

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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CERTIFIED MAIL RETURN RECEIPT REQUESTED

October 26, 2018

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **PETITION NO. 1345** – Pawcatuck Solar Center LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 15 MW AC solar photovoltaic electric generating facility on approximately 353 acres comprised of four abutting parcels located east of Pendleton Hill Road, north of the Pawcatuck River and south of Interstate-95 with proposed access from Ella Wheeler Road, and associated electrical interconnection to Eversource Energy's Shunock Substation west of Pendleton Hill Road in North Stonington, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on October 25, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection and would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

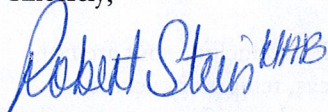
1. The Petitioner shall prepare a Development and Management Plan (D&M) for this facility using the Alternate 2 site layout design, as depicted on Array Plan WJ111, submitted to the Council on October 12, 2018. The D&M Plan shall be in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of North Stonington for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) A final site plan including, but not limited to, final solar panel and tracking system design, access roads, electrical interconnection, fencing, equipment pads, and post-construction stormwater controls, as designed in the Department of Energy and Environmental Protection (DEEP)-approved Stormwater Pollution Control Plan (SWPCP);
 - b) Submission of a copy of the DEEP-approved SWPCP;
 - c) Construction site plans that comply with the DEEP-approved SWPCP and include, but are not limited to, site clearing, grading, site phasing, construction laydown areas, temporary access roads, erosion and sedimentation controls, concrete washout stations, and specifics on construction related environmental mitigation;
 - d) Final seeding plan for all disturbed areas of the site;
 - e) Construction work hours and days of the week;
 - f) Details of any post-construction environmental mitigation measures; and
 - g) Details of post-construction site maintenance and vegetation management.

2. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
3. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of North Stonington;
4. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
5. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
6. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
7. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated May 23, 2018 and additional information received on July 30, 2018, August 22, 2018 and October 12, 2018.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,



Robert Stein
Chairman

RS/RDM/lm

Enclosure: Staff Report dated October 25, 2018

- c: The Honorable Michael A. Urgo, First Selectman, Town of North Stonington
Juliet Hodge, Planning Development and Zoning Official, Town of North Stonington
The Honorable Rob Simmons, First Selectman, Town of Stonington
Keith Brynes, Town Planner, Town of Stonington
Russ Edwards, Vice President, Development, Coronal Energy



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Petition No. 1345

Pawcatuck Solar Center LLC

North Stonington

Staff Report

October 25, 2018

Introduction

On May 23, 2018, Pawcatuck Solar Center LLC (PSC or Petitioner) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 15.0 megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility located on property accessed from Ella Wheeler Road in North Stonington, and an associated electrical interconnection to Eversource Energy's Shunock Substation in North Stonington.

On July 17, 2018 a public field review of the proposed project was conducted. The field review was attended by Council members Michael Harder and Robert Silvestri, Council staff members Ifeanyi Nwankwo and Robert Mercier, Frederick Riese, Senior Environmental Analyst from the Connecticut Department of Energy and Environmental Protection (DEEP), and PSC representatives Garret Saunders, Ben Combs, Russ Edwards, Brad Parsons, Eric Davison, and Dean Gustafson.

On or about May 18, 2018, the Petitioner notified Town of North Stonington (Town) officials, state officials and agencies, the property owner and abutting property owners of the proposed project. The Petitioner also notified the Town of Stonington as it is located within 2,500 feet of the proposed project. To date, the Council has not received any comments from any abutters or the Towns of Stonington or North Stonington.

The Council issued a set of interrogatories to PSC on June 28, 2018. On July 30, 2018, PSC submitted responses to the Council's first set of interrogatories. On August 8, 2018, the Council issued a second set of interrogatories. On August 22, 2018, PSC submitted responses to the Council's second set of interrogatories. On September 28, 2018, the Council issued a third set of interrogatories based on the Council's discussion of the Project during a Council energy/telecommunications meeting held on September 27, 2018. PSC submitted responses to the Council's third set of interrogatories on October 12, 2018.

On June 21, 2018, pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act which requires an administrative agency to take action on a petition within 60 days of receipt, the Council voted to set the date by which to render a decision on this petition by November 19, 2018. This date is the statutorily-mandated 180-day decision deadline for this petition under CGS §4-176(i).

Municipal Consultation

PSC met with the Town of North Stonington (Town) First Selectman Shawn Murphy and the Town Economic Developer, Juliet Hodge, in May 2017. A Project information presentation was held at a public Town Board of Selectmen meeting in June 2017.

By letter dated November 8, 2017 to PSC, First Selectman Murphy expressed support for the proposed project. Recently, the Town requested PSC to change the name of the Project from "Pawcatuck Solar Center" to "North Stonington Solar Center" to more accurately reflect the location of the facility. The Council will be notified when this change occurs.



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Affirmative Action / Equal Opportunity Employer

Additional outreach to the Town continued into 2018 and included a Project site meeting on April 12, 2018 with the new First Selectman, Michael Urgo, and Ms. Hodge. Outreach also included contacting officials from the Town of Stonington and the Town of Westerly, Rhode Island, which are both within 2,500 feet of the proposed project.

State Agency Comment

On May 24, 2018, the Council sent correspondence requesting comments on the proposed project by June 25, 2018 from the following state agencies: Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Consumer Protection (DCP); Department of Labor (DOL); Department of Construction Services (DCS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); the State Historic Preservation Office (SHPO) and DEEP.

DEEP and DOAg both submitted written comments dated June 25, 2018, which are attached hereto. No comments from any other state agencies were received.

Public Act 17-218

Effective July 1, 2017, Public Act 17-218 requires, “for a solar photovoltaic facility with a capacity of two or more megawatts, to be located on prime farmland or forestland, excluding any such facility that was selected by DEEP in any solicitation issued prior to July 1, 2017, pursuant to section 16a-3f, 16a-3g or 16a-3j, the DOAg represents, in writing, to the Council that such project will not materially affect the status of such land as prime farmland or DEEP represents, in writing, to the Council that such project will not materially affect the status of land as core forest.” Because the proposed project was selected by DEEP in a solicitation prior to July 1, 2017, the proposed project is exempt from the provisions of Public Act 17-218.

Public Benefit

The project would be a distributed energy resource facility as defined in CGS §16-1(a)(49). CGS §16a-35k establishes the State’s energy policy, including the goal to “develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent.” The 2018 Connecticut Comprehensive Energy Strategy emphasizes growth of renewable and zero-carbon generation in the state and region. The proposed facility will contribute to fulfilling the State’s Renewable Portfolio Standard as a zero emission Class I renewable energy source.

On March 9, 2016, pursuant to Section 1(b) and 1(c) of PA 15-107, DEEP issued notice for a Request for Proposals (RFP) for Class I renewable energy sources and Class III sources with a nameplate capacity rating of more than 2 MW and less than 20 MW (Small Scale RFP). Project selection occurred on November 28, 2016. On June 27, 2017, DEEP issued its final determination in the RFP and selected 25 out of 107 proposed projects to enter into long-term power purchase agreements with the electric distribution companies (EDCs) for a combination of energy and environmental attributes. The proposed Project is one of the 25 projects selected.

PSC would be structured as an independent electrical generating entity participating in the ISO-New England, Inc. (ISO-NE) market, selling power to two public utilities via power purchase agreements (PPAs). Specifically, per the PPAs, approximately 80.36 percent of the electricity and renewable energy certificates (RECs) would be sold to Eversource Energy (Eversource), and the remaining 19.64 percent would be sold to The United Illuminating Company (UI). The PPAs were approved by PURA in September 2017 (PURA Docket No. 17-01-11). The PPAs have a 20-year term. There are no extensions or options to renew the

terms of the PPAs. As required in the PPAs, the Petitioner plans to qualify and participate in the next ISO-NE Forward Capacity Auction for the 2022/2023 commitment period.

