	0.26
Minor Activity				
WA-3A	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.05
WA-3B	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.35

Wetland Identification	Cowardin Classification ¹	Office of Renewable Energy Siting (ORES/NYS) Status	Feature/Activity ²	Activity Acreage
WA-5	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.93
WA-12	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.81
WB-13	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	1.18
WB-13	PFO	Unmapped >12.4 acres	Selective tree/shrub cutting	2.04
WB-18	PEM	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	1.65
WB-18	PSS	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	1.54
WB-18	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	1.89
WB-19	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.32
WB-20A	PFO	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.07
WB-25	PEM	Unmapped >12.4 acres	Grading and manipulation of disturbed areas	0.04
Total ORES/NYS Adjacent Area Activity				15.39

1 – Definitions: PEM – palustrine emergent wetland, PSS – palustrine scrub shrub, PFO – palustrine forested.

2 – Grading and manipulation of disturbed areas includes manipulation within the agricultural fields for placement and temporary storage of materials/equipment and general activities and foot traffic in the limit of disturbance area.

14(g) Wetland Restoration and Mitigation Plan

At this early stage in Facility development, a Conceptual WRMP has been drafted and is included in Appendix 14-C. There will be major activity to approximately 0.05 acre of NYS-jurisdictional wetlands, which will require a 1:1 mitigation ratio based on the Wetland Mitigation table (Table 14-3). Activity within the regulated adjacent area for “Unmapped >12.4 acres Wetlands” will not require mitigation. The Conceptual WRMP has identified a potential mitigation area adjacent to Wetland WA-3A and in proximity of WA-3B, located near the Solid Waste Disposal Area II landfill in the eastern portion of the Facility Area. Proposed mitigation activities include wetland creation consisting of expanding the wetland area by converting an area of adjacent upland to wetland area by excavating the area to the adjacent wetland grade (and associated water table) and

increasing natural vegetation by planting species found within the observed vegetative community. Based on the wetland community, plantings will consist of herbaceous, shrub, and/or tree species. The Applicant will consult with a professional wetland scientist to develop a plan that meets ORES' standards. Wetland mitigation sites will use natural soils and screen any off-site soils used to prevent invasive species. A wetland consultant will be present during excavation and plantings. Once the mitigation site has been approved, 5 years of monitoring will be conducted to ensure healthy establishment of planted species and removal of invasive species. In the event of loss of, or lack of success of the mitigation plantings, supplemental plants will be installed to ensure the success of the mitigation area.

Table 14-3. Wetland Mitigation Requirements.

Wetland Identification	Unmapped >12.4 acres	
	Freshwater Wetland (Acres)	Regulated Adjacent Area (100 feet) (Acres)
Major Activity		
Solar panels	-	1.71 ³
Access roads	0.05 ²	1.16 ³
Clearing of forest	-	0.74 ³
Power interconnections (including clearing for interconnections)	-	0.35 ³
Intermediate Activities		
Clearing and manipulation of undisturbed herbaceous vegetation	-	0.56 ³
Minor Activities		
Grading and manipulation of disturbed areas (active hay/row crops; existing commercial/industrial development areas) 1	-	8.83 ³
Selective tree/shrub cutting	-	2.04
Total Mitigation Required	0.05	-

1 – Grading and manipulation of disturbed areas includes manipulation within the agricultural fields for placement and temporary storage of materials/equipment and general activities and foot traffic in the limit of disturbance area.

2 – Listed as A(M3): Allowed, mitigation required (1:1 mitigation ratio by area of impact – creation, restoration, and enhancement)

3 – Listed as A: Allowed; no mitigation or enhancement required.

The sections above discuss the current assessment of potential activity within regulated wetland features in the Facility Site. Following final design of the Facility, and consultation with ORES and NYSDEC, the Applicant will submit a final WRMP pursuant to §900-10.2(f)(2) as necessary. Once approved by ORES and NYSDEC, the final WRMP will include the following:

- A discussion of any additional avoidance and minimization measures, over and above that described previously, demonstrating that intrusion into resource areas has been minimized to the maximum extent practicable.
- A narrative describing the on-site environmental monitoring and management program to be implemented during construction of the Facility, including but not limited to the USCs outlined in §900-6.4(p) and (q).
- Demonstration of the previously described minimization efforts, including any additional techniques to reduce disturbance areas and facilitate restoration required by the USACE.
- A mitigation plan outlining the proposed mitigation for major activity within NYS-jurisdictional wetlands. Although acceptable mitigation may include either purchase of wetland mitigation bank credits, if they are available within the same Hydrologic Unit Code 8 Watershed as the Facility, the Applicant has not identified available wetland mitigation bank credits in Niagara County. The Applicant is proposing a wetland mitigation project to create wetlands at the ratios as set forth in Table 1 of §900-2.15(g). For the Facility this is anticipated to be a 1:1 mitigation ratio for the major activity within NYS-jurisdiction wetlands, considering the potential activity within wetlands classified as unmapped >12.4 acres.

The Applicant received a PJD and AJD from USACE on March 2, 2023. The Applicant has designed the Facility such that coverage under a Clean Water Act (CWA) Nationwide Permit (NWP) is applicable. The impacts to USACE-jurisdictional wetlands are anticipated to fall beneath the NWP threshold that would trigger the need for submittal of a pre-application notification (i.e., application) to the USACE. Due to the limited amount of impacts to jurisdictional waters of the United States (<0.1 acre), a pre-construction notification for the nominal jurisdictional waters of the United States is not required. Given the proposed activities qualify for coverage under a CWA NWP, the Applicant shall comply with the applicable NWP (likely NWP 51), NWP General and Regional Conditions, and NYS Section 401 Water Quality Certification conditions during construction and operation of the Facility.

References

- Browne, S., Crocoll, S. Goetke, D., Healsop, N., Kerpez, T., Kogut, K., Sanford, S., Spada, D. July 1995. Freshwater Wetlands Delineation Manual. New York State Department of Environmental Conservation.
- Cornell University Geospatial Information Repository (CUGIR). 2013. *Index of New York State Regulator Freshwater Wetlands*. Available online at <https://cugir.library.cornell.edu/catalog/cugir-008187>. Accessed August 2022
- Cowardin, L. M., V. Carter, F.C. Golet, & E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. United States Department of the Interior, United States Fish and Wildlife Service.
- Kollmorgen Corporation. 2009. Munsell Soil Color Charts. Mcbeth Division of Kollmorgen Corporation. Baltimore, MD
- United States Army Corps of Engineers (USACE). 1987. Environmental Laboratory. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- USACE. 1999. *The Highway Methodology Workbook Supplement: Wetland Functions and Values – A Descriptive Approach*. US Army Corps of Engineers – New England District. September 1999 (NAEEP-360-1-30a).
- USACE. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2018. National Wetland Plant List, version 3.3. Available online at <http://wetland-plants.usace.army.mil/>
- United States Fish and Wildlife Service (USFWS). 2018. National Wetlands Mapper. Available online at: <http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed August 2022.
- United States Geological Survey (USGS) National Hydrography Dataset. 2023. Available online at: <https://www.sciencebase.gov/catalog/item/61f8b8a5d34e622189c328b2>. Accessed August 2022.