



FLAT CREEK SOLAR

Permit Application No. 23-00054

**Appendix 15-3
Agricultural Plan**

August 2024

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1.0 Introduction

Flat Creek Solar NY LLC (the Applicant) has developed this Agricultural Plan in accordance with 16 NYCRR § 1100-2.16(c) in order to avoid, minimize, and mitigate agricultural impacts to active agricultural lands within NYS Agricultural Land Classified Mineral Soil Groups (MSG) 1 through 4 to the maximum extent practicable. The Applicant will comply with the New York State Department of Agriculture and Markets (NYSDAM) Guidelines for Solar Energy Projects (“NYSDAM Guidelines” or “Guidelines”) to the maximum extent practicable.

The Applicant will hire an Environmental Monitor (EM) who will be qualified as an agricultural monitor in accordance with 16 NYCRR § 1100-6.4 (b)(4), 6.4(s). The EM will have several responsibilities, including:

- Being onsite and notifying NYSDAM during ground-disturbing activities related to construction and restoration;
- Oversee Project construction, restoration, monitoring, remediation, and decommissioning in agricultural areas;
- Serve as the agricultural point of contact and act as a liaison between landowners, Project construction personnel, and NYSDAM regarding agriculture-related matters for the Project and;
- Maintain contact with:
 - Appropriate onsite Project construction supervisors and inspectors during the construction phase and;
 - Representatives of the Applicant and participating landowners regarding agricultural land impacted, management activities pertinent to the agricultural operations, and site-specific implementation of agricultural resource mitigation measures.

2.0 Project Description

The Project is a 300 megawatt (MW) solar energy generation facility located in the Towns of Canajoharie and Root, Montgomery County, New York. The Facility Site totals approximately 3,794 acres of land that is leased from private landowners. According to the According to recent (2020) United States Department of Agriculture (USDA) National Agricultural Statistics Service

(NASS) Cropland Data Layer (CDL) data, the Facility Site consists of 2,729.11 acres of agricultural land.

While the Facility Site consists of 3,794 acres, the proposed Limit of Disturbance (LOD) is only approximately 1,637 acres. Furthermore, the total acreage that will be used for Facility components is limited to 446.74 acres. Facility components will include solar arrays, tracker racking system, access roads, inverters, fencing, underground collection lines, and electrical interconnection facilities. Specifications on the project components include are listed below:

- 550,732 solar modules
 - The anticipated maximum height of the solar array panels is 10 feet from finished grade, inclusive of the racking system.
- Applicant will use a solar module similar to the JinKO Solar Tiger Neo N-type 72HL4-BDV 550–570-Watt Bifacial module with Anti-Reflection Coating. The Facility proposes to install solar modules on a tracker racking system similar to the NexTracker NX Horizon system. Specification sheets for the modules and racking system are included in the Design Drawings (Appendix 5-1 of Exhibit 5) for the Facility.
- Inverters will be located within the Facility Site, interspersed throughout the solar arrays. Their purpose is to convert direct current (DC) electricity generated by the solar modules into alternating current (AC) electricity. Cables from the solar modules are run to the inverters using a CAB© cabling system and/or underground lines. From the inverters, underground collection lines convey electricity to the Facility collection substation, Point of Interconnection (POI) switchyard, and ultimately to the existing electric transmission system. The Applicant intends to use an SMA Medium Voltage Power Station (MVPS) 4000-S2-US/4200-S2-US/4400-S3-US/4600-S2-US inverter, or a similar inverter.
- Perimeter fencing surrounding Facility components will consist of agricultural fencing with fixed knot woven wire and evenly spaced galvanized (gray) metal posts, measuring a height of eight (8) feet above ground level. 24-foot-wide swing access gates, consisting of an eight-foot-tall chain link fence with wire fabric, will be installed along the fence line where necessary. Security fencing will be placed around the perimeter of Facility components, inclusive of the collection substation and POI switchyard. Security perimeter fencing for the collection substation and POI switchyard will be installed around the immediate vicinity as required per regulatory standards. This fencing will be 7 feet in height with 1 foot of barbed wire, for a total height of 8 feet.