Project Site

The proposed site is located on approximately 353 acres that consists of four parcels, or portions thereof (collectively the Site property), as follows;

- Parcel 123-0140 – Boombridge Road - 62.62 acres
- Parcel 123-3161 – 36 Ella Wheeler Road - 13.31 acres
- Parcel 123-3694 – Ella Wheeler Road - 180.42 acres
- Parcel 126-0006 – 36 Pendleton Hill Road - 97.11 acres

All four parcels are owned by Congeries Realty, Inc., a subsidiary of the Mashantucket Pequot Tribal Nation. The Site property is located at the end of Ella Wheeler Road and is partially bound by Pendleton Hill Road, Interstate 95, Boom Bridge Road, and the Pawcatuck River. The Pawcatuck River forms the boundary between North Stonington and Westerly, Rhode Island. The Site is entirely undeveloped and composed of agricultural fields and forest. No buildings are present on the Site property.

A third party leases approximately 110 acres of the Site property for agricultural purposes. For the 2018 growing season, 70 acres were in active corn and row crop production.

The Site property is zoned industrial and is located within the Town's Development District. An amusement park was previously planned on portions of the Site property, but it was never constructed. The Site property abuts other industrially-zoned land primarily to the north, south, and west and a Medium Density Residential Zone primarily to the east. The Site property is not identified within the Town's 2013 Plan of Conservation and Development as a desired area for future preservation. Land use in the area of the Site property consists of forest, commercial and industrial developments, a gravel pit, agricultural land, open space and some residential.

PSC's initial search criteria for suitable property for a solar project included specific site and community characteristics such as zoning consistent with the development of a solar facility, site availability, suitable land area with appropriate topographic characteristics, and proximity to existing electrical infrastructure for interconnection.

PSC initially determined it would need 120-acres to develop the Project and secured lease options for two parcels totaling 278 acres south of Interstate 95. Subsequent field investigations of the properties found multiple vernal pools, endangered species, and challenging topography that would limit Project development. Other land was examined on the north side of Interstate 95, but wetlands and vernal pools precluded a workable development plan. PSC then secured lease options for additional land adjacent to the two initial parcels and proceeded to develop the current Project footprint.

Proposed Project

The proposed Project would consist of approximately 61,000 solar photovoltaic panels rated at 340 Watts DC. The panels have an efficiency factor of approximately 16 percent (the percentage of solar energy that is being converted into useable electricity). The panels measure approximately 9.8 feet by 3.3 feet and would be mounted on mechanical tracker assemblies. The solar panels would reach a maximum height of approximately 10 feet above grade, depending on specific topographic conditions. At their lowest point the panels would be approximately 2 feet above grade.

The panels would be mounted on a single axis tracker system in a landscape fashion, with an aisle spacing of approximately 9.5 feet between rows, except where noted. The landscape solar module arrangement would require less of a project footprint when compared to a portrait arrangement.

The tracker system uses a central motor to mechanically move a central drive arm. Each drive arm connects to 20 to 30 tracker panel support arms (panel rows) that can support up to 84 panels. The central drive arm provides for simultaneous panel arm movement and rotation of the connected panel rows at angles ranging from 52 to -52 degrees. The mechanical operation of the racking system is expected to consume approximately 8.3 megawatt hours per year and such on-site consumption was factored into the overall output of the facility. It can operate at temperatures to -30 degrees Fahrenheit and is designed to meet applicable codes regarding wind and snow loading. Each mechanical rack would be supported on posts that are 14 to 16 feet long, driven into the ground to an approximate depth of 10 to 12 feet.

The solar arrays would be established in multiple areas of the site with the size of specific solar field areas determined by topographical and environmental constraints. Generally, the Project site is divided into three distinct areas: a northwest solar field, a northeast solar field and a south solar field.

The solar field areas would be graded as necessary to achieve slopes conducive to operation of the solar tracker system. The tracker system can operate on grades up to 6 percent on the north-south axis and up to 15 percent on the east-west axis. Most of the solar field areas would be located in areas with existing gentle to moderate slopes. These areas would be graded as necessary to even out minor changes in topography and to properly direct post-construction stormwater flows to stormwater control features. The northeast solar field is on a steep, east sloping hill and grading of the hillside is necessary to obtain a slope of less than 15 percent. Soil disturbance is also required to install foundations, stormwater control features and access roads. Stone walls and rock piles between existing field areas would be removed where necessary, followed by grading to match adjacent areas.

Centralized inverters would be used for the Project with all inter-array wiring installed underground between the groups of panels, equipment pads and the Project switch gear. Six reinforced concrete inverter/transformer pads (20-feet by 40-feet) would be constructed, with two in each major area of the site. PSC considered the use of string inverters, but ultimately decided it was more technically and economically feasible to use a centralized inverter system. In addition to the inverter/transformer pads, a seventh pad would be constructed for switchgear/meter equipment at the Project tie line location in the south solar area.

If there are issues with one section of the Project, that section can be isolated at the inverter level, allowing other sections to continue to produce power. The Project cannot serve as a microgrid. The Project has not been designed to accommodate a battery storage system.

An above ground 13.8-kV tie line (distribution feeder) would extend west from the south end of the Project site to Eversource's Shunock Substation, located on the west side of Pendleton Hill Road in North Stonington. The preliminary interconnection design, subject to final approval by Eversource, consists of five new 40-foot tall poles installed within a 60-foot wide, 1,500-foot long utility corridor. The utility tie in corridor is parallel to an existing Eversource 115-kV transmission line right-of-way that interconnects with the Shunock Substation.

The solar field areas would be enclosed by a six-foot tall chain link fence with anti-climb mesh and one strand of barbed wire. Given the large area of the Project, there would be five separate fenced solar field areas as follows: one in the northeast solar field, one in the northwest solar field, and three in the south solar field (see attached Figures).

There are three residential structures within 800 feet of the Project perimeter fence as follows: 318 Boombridge Road - 580 feet southeast of northwest solar field; 25 Ella Wheeler Road - 640 feet northeast of northwest solar field; and 9 Ella Wheeler Road - 780 feet northwest of south solar field.

Each solar field area would be accessed by 20-foot wide gravel roads with access restricted by 24-foot wide swing gates. There would be approximately 11,490 linear feet of gravel access roads constructed for the Project. Minor grading would be required along most of the proposed access road routes, depending on specific location topography, environmental resources, and proposed stormwater management features.

Ella Wheeler Road would serve as the only access point to the facility. From this access point, internal gravel access roads would extend to various areas of the Project site. A gravel maintenance/parking area would be established on the property adjacent to the main entrance. A locked storage container may be located in this area to store equipment and spare parts.

Construction of the Project is expected to begin in the first quarter of 2019 with mobilization of equipment and land clearing efforts. Initial site work and land preparation is expected to be completed by late Spring 2019. Construction and installation of the solar tracker system and panels with completion anticipated in Fall 2019. Final site stabilization, testing, and commissioning is expected to be completed by late 2019.

During construction, heavy equipment will be required to access the Site during normal working hours (7 a.m. to 7 p.m. Monday through Saturday). It is anticipated that 50 to 60 construction vehicles (average size light-duty) will make daily trips onto the Site. Once construction is complete and the Project operational, only maintenance vehicles would periodically access the site.

Once the facility is operational, PSC personnel would visit the site occasionally to perform routine maintenance and site vegetation management. The tracker system would require annual maintenance. The aisle rows are sufficiently spaced to allow for mowing and maintenance activities. PSC does not anticipate a need to clean the panels of surface film and dirt as the combination regular rainfall and the angle of the panels should be sufficient to keep the panels free of debris that could affect site performance.

Public Safety

The Project would be designed in accordance with the National Electrical Safety Code, Institute of Electrical and Electronics Engineers guidelines and National Fire Protection Association standards. There are no structures, proposed or existing, that could pose a hazard to the facility or the interconnection route.

Solar array foundations would be secured using a driven pile technology or ground screw foundations. All racking will be designed to meet applicable local building codes for wind and snow loading.

The nearest airport is the Westerly State Airport in Washington County Rhode Island, approximately 4 miles south of the Site. The Project would comport with Federal Aviation Administration (FAA) requirements and no aviation glare analysis or structure height registration is required.

Once operational, the facility would be unmanned but remotely monitored using a Supervisory Control and Data Acquisition system. The system would disconnect the facility from the grid during fault conditions and under certain contingency events.

Prior to project operation, PSC would meet with local emergency first responders regarding site access and to provide information regarding emergency response specific to solar facilities. The entrance gate would have a secured on-site key for first responder access. In the event of a fire, the first responders would have access to the main disconnect switch that would cease inverter operation and de-energize the facility.

The electrical transformers would contain approximately 650 gallons of biodegradable oil (Envirotemp FR3 Fluid), composed of seed oils and performance enhancing additives and formulated to minimize health and environmental risks. It does not contain petroleum, halogens, silicones, or corrosive sulfur and has a higher flash point and fire point than most other ignition resistant dielectric fluids.

The Project and interconnection would be designed and constructed in accordance with Eversource and UI Guidelines for Generator Interconnection and State of Connecticut, ISO-NE, and Federal Energy Regulatory Commission (“FERC”) requirements, as applicable. As part of the interconnection process, the Petitioner has successfully completed a utility-sponsored Scoping Meeting, Interconnection Application Request and an Application Review- Feasibility Study. Distribution and Transmission System Impact Studies are currently under development (anticipated completion by third quarter 2018) which would be followed by a final Interconnection Agreement.

When operational, the proposed facility would meet DEEP noise standards at the Site property boundaries. Most operational noise generated by the Project would be from the transformers and inverters at each pad. The pads are located within the interior of the site, as feasible, to further reduce the effects of operational noise. Operational noise during nighttime hours would be minimal as the facility would not be producing power. Construction-related noise is exempt from DEEP Noise Control Standards. Construction-related work is expected to be conducted during normal working hours.

Environmental Effects and Mitigation

Historic and Recreational Resources

PSC reviewed potential Project-related impacts to historic and archeological resources. Three historic resources were found on the Site property; an old farmstead with intact foundations near the tie line corridor, the Partlow Cemetery located within the spadefoot toad “no build zone”, and the Stanton Cemetery located south of a field in the central portion of the Site property. All three of these areas are outside of the Project development area and no impacts are expected. No properties listed on the National Register of Historic Places are near the Project area.

One previously identified prehistoric archaeological site was identified in the northeastern corner of the Project area. Field surveys of this area would occur prior to Project construction. A copy of the Phase 1A cultural resource assessment survey was provided to SHPO.

The nearest recreational area to the Project is the Mystic KOA Holiday Campground, a private campground located at 118 Pendleton Hill Road, approximately 0.25 mile to the northwest of the Project site and across Interstate 95. The Project would have no impact on the campground.

The Site property partially abuts the Pawcatuck River, a river included within the Congressionally-approved Wood-Pawcatuck River Watershed Wild and Scenic River Study. As part of the study, a watershed stewardship plan was developed in June 2018 that would become effective if the river system achieved Wild and Scenic status. The Project would comply with the following stewardship plan recommendations: avoid development within the 100-foot riparian buffer, avoid direct discharge of stormwater, utilize low-impact development techniques to pre-treat stormwater runoff; and site new alternative energy installations in previously impacted areas.

Visibility

The Project site is within a relatively undeveloped area and visibility of the Project is not expected from adjacent residences or area roads. No landscaping or visual screening is proposed.

No state or locally-designated scenic roads are located within one mile of the Project site. The Project would not be visible from area public hiking trails or observation points.

Agriculture

Approximately 68.6 acres of the Project Limit of Disturbance (LOD) is mapped as Prime Farmland Soil with an additional 12.5 acres mapped as Soils of Statewide Importance. No portions of the Project site are enrolled within DOAg's Public Act 490 Program nor have any development rights to the Project site been acquired by the State. The Project would not be participating in the DOAg Virtual Net Metering program since there is no on-site use of generated power. All generated power is being sold to UI and Eversource.

PSC met with DOAg representatives on November 29, 2017, prior to submitting the Petition to the Council. DOAg did not offer any specific Project modifications to PSC at that time. Subsequent to the meeting, PSC reduced the impact on agricultural soils by moving some Project areas out of certain fields due to nearby sensitive environmental resources.

DOAg's June 25, 2018 comments to the Council generally presented concerns related to agricultural lands taken out of active production, potential harm to agricultural soils, proper testing and restoration of farmland soils after project decommissioning and that financial contributions be made to either buy farmland or restore farmland within the North Stonington/Stonington area. This area of the state contains numerous farms and thousands of acres of farmland.

During site operation, agriculture activities could continue in areas outside of the Project perimeter fence. Development of the project would not adversely affect the productivity of the soils. The Project can be considered a temporary use of the Site, with minimal disturbance to the arable integrity of the farmland soils. If the landowner chooses, farming could resume in the Project area after Project decommissioning. The land lease agreements do not require the restoration of any Project area soils to prime agricultural conditions.

Wetlands

Twelve distinct wetland areas are located within and bordering the Project site. These wetlands consist of complexes of hillside seep wetlands, interior intermittent/perennial watercourses, bordering wetlands to the Pawcatuck River, isolated pocket wetlands, and hummock/hollow depressional wetlands. Most of the wetlands are oriented in a north-south direction, serving to divide the existing agricultural fields into distinct areas. All of the wetlands resources identified on and proximate to the Project site have experienced varying degrees of anthropogenic influence resulting from past and present agricultural use.

The Project layout would have an average 44-foot wetland setback, but the setback distance would vary widely depending on location and current site use. In some areas, the LOD would be at the wetland edge, but in other areas the LOD would be over 100 feet from wetlands. Generally, minimal wetland buffers were used in areas where existing agricultural fields extend up to the wetland edge. Wider project buffers were used for more ecologically sensitive wetlands, as determined by the field surveys conducted by a Connecticut-registered Soil Scientist. For temporarily disturbed soils within 25 feet of wetlands, PSC would apply meadow seed mix with a focus on native grasses and forbs to enhance wetland buffers. The Town has a 100-foot upland review area from the edge of a wetland, but this review area does not restrict construction activities.

With the exception of a proposed access drive crossing one of the wetlands (Wetland 1), the Project would not result in direct wetland impacts. The Wetland 1 crossing is necessary to access the southwestern portion of the solar field and the electrical transmission interconnection facility. The wetland crossing would occur where the wetland narrows to minimize permanent wetland impacts, which would total $\pm 1,650$ square feet. The gravel road crossing would feature three 12-inch corrugated plastic pipes to convey surface flows and avoid any upstream or downstream hydraulic impacts.

Selective tree clearing, totaling 4.8 acres, would occur in three forested wetlands to prevent solar array shading. The wetland clearing includes 2.54 acres of Wetland 1, 1.44 acres of Wetland 2 (located in between two solar field areas of the south solar field) and 0.85 acres of Wetland 5 (located southwest of the northeast solar field). Clearing in wetlands would be performed by hand cutting or the use of mechanical cutting equipment, with trees cut to two to three inches above grade. If mechanical cutting equipment is used, temporary matting would be installed to reduce disturbance to wetland soils, and low growing vegetation. Tree tops and logs would be removed, but some slash would remain to provide for wildlife cover. Stumps would remain in place. Some trees may be cut to provide tree snags to enhance wildlife value.

The on-site forested wetlands are too small and isolated to function as bird migratory pathways; however, the forested wetlands could be utilized by some forested wetland dependent species such as the brown creeper and Louisiana waterthrush, both listed in the Connecticut Wildlife Action Plan (WAP) as Important and Very Important species, respectively. Wetland clearing would create habitat for shrub dependent species such as the American woodcock, listed as a Most Important species in the WAP.

One vernal pool was identified on the Project Site, located within a north-south oriented forested wetland (Wetland 4) that extends between two arms of the northwest solar field. Spotted salamander and wood frog egg masses were identified in the pool during a survey in the Spring of 2017. At the time of the survey, the pool was approximately 2,800 square feet in size. Currently, approximately 50 percent of the vernal pool envelope (VPE) and 82 percent of the vernal pool critical terrestrial habitat (CTH) area consists of agricultural fields. To reduce potential Project effects on the vernal pool, PSC would not perform any work within the 100-foot VPE and would restore currently disturbed areas of the VPE with appropriate seed mixes. PSC would enhance vernal pool hydrology by stabilizing the vernal pool outlet which is currently impacted by a farm road. PSC would enhance the CTH by excluding an approximate 4 acre agricultural field located southwest of the vernal pool from the Project footprint. This field, comprising 9.5 percent of the CTH, would be seeded with a shrub mix to promote vegetative growth that would eventually function as habitat for vernal pool species.