- The 34.5-kilovolt (kV) collection lines within the Facility Site will gather power from the solar arrays and transport it to a new collection substation that will step up the voltage to 115 kV.
- The new collection substation is approximately 1.90 acres in size and will be centrally located in the Facility Site, and will be located in the Town of Root, adjacent to the POI switchyard (which is approximately 3.6 acres in size), and directly south of the existing 115 kV transmission line that bisects the Facility Site.
 - Access to the collection substation will be via a new haul road from Hilltop Road.
- There will be a new interconnection line that will connect the Project to the existing New York State energy grid.
 - This interconnection line will consist of nine adjacent overhead 115 kV lines spanning 27,249.71 linear feet, within the Facility Site.

2.1 Agricultural Land Uses

Figure 15.3.1 depicts mapping of agricultural uses in the Facility Site. This figure has been prepared using data from the United States Department of Agriculture (USDA) National Agricultural Statistics Service and includes agricultural use based on the USDA Cropland Data Layer (CDL), as well as field-verified data collected during the 2021, 2022, and 2023 growing seasons. Based on these findings, primary agricultural land cover within the Facility Site consists of 2,729.11 acres. The dominant agricultural uses within the Facility Site (by acreage) include corn, other hay/non alfalfa, grassland/pasture, alfalfa, and soybeans. To a lesser extent, agricultural lands in the Facility Site also produce rye, clover/wildflowers, Christmas trees, sod/grass seed, winter wheat, sunflower, and oats. Farmers often rotate their crops so acreages may differ from year to year. Portions of the Facility Site outside the fence line, as shown on Figure 15.3.1, will continue to be used for agricultural operations at the landowners' discretion. During the useful life of the Project (a minimum of 25 years), land within the Project fence line will be taken out of agricultural production and will be used for solar energy generation. Following decommissioning at the Project, land will be restored to its preconstruction condition to the maximum extent practicable and may again be used for agricultural purposes. Further discussion regarding the decommissioning procedures for agricultural land can be found in Section 3.4 below.

2.2 Soils

Within the Facility's proposed LOD, approximately 1,447.81 acres of disturbance to agricultural land is anticipated. Of these 1,447.81 acres, 230.30 will be a temporary disturbance (e.g., grading and laydown yards) and 1,217.51 acres will be a permanent disturbance (e.g., access roads, inverter pads, solar arrays, electrical equipment). The agricultural land that will have temporary disturbances during Project construction will be restored upon construction completion.

Within the Facility Site, approximately 485.86 acres of agricultural soils are classified as New York State Agriculture Land Classification's Mineral Soil Groups (MSGs) 1 through 4. Of the 485.86 acres of active agricultural lands within MSGs 1 through 4, only 230.23 acres will be impacted from the development of the Project (42.25 acres of temporary impact and 187.79 acres of permanent impact).

The Applicant has made significant efforts to site Facility components to minimize impacts and optimize future use of agricultural lands within the Facility Site. Agricultural soils in the Facility Site can be seen on Figure 15.3.1.

2.3 Existing Water Management

To identify existing drain tiles prior to construction, the Applicant consulted with landowners. Existing drain tiles within the LOD will be monitored for damage during and after construction, if drain tiles become damaged, they will be repaired or replaced as specified in landowner lease agreements. Repairs to any damaged drain tiles will be consistent with the NYSDAM's details for "Repair of Severed Tile Line" and will meet or exceed the American Association of State Highway and Transportation Officials (AASHTO) M-252 specifications. After construction and during operation, the Applicant will coordinate with the landowners to continue to monitor drain tiles to ensure repairs are functioning properly.

The Drainage Remediation Plan, provided as Appendix 15-4 of the Section 94-c Application, will be adhered to and will include a detailed description of identification of surface and subsurface drainage features, the likelihood of impacts, as well as anticipated repair methods.

3.0 NYSDAM Guidelines

The Applicant will comply with the NYSDAM Guidelines to the maximum extent practicable and will contact NYSDAM and the New York State Office of Renewable Energy Siting (ORES) to discuss alternatives where the Guidelines are impracticable.