PSC would implement a wetland and vernal pool protection plan to reduce impacts to wetland/vernal pool habitats and species during construction. The protection plan includes construction work area isolation, seasonal work restrictions, site inspections, herpto-fauna sweeps, contractor education and reporting. Additionally, PSC would adhere to recommended seasonal restrictions when performing post-construction project maintenance activities.

Wildlife

DEEP submitted a preliminary Natural Diversity Database (NDDB) assessment to PSC on July 17, 2016 which identified the following state-listed species that occur in the Project area: sparkling jewelwing, eastern pearlshell, red bat and Eastern spadefoot toad. PSC is in the process of compiling additional materials, including a spadefoot toad study and mitigation plan, for submission to DEEP. As part of the DEEP required General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) for the Project, PSC is required to obtain a written determination from DEEP that the Project “does not threaten the continued existence of any state or federal species listed as endangered or threatened (“listed species”) or result in the destruction or adverse modification of any habitat associated with such species.”

The red bat, a state listed species of special concern, may occur in the Project site as it utilizes forest edges and clearings and large diameter trees for roosting. Suitable habitat for this species, including those used for both summer roosting and feeding, occurs throughout the Project site. To mitigate potential construction related impacts to the red bat, PSC would avoid tree clearing work between May 1 and August 15.

Studies initiated by PSC in May 2017 indicate that the spadefoot toad, a state listed endangered species, occurs on the Site property. Most of the recorded spadefoot activity occurs in an agricultural field at the north end Project site where a spadefoot toad breeding pool impacted by agricultural activities is located. Forest surrounds the field on the east, south and north sides and a cemetery is located on the west side. The field surveys determined spadefoots primarily utilize the field, forest edge and cemetery areas as habitat.

Based upon consultation with DEEP, PSC would implement spadefoot toad mitigation measures and a long-term population monitoring program. The mitigation measures include restoration of the breeding pool; establishment of a ± 10.5 acre “no build zone” encompassing the field area, cemetery and the edge forest where the majority of spadefoot activity was detected during the study. The “no-build” field area would be planted with native shrub vegetation and subsequently managed to provide optimal spadefoot habitat. Additionally, the solar field east of the breeding pool would feature 20-foot wide solar array aisles instead of the 9.5-foot wide aisles used elsewhere on the project site, potentially creating favorable habitat for spadefoots. PSC would conduct post-construction spadefoot monitoring within the widely spaced solar array area to determine if spadefoots would utilize this semi-disturbed area as habitat.

The two other species listed by DEEP as occurring within the Project area, the sparkling jewelwing (damsel fly) and the eastern pearlshell mussel, are riverine species and would most likely occur at the Pawcatuck River, along the south site boundary. PSC would maintain a 200-foot buffer between the Project LOD and the Pawcatuck River, and thus, no adverse impact to these species is likely.

According to the U.S. Fish & Wildlife Service (USFWS) the range of the northern long-eared bat (NLEB), a federally-listed Threatened Species and a state listed endangered species, encompasses the entire State of Connecticut. However, the proposed project would not be located within 0.25 mile of a known NLEB hibernaculum or within 150 feet of a known occupied maternity roost tree, and thus, no adverse impacts to NLEB are anticipated.

The Project site is within a New England Cottontail rabbit “focus area” which is part of a program established by the USFWS, DEEP and other organizations to reduce shrub habitat loss for this declining species. Currently, the Project site contains little existing optimal habitat for the rabbit. Project development would affect approximately 2.8-acres of potential existing habitat. Establishment of the 10.5-acre spadefoot “no build zone” may be able to provide additional shrub habitat for this rabbit species.

Forest and Parks

The Project development area, represented by the LOD, encompasses 144 acres and consists of the 118-acre fenced solar field area, temporary staging areas, access drives, stormwater control features, and peripheral areas managed to prevent tree shading of the Project. Approximately 95 acres of forest would be cleared to develop the Project. This includes 76 acres of clearing and grubbing to develop the solar field areas, approximately 2.5 acres to construct the interconnection tie line, and approximately 19.5 acres of clearing, but with no grubbing, to prevent solar array shading.

An existing 90-acre core forest block extends through the eastern half of the Site property and onto an abutting property. Development of the Project would clear portions of the core forest, resulting in the creation of two separate smaller core forest blocks that total 36 acres. Using UCONN Center for Land Use Education and Research (CLEAR) criteria, the existing 90-acre core forest block is classified as small (<250 acres). According to CLEAR, these small core forest areas do not provide quality habitat to support forest-interior birds. Given that the existing core forest currently offers marginal interior-forest habitat, clearing associated with the Project would have a minimal effect on interior-forest bird species.

There are no public parks located on or abutting the Site property.

Air Quality

Operation of the facility would not produce air emissions of regulated air pollutants or greenhouse gases and therefore no DEEP air permit would be required. During construction of the Project, any construction related air emissions would be temporary and controlled by appropriate mitigation measures. A carbon debt analysis accounting for the loss of 95 acres of forest to develop the site, and the anticipated service life of the facility, indicates net carbon reduction would begin after 45 days of Project operation. Thus, the proposed Project would result in an overall net reduction in carbon dioxide emissions to the environment.

Water Quality

The project is not located within a DEEP-designated aquifer protection area and no known private wells are nearby. The Project is outside of Federal Emergency Management Agency designated 100-year and 500-year flood zones. In its June 25, 2018 correspondence, DEEP noted that the Pawcatuck River, located along a portion of south property line, experiences chronic flooding problems. The Project would be designed to mimic or improve upon pre-construction stormwater volumes or peak flows and therefore would not exacerbate existing flooding issues.

Groundwater beneath the Project site is classified by DEEP as "GA". A "GA" classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment. Designated uses in GA-classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically-connected surface water bodies.

As noted in DEEP's June 25, 2018 correspondence, the Project site is within the Pawcatuck River Sole Source Aquifer, a U.S. Environmental Protection Agency designated 300 square mile area in Connecticut and Rhode Island. The Project would have properly designed stormwater control features to prevent deterioration of aquifer water quality.

Stormwater

Development of the Project would disturb over one acre of land and therefore would require registration for a DEEP General Permit. The General Permit requires developers and builders to implement a Stormwater Pollution Control Plan (SWPCP) to prevent the movement of sediments off of construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete.

All aspects of Project construction phasing, erosion and sedimentation control methods, and temporary and permanent stormwater control features are reviewed and approved by DEEP as part of the General Permit registration. No site construction activities can occur until the General Permit is issued. DEEP has the authority to enforce compliance with the SWPCP.

The SWPCP requires appropriate construction phasing and the establishment of erosion control features in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and the *2004 Connecticut Stormwater Quality Manual*. In its June 25, 2018 correspondence to the Council, DEEP attached a document entitled *Stormwater Management at Solar Farm Construction Projects, September 8, 2017* that provides guidance to solar farm project developers for permit registration and SWPCP preparation.

PSC has submitted a Stormwater Engineering Concept Report using DEEP General Permit criteria that examined the hydrological response of the proposed post-construction site layout to determine what stormwater control features are necessary to mimic existing pre-construction drainage conditions. The preliminary Project design indicates minimal grade changes are required to install the tracker system across the majority of the site, and perimeter swales and infiltration trenches would be used for stormwater control

in most areas. In the steeper northeast portion of the site, five permanent stormwater detention basins are proposed around the periphery of the solar field.

Alternate Project Site Layout

During Council review of the Project, two alternative Project Site layouts were explored to address environmental and stormwater management concerns. These alternate layouts are described below.

Alternate 1

To reduce the amount of clearing within the three forested wetlands, PSC could reconfigure the site by utilizing one of the temporary construction laydown areas and other smaller areas of the site for placement of the solar arrays. These adjustments would not require clearing activities in Wetlands 1 and 5, and would reduce the amount of selective clearing within Wetland 2 to 0.37 acres. However, the reconfiguration would require additional clearing along a wooded strip of land that separates several field areas and contains a narrow wetland (Wetland 3). Wetland 3 is a narrow seep that extends for approximately 780 feet along the wooded edge of several open corn fields. It contains a small intermittent watercourse as it extends south before terminating without any connection to other wetland areas. The reconfiguration of the Project would also minimally alter some of the other areas of clearing necessary to develop the site. (Refer to the attached Alternate 1 Project Site layout - from PSC Project layout Map EXH-C)

Alternate 2

During the Council's energy/telecommunications meeting held on September 27, 2018, concerns were raised regarding potential construction and stormwater management issues of the northeast solar field located on the presently forested hillside. Some portions of the hillside have slopes of 18 percent or greater. As proposed, PSC would grade this area so that no slope would exceed 15 percent. The Council requested that PSC examine the feasibility of removing as many of the panels as possible from the hillside. PSC submitted a potential revised layout on October 12, 2018 (refer to attached Alternate 2 Project Site layout - from PSC Array Plan WJ111).

The Alternate 2 layout includes relocation of portions of southwest and northeast sections of the northeast solar field to other sections of the site, principally in the field and forested area between Wetland 4 and Wetland 6 and in the western extent of the proposed spadefoot toad "no build zone". The Alternate 2 northwest and south solar field areas generally match the Alternate 1 layout.

The relocation of the solar arrays from the northeast section of the hillside would create a larger buffer for stormwater draining off of the hillside to infiltrate before reaching a detention basin and Wetland 9. Relocation of the solar arrays from the southeast section of the hillside would avoid construction at the edge of sustained steep grades that slope downgradient to an abutting private property.

The northeast solar field would require grubbing and grading in order to properly install and operate the mechanical racking system. It is not possible to install the mechanical racking system on non-grubbed, unstabilized grades.

Other areas of the site property were not deemed suitable given on-site historic and environmental constraints. The field area between Wetland 3 and 4 could be used for solar arrays but extensive clearing in existing forested wetlands that contain a vernal pool would be required to prevent project shading, and thus, PSC decided to avoid this area.

Decommissioning Plan

At the end of its useful life, the Project would be decommissioned in accordance with the requirements of the Property leases and a decommissioning plan. Although PSC does not have a unilateral right to extend the operational life of the facility beyond the 25-year term of its negotiated land contracts, it is possible that technological advances may allow for economical equipment replacements that could prolong the Project's useful life. PSC and the landowner have agreed to a decommissioning bond that would be established for the Project, thereby guaranteeing its proper and complete removal from the property at the termination of the land contracts.

All decommissioning and restoration activities would adhere to the requirements of appropriate authorities having jurisdiction, and would be performed in accordance with all applicable federal, state and local permits and approvals. Decommissioning tasks include the removal of all equipment and structures, including subsurface structures to a depth of three feet, fence removal, trench remediation, and aggregate base rock removal. After excavation and removal of underground materials and foundations, all excavated areas would be filled, compacted, and re-graded to return the site to pre-project conditions to the extent feasible or per landowner direction. Overall site rehabilitation and reseeded activities would depend on the subsequent use of the Project Site.

Due to the presence of the spadefoot toad, additional surveys would be conducted prior to decommissioning to determine if spadefoots are utilizing developed solar field areas. If spadefoots are found within a solar field area, protective procedures would be incorporated into the decommissioning plan to reduce potential impacts to the on-site spadefoot population.

Conclusion

The Project is a distributed energy resource with a capacity of not more than sixty-five megawatts, meets DEEP air standards, meets DEEP water quality standards contingent upon PSC obtaining a General Permit, and would not have a substantial adverse environmental effect. The proposed Project will not produce air emissions, will not utilize water to produce electricity, is designed to minimize and mitigate environmental impacts, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources.

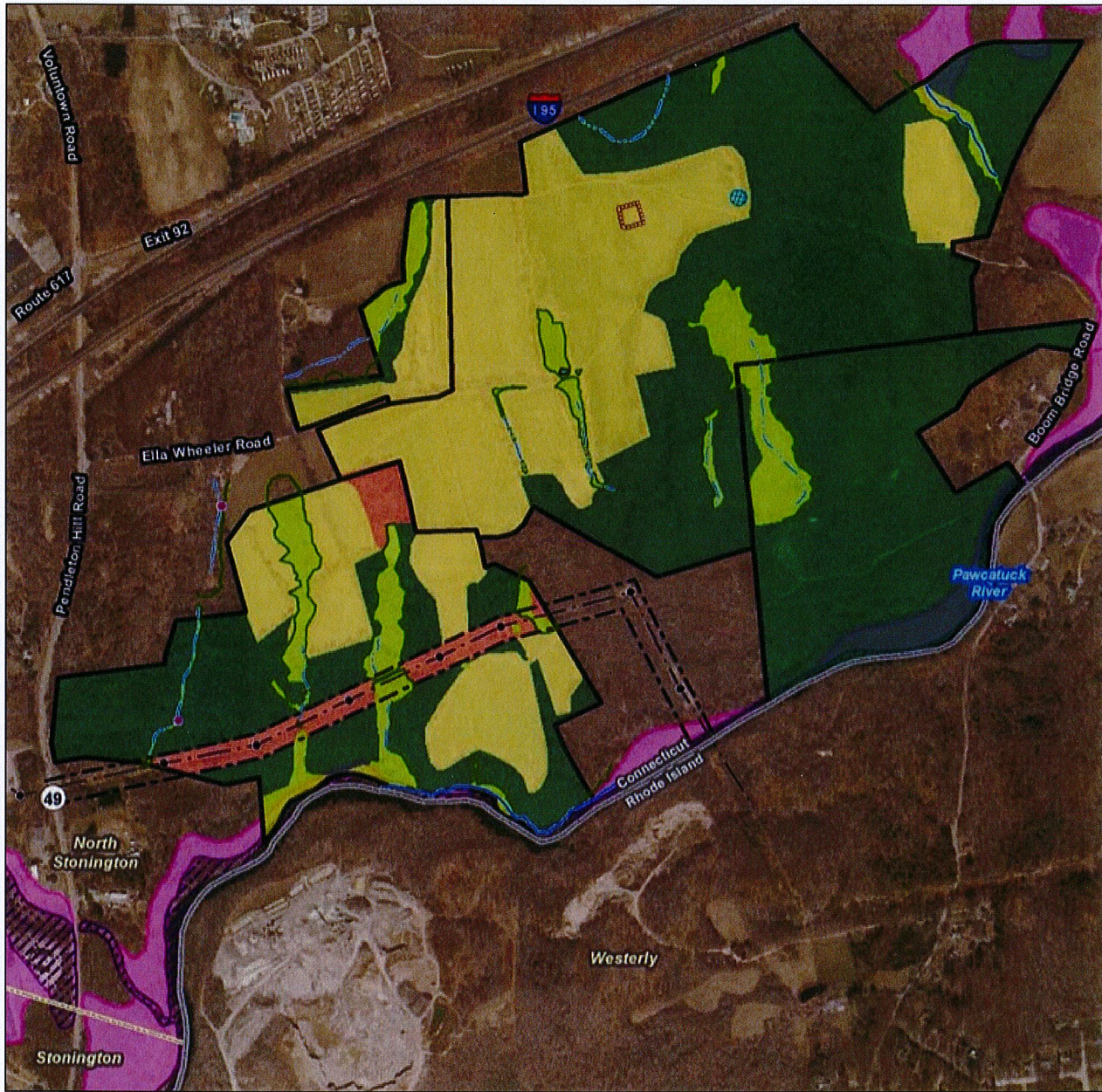
Recommendations

Staff recommends inclusion of the following condition;

1. The Petitioner shall prepare a Development and Management Plan (D&M) for this facility in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of North Stonington for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) A final site plan including, but not limited to, final solar panel and tracking system design, access roads, electrical interconnection, fencing, equipment pads, and post-construction stormwater controls, as designed in the Department of Energy and Environmental Protection (DEEP)-approved Stormwater Pollution Control Plan (SWPCP);
 - b) Submission of a copy of the DEEP-approved SWPCP;
 - c) Construction site plans that comply with the DEEP-approved SWPCP and include, but are not limited to, site clearing, grading, site phasing, construction laydown areas, temporary access roads, erosion and sedimentation controls, concrete washout stations, and details regarding construction-related environmental mitigation;
 - d) Final seeding plan for all disturbed areas of the site;

- e) Construction work hours and days of the week;
- f) Details of any post-construction environmental mitigation measures; and
- g) Details of post-construction site maintenance and vegetation management.