As part of compliance with the NYSDAM Guidelines, the Applicant will hire an EM that is familiar with agricultural practices in New York State to supervise construction and restoration work on agricultural land associated with the Project. The EM's responsibilities will include the following:

- Coordination with the NYSDAM Division of Land and Water Resources, as necessary.
 - To ensure the NYSDAM Guidelines are being met to the maximum extent practicable; and
 - If a farm resource concern, management matter pertinent to the agricultural operation, and/or a site-specific implementation condition cannot be resolved.

The Applicant intends to comply with the NYSDAM Guidelines for construction, restoration, monitoring and remediation, and decommissioning. Some of the guidelines are detailed below, and the NYSDAM Guidelines have been included in Attachment A.

3.1 Construction

The Applicant will comply, to the maximum extent practicable, with the following measures during Facility construction:

- Before any topsoil is stripped, representative soil samples will be obtained from the areas to be disturbed. The soil sampling will be consistent with Cornell University's soil testing guidelines, and samples should be submitted to a laboratory for testing pH, percent organic material, cation exchange capacity, phosphorus/phosphate (P), and potassium/potash (K). The results are to establish a benchmark that the soil's pH, P, K, and nitrogen (N) are to be measured again upon restoration. Should soil sampling not be performed, the Applicant will obtain fertilizer and lime application recommendations for disturbed areas.
- Stripped topsoil will be stockpiled from work areas (e.g., parking areas, electric conductor trenches, along haul roads, equipment pads) and kept separate from other excavated

material (rock and/or sub-soil) until the completion of the Project for final restoration. For proper topsoil segregation, at least 25 feet of additional temporary workspace (ATWS) will be provided along “open-cut” underground utility trenches. All topsoil will be stockpiled as close as is reasonably practical to the area where stripped/removed and will be used for restoration on that particular area. Any topsoil removed from permanently converted agricultural areas (e.g., permanent roads, etc.) will be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the Project’s LOD; however, not to significantly alter the hydrology of the area. Topsoil stockpile areas and topsoil disposal areas will be clearly designated in the field and on construction drawings; changes or additions to the designated stockpile areas may be needed based on field conditions in consultation with the EM. Sufficient LOD area (as designated on the site plan or by the EM) will be allotted to allow adequate access to the stockpile for topsoil replacement during restoration.

- Topsoil stockpiles on agricultural areas left in place prior to October 31 will be seeded with Aroostook winter rye or equivalent at an application rate of three bushels (168 pounds) per acre and mulched with straw mulch at rate of 2 to 3 bales per 1,000 square feet.
 - Topsoil stockpiles left in place between October 31 and May 31 will be mulched with straw at a rate of 2 to 3 bales per 1,000 square feet to prevent soil loss.
- The surface of haul roads located outside the Project’s security fence and constructed through agricultural fields will be level with the adjacent field surface. If a level road design is not feasible, all haul roads should be constructed to allow a farm crossing (for specific equipment and livestock) and to restore/maintain original surface drainage patterns.
- Culverts and waterbars will be installed to maintain the natural drainage patterns.
- Vehicles or equipment will not be allowed outside the planned LOD without the EM seeking prior approval from the landowners (and/or agricultural producer), and associated permit amendments as necessary. All vehicle and equipment traffic, parking, and material storage will be limited to the haul road and/or designated work areas, such as laydown areas, with exception of the use of low ground pressure equipment that do not result in a visible rut that alters soil compaction. Where repeated temporary access is necessary across portions of agricultural areas outside the security fence, preparation for such

access will consist of either stripping/stockpiling all topsoil linearly along the haul road, or the use of timber matting.