Existing Conditions and Habitats



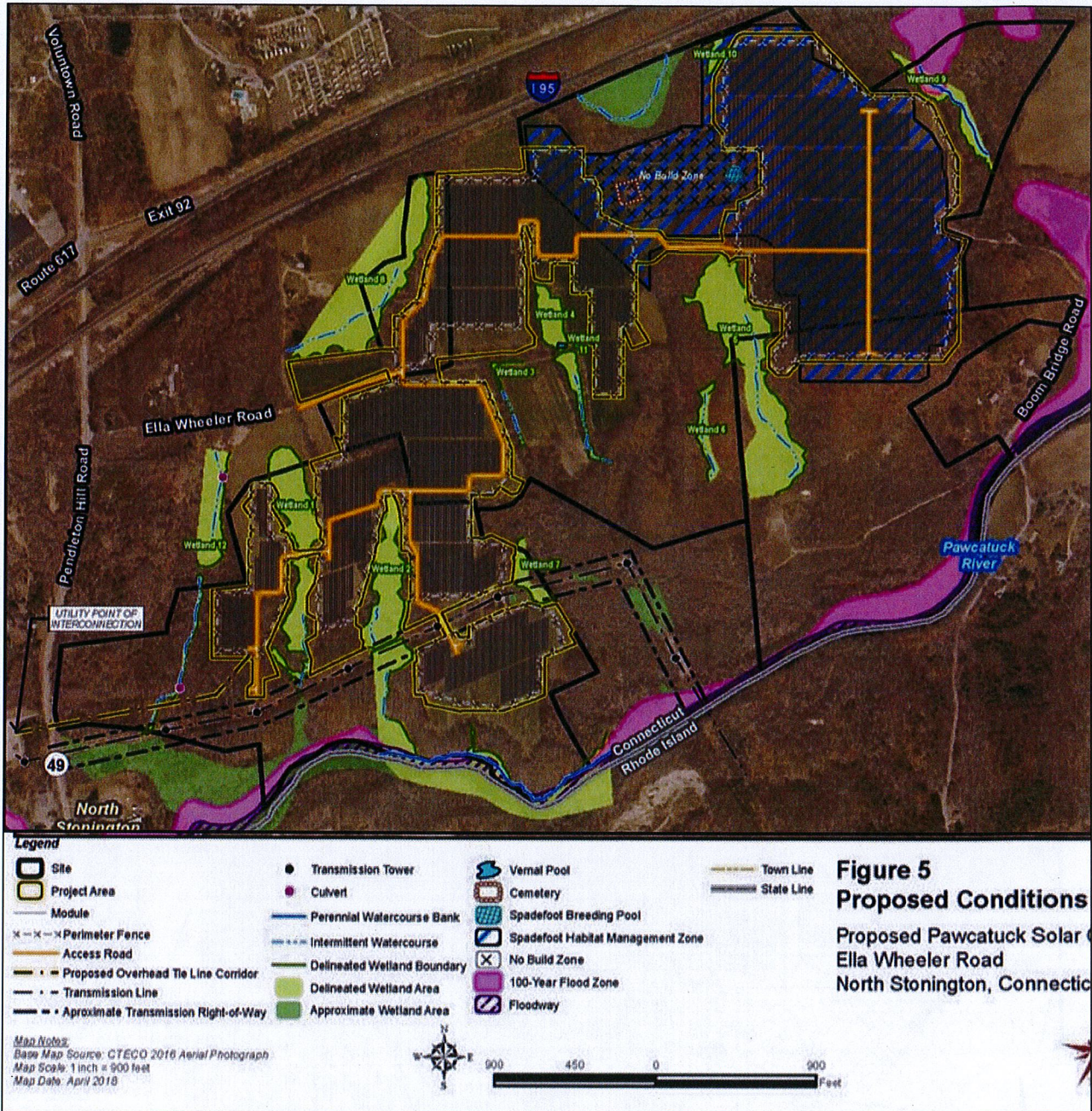
<p>Legend</p> <ul style="list-style-type: none"> Site Transmission Line Approximate Transmission Right-of-Way Transmission Tower Culvert Perennial Watercourse Bank 		<ul style="list-style-type: none"> Intermittent Watercourse Delineated Wetland Boundary Vernal Pool Spadefoot Breeding Pool Cemetery 		<p>Habitat Cover Type</p> <ul style="list-style-type: none"> Agricultural Field Old Field Upland Forest Wetlands 		<ul style="list-style-type: none"> 100-Year Flood Zone Floodway Town Line State Line 	
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**Figure 3
 Habitat Cover Type Map**
 Proposed Pawcatuck Solar Center
 Ella Wheeler Road
 North Stonington, Connecticut

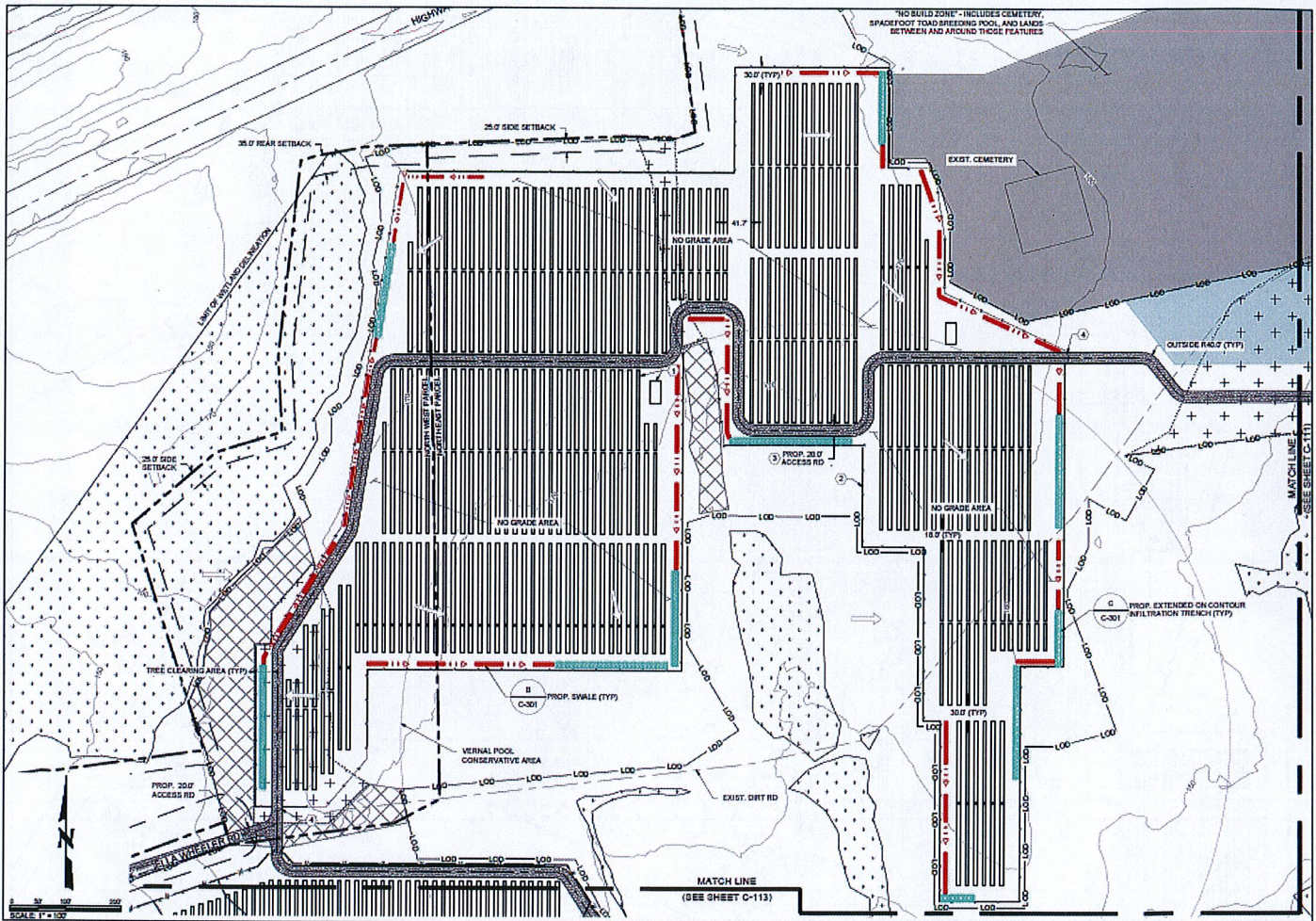
Map Notes:
 Base Map Source: CTECO 2018 Aerial Photograph
 Map Scale: 1 inch = 900 feet
 Map Date: April 2018

900 450 0 900 Feet

Proposed Site Layout



Proposed Site Plan Detail-Northwest Area



	PROPERTY LINE		PROP. ACCESS ROAD
	SETBACK		PROP. FENCE
	STREAM		LIMIT OF DISTURBANCE
	WETLAND DELINEATION BY ALL POINTS TECHNOLOGY EXIST. MAJOR CONTOUR		PROP. SWALE
	TREES TO BE CLEARED SELECTIVELY		DIRECTION OF STORM RUNOFF
	TREES TO BE CLEARED AND GRUBBED		NO BUILD ZONE
	PROPOSED SOLAR TRACKER		WIDE ARRAY SPACING ZONE

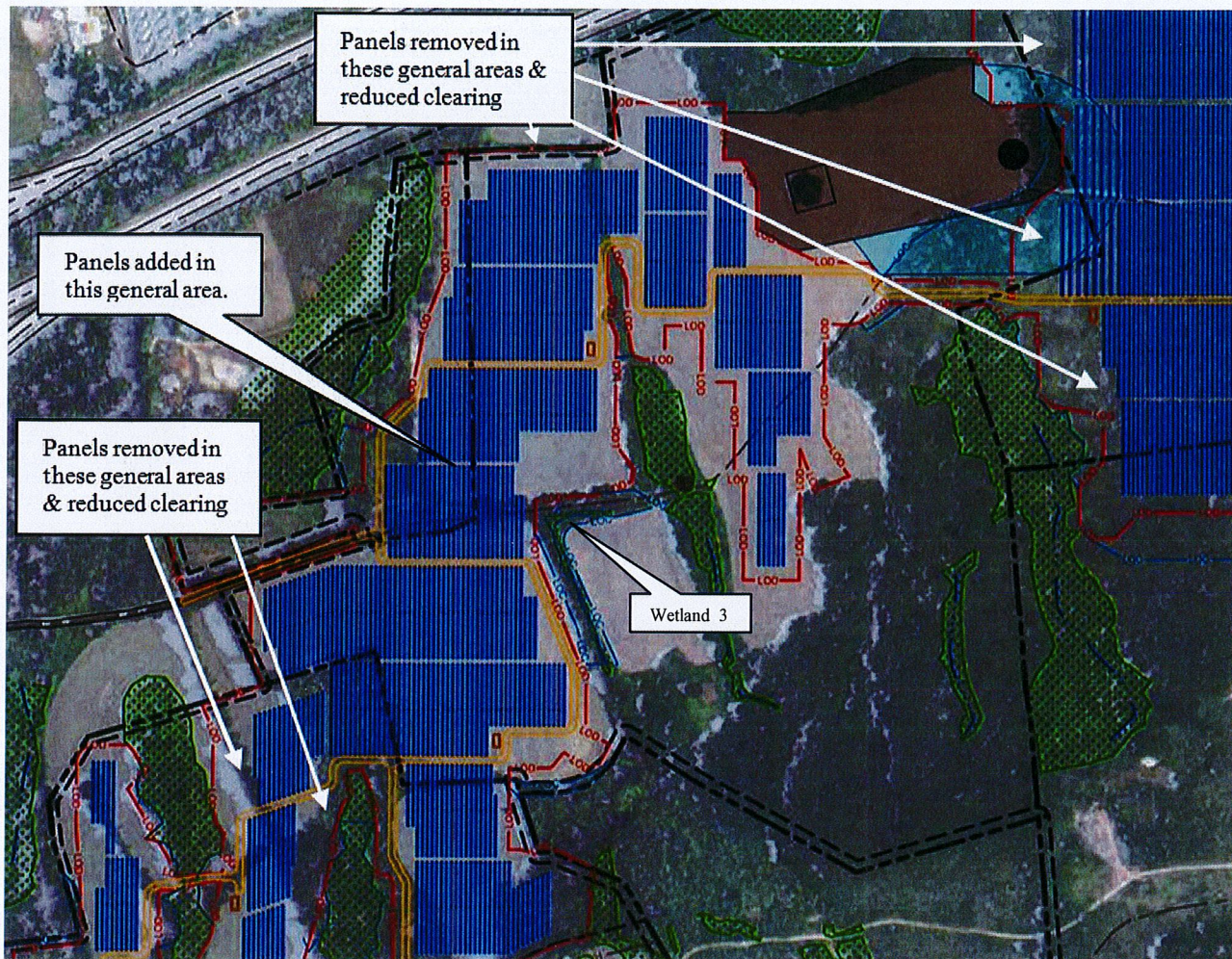
Proposed Site Plan Detail-South Area



	PROPERTY LINE		PROP. ACCESS ROAD
	SETBACK		PROP. FENCE
	STREAM		LIMIT OF DISTURBANCE
	WETLAND DELINEATION BY ALL POINTS TECHNOLOGY EXIST. MAJOR CONTOUR		PROP. SWALE
	TREES TO BE CLEARED SELECTIVELY		DIRECTION OF STORM RUNOFF
	TREES TO BE CLEARED AND GRUBBED		NO BUILD ZONE
	PROPOSED SOLAR TRACKER		WIDE ARRAY SPACING ZONE

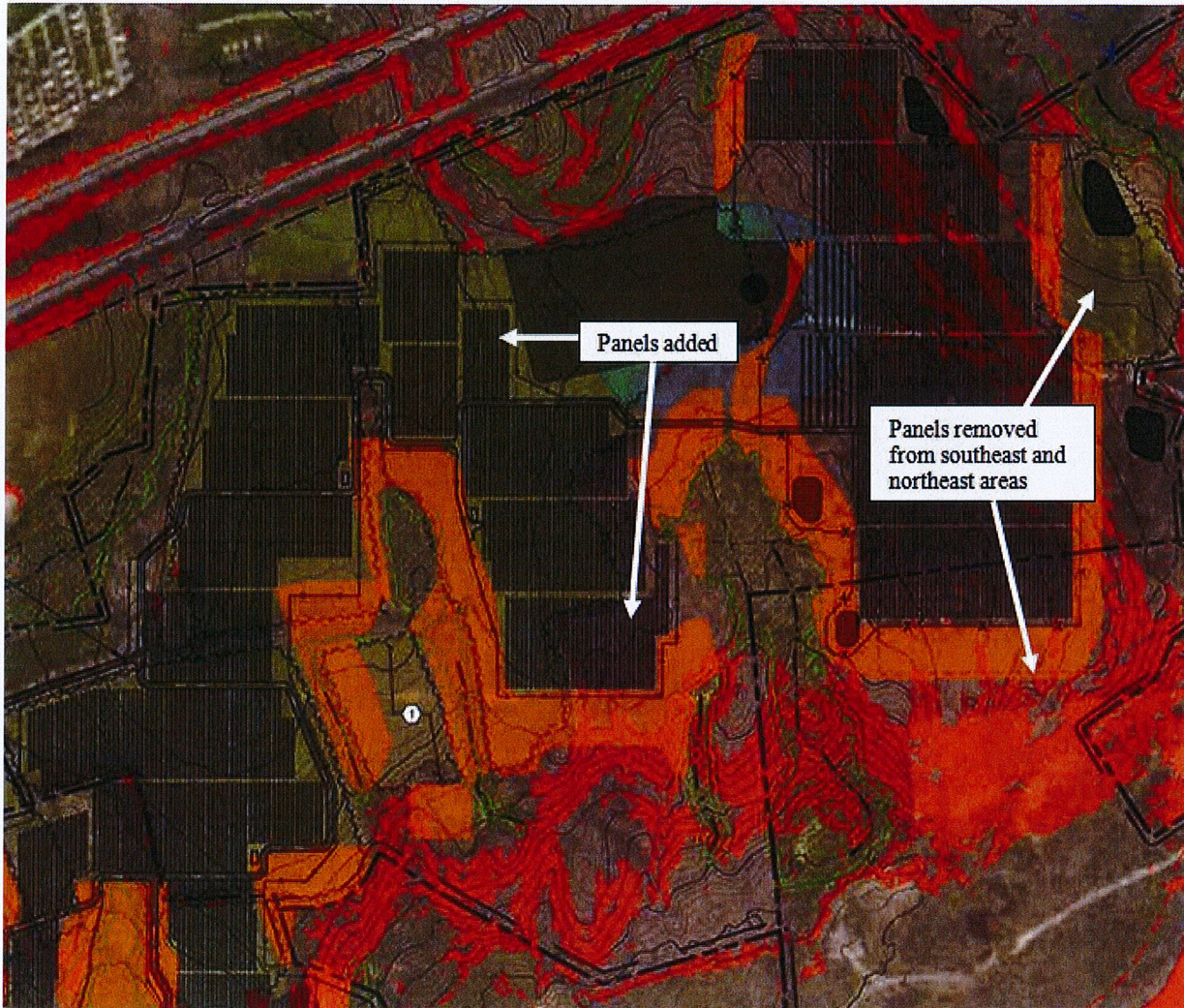
Alternate 1 Site Layout (partial)