- Proposed permanent access will be established as soon as possible by removing topsoil according to the depth of topsoil as directed by the EM. Any extra topsoil removed from permanently converted areas (e.g., permanent roads, equipment pads, etc.) will be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the Project's LOD. This will be completed in such a way to not significantly alter the hydrology of the area.
- For open-cut trenching, topsoil will be stripped from the work area adjacent to the trench (including segregated stockpile areas and equipment access). Trencher or road saw-like equipment will not be allowed for trench excavation in agricultural areas, as the equipment does not segregate topsoil from subsoil. Horizontal directional drilling (HDD) installations, primarily designed to avoid impacts to wetlands and an existing pipeline, will also help to minimize agricultural ground disturbances. Any HDD drilling fluid inadvertently discharged will be removed from agricultural areas. Narrow, open trenches less than 25 feet long involving a single directly buried conductor or conduit (as required) to connect short rows within the array, will be considered exempt from topsoil segregation.
- Electric collection, communication, and transmission lines installed above ground can create long-term interference with mechanized farming on agricultural land. Thus, interconnect conductors outside the security fence are proposed to be buried in agricultural fields wherever practicable. Where overhead utility lines are required, (e.g., from the switchyard to the point of interconnection [POI]), installation will be located outside field boundaries or along permanent haul road(s) wherever possible. Should overhead utilities cross farmland, agricultural impacts will be minimized by using taller structures that provide longer spanning distances and locate poles on field edges to the greatest extent practicable.
- The buried utilities located within the Project's security fence will have a minimum depth of 18 inches of cover if buried in a conduit or a minimum depth of 24 inches of cover if directly buried (e.g., not routed in conduit). The following requirements will apply to all buried utilities located outside the generation Project security fence:

- In cropland, hayland, and improved pasture, buried electric conductors will have a minimum depth of 48 inches of cover. In areas where the depth of soil over bedrock is less than 48 inches, the electric conductors will be buried below the surface of the bedrock if friable/rippable, or as near as possible to the surface of the bedrock.
 - In unimproved grazing areas or on land permanently devoted to pasture, the minimum depth of cover will be 36 inches.
 - Where electrical conductors are buried directly below the Project's haul road or immediately adjacent (at road edge) to the haul road, the minimum depth of cover will be 24 inches. Conductors will be close enough to the road edge as to be not subject to agricultural cultivation/subsoiling.
- Should buried utilities alter the natural stratification of soil horizons and natural soil drainage patterns, the Applicant will rectify the effects with measures such as subsurface intercept drain lines. The Applicant will consult the Montgomery County Soil and Water Conservation District concerning the type of intercept drain lines to install to prevent surface seeps and the seasonally prolonged saturation of the conductor installation zone and adjacent areas. The Applicant will install and/or repair all drain lines according to Natural Resources Conservation Service (NRCS) conservation practice standards and specifications. Drain tiles will meet or exceed the AASHTO M-252 specifications. Repair of subsurface drains tiles will be consistent with the NYSDAM's details for "Repair of Severed Tile Line" found in the pipeline drawing A-5.
 - In pasture areas, it may be necessary to construct temporary fencing (in addition to the Project's permanent security fences) around work areas to prevent livestock access to active construction areas and areas undergoing restoration. For areas returning to pasture, temporary fencing will be erected to delay the pasturing of livestock within the restored portion of the LOD until pasture areas are appropriately revegetated. Temporary fencing including the Project's required temporary access for the associated fence installations will be included within the LOD as well as noted on the construction drawings. The Applicant will be responsible for maintaining the temporary fencing until the EM determines that the vegetation in the restored area is established and able to accommodate grazing. At such time, the Applicant will be responsible for removal of the temporary fences.

3.2 Post-Construction Restoration

All construction debris in active agriculture areas including pieces of wire, bolts, and other unused metal objects will need to be removed and properly disposed of as soon as practical to prevent mixing with any topsoil.

In areas where topsoil was stripped, subsoil decompaction will be conducted prior to replacing the topsoil. Rocks that are four inches and larger will be removed from the subsoil surface prior to topsoil replacement. The topsoil will be replaced to the original depth and contours where possible. Agricultural areas temporarily disturbed during construction will be de-compacted to a depth of 18 inches to a level no more than 250 pounds per square inch when measured with a soil penetrometer. Subsoil decompaction and topsoil replacement will be avoided after October 1. If areas are restored after October 1, provisions will be made to restore and reseed eroded and exposed areas in the following spring to establish proper vegetative cover.

Access roads will be re-graded as needed to allow farm equipment crossing and to restore the original drainage patterns or incorporate the newly designed drainage pattern. Existing drain tiles will be identified and located before construction as much as is reasonably possible based primarily on consultation with the landowners. During and after construction operations, any existing drain tiles within the LOD will be checked for damage, and damaged drain tiles will be repaired or replaced consistent with the NYSDAM's details for "Repair of Severed Tile Line" to the maximum extent practicable. The Applicant will coordinate with the landowners to continue to monitor drain tiles post-construction to ensure repairs are properly functioning.

Restored agricultural areas will be seeded as specified by the landowners, or as otherwise recommended in NYSDAM's fertilizer, lime and seeding guidelines, to maintain consistency with the surrounding areas. Restoration practices will be postponed until favorable soil conditions exist. Restoration will not occur when soils are in a wet or plastic state of consistency. Regrading stockpiled topsoil and de-compacting subsoils will not occur until the plasticity, as determined by the Atterberg field test, is adequately reduced. Restoration activities will not occur on agricultural fields between October 1 and May 1 unless favorable soil conditions exist.

3.3 Monitoring and Remediation

The Applicant will provide monitoring and remediation for one complete growing season following the date upon which the desired crop is planted. Onsite monitoring will occur at least three times during the growing season (spring, summer, and fall). The EM will assess the topsoil thickness, relative content of rock and large stones, trench settling, soil compaction, drainage, and repair/replacement of severed subsurface drain line, fences, and gates.

The Applicant will consolidate each applicable growing season's observations into an annual report during the monitoring period that will include date stamped photographs illustrating crop growth comparison with unaffected portions of the agricultural areas and will be provided upon request to NYSDAM. If a decline in crop productivity is apparent, the Project Company as well as other appropriate parties must determine whether the decline is due to project activities. If project activities are determined to be the primary detrimental factor, the EM will notify NYSDAM concerning unsuccessful restoration and to potentially schedule a NYSDAM staff field visit. If project restoration is determined to be insufficient, the Applicant will develop a plan for appropriate rehabilitation measures to be implemented.

3.4 Decommissioning

After the useful life of the Project, the Facility will be decommissioned in accordance with the following NYSDAM Guidelines.

- If the operation of the generation facility is permanently discontinued, all above ground structures (including panels, racking, signage, equipment pad, security fencing) and underground utilities if less than 48- inches deep shall be removed.
- All concrete piers, footers, or other supports shall be removed to a minimum depth of 48- inches below the soil surface.
- The following requirements apply to electric conductors located at the respective range of depth below the surface:
 - More than 48-inches: All underground electric conduits and direct buried conductors may be abandoned in place. Applicable conduit risers must be

removed and abandoned conduit must be sealed or capped to avoid a potential to direct subsurface drainage onto neighboring land uses.

- Less than 48-inches: All underground direct buried electric conductors and conductors in conduit and associated conduit with less than 48-inches of cover shall be removed, by means of causing the least amount of disturbance as possible.
- Access roads in agricultural areas shall be removed, unless otherwise specified by the landowner. If access is to be removed, topsoil shall be returned from recorded project excess native topsoil disposal areas, if present, or imported topsoil free of invasive species that is consistent with the quality of topsoil on the affected site.
- All areas intended for agricultural production shall be restored according to recommendations by the current landowner or leasing agricultural producer, and as required by any applicable permit, the Soil and Water Conservation District, and NYSDAM.
- NYSDAM shall be notified before the Project undertakes decommissioning.

The Decommissioning Plan, provided as Appendix 23-1 of the Section 94-c Application, will be adhered to and will include a detailed description of the decommissioning procedures, site restoration procedures, and a timeframe for decommissioning activities.

FIGURES

ATTACHMENT A

**New York State Department of Agriculture and Markets Guidelines for Solar
Energy Projects – Construction Mitigation for Agricultural Land
(Revised 10/18/2019)**