Alternate 1 partial plan with major changes noted (not all changes noted)

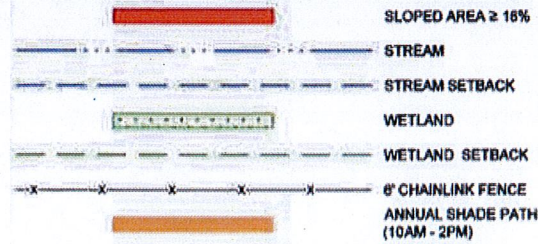


Alternate 2 Site Layout (partial)

Alternate 2 partial plan with major changes noted (not all changes noted)



① ARRAY OF 257 KW NOT FEASIBLE. ARRAY FEASIBLE IN THIS AREA ONLY WITH REMOVAL OF TREES IN WETLAND TO THE WEST.



ATTACHMENTS

DEEP Comments to Council, dated June 25, 2018

DOAg Comments to Council, dated June 25, 2018



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

June 26, 2018

TO: Parties and Intervenors

FROM: Melanie Bachman, Executive Director *MAB*

RE: **PETITION NO. 1345** – Pawcatuck Solar Center LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 15 MW AC solar photovoltaic electric generating facility on approximately 353 acres comprised of four abutting parcels located east of Pendleton Hill Road, north of the Pawcatuck River and south of Interstate-95 with proposed access from Ella Wheeler Road, and associated electrical interconnection to Eversource Energy's Shunock Substation west of Pendleton Hill Road in North Stonington, Connecticut.

Comments have been received from the Connecticut Department of Energy and Environmental Protection, dated June 25, 2018. A copy of the comments is attached for your review.

MB/RDM/lm

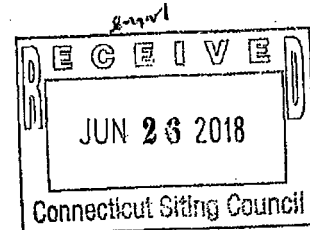
c: Council Members

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June 25, 2018

Robert Stein, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051



RE: 15-MW Photo-voltaic generating facility
Pawcatuck Solar Center, LLC
North Stonington, Connecticut
Petition No. 1345

Dear Chairman Stein:

Staff of this department have reviewed the above-referenced petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction of the proposed photo-voltaic generating facility in the southeastern corner of North Stonington off Ella Wheeler Road. A field review of the site was conducted on June 19, 2018. Based on these efforts, the following comments are offered to the Council for your use in this proceeding.

DEEP Small Scale Clean Energy Request for Proposals

Pawtucket Solar Center, LLC submitted this 15 MW project into the Small Scale Clean Energy Request for Proposals (RFP) issued by DEEP. Connecticut solicited and selected renewable energy projects issued pursuant to Section 1(b) of Connecticut Public Act 15-107, An Act Concerning Affordable and Reliable Energy (P.A. 15-107) and Sections 6 and 7 of Connecticut Public Act 13-303, An Act Concerning Connecticut's Clean Energy Goals (P.A. 13-303). Bringing grid-scale renewable energy projects on line is an important step forward towards a cheaper, cleaner, and more reliable energy future for the ratepayers of Connecticut. In the most recent legislative session, Connecticut committed to procuring 40% of its electricity from Class I renewable sources by 2030. Connecticut also committed to a mid-point reduction of carbon emissions of 45% below 2001 levels by 2035 on the way to attaining the state's longer term goal of an emissions reduction of 80% below 2001 levels by 2050. Grid scale renewable energy projects are essential to maintaining compliance with these statutory commitments. In reviewing the projects submitted pursuant to this RFP, DEEP applied both a quantitative and a

qualitative analysis to arrive at a final score for each project. After reviewing all the projects submitted through the RFP process, DEEP selected the Pawtucket Solar Center project as one of the projects authorized to negotiate a long-term power purchase agreement with the utilities, Eversource Energy and The United Illuminating Company.

Project Site

Pawcatuck Solar Center, LLC assembled four parcels totaling 353 acres for this project, of which 144 acres will be within the limits of disturbance for project staging and construction, and, of these, 118 acres will host the actual facility. The 15-MW solar generating facility, employing 61,000 photo-voltaic panels, is proposed to be sited on a mixture of agricultural and forest land south of Interstate 95, northwest of the Pawcatuck River and east of Route 49 in the southeastern corner of North Stonington.

Though portions of the site approximate level, much or most of it is gently to moderately sloped, with portions of the southern fields in particular falling into the latter category. The northeastern portion of the proposed solar farm footprint exhibits moderate to steep slopes. Several linear forested wetland areas aligned in a north-south direction divide the agricultural portion of the site into smaller parcels.

Several portions of the site possess notable 'aromatic' qualities from the disposal of manure, principally along the fringes of the agricultural fields. This is most evident at the eastern end of the circular turnaround at the end of Ella Wheeler Road, along the western cornfield edge north of the terminus of Ella Wheeler Road, and along the eastern edge of the northeastern cornfield immediately north of the spadefoot toad breeding pool. The manure has not been applied and spread as a soil conditioner but has simply been deposited in these areas.

On the date of the DEEP field review, the vernal pool had a large population of tadpoles of 1" or less in length. The vernal pool has an informal graveled spillway constructed though the farm road to convey overflow from it to the intermittent watercourse to the south.

A couple additional observations from the field are that a hen turkey and four poults were observed at the turnaround at the end of Ella Wheeler Road and a group of five grown turkeys were seen in the southernmost cornfield on June 19. Also, for the crossing of Wetland 1 that is necessary to accommodate the access road to the northwestern portions of the solar array, it is not clear from the field exactly at what point the road will cross this wetland but it appears the crossing might be contemplated in an area at which a dense, continuous cover of grape vines overlays and completely hides the underlying herbaceous and shrub cover. Though this area might not be aesthetically attractive, it does provide excellent cover for birds and small mammals. If the road crossing would fall in this short area, it is requested that the crossing be moved slightly to either to the north or south where, in either location, it would impact red maples in a more open setting.

Stormwater Management

As with most other solar farm projects, stormwater management is a dominant issue, and it is certainly a concern with this project, particularly for the northeastern portion of the project with the need to clear and grub the existing forest on this steeply sloped area and to stabilize the area before the photo-voltaic array is installed. DEEP would advise against siting the solar array on such steeply sloped areas. Until DEEP sees the design for the stormwater management controls which reflect how the applicant can logistically construct the project, especially the stormwater system, within the proposed timeframe, we cannot provide comments on that aspect of the project. To date, no stormwater permit application has been received by DEEP from Pawcatuck Solar Center, LLC.

The critical consideration in successful stormwater management is the phasing of the site disturbance and then achieving and maintaining site stabilization before and during construction. Adherence to the submitted and approved stormwater plans has been an issue in many cases. Clearing and grading all of the project site at once, though easier and less expensive for a project developer, is often in conflict with the schedules in the stormwater management plans, which call for work in phases.

The construction schedule in the Petition calls for mobilization and land clearing to begin in the first quarter of 2019, with construction and array installation to be done by fall of 2019, and testing and project commissioning to occur in late 2019. A compressed project construction timeframe frequently does not allow for the site to be stabilized before construction work begins. This has been the case mostly notably at solar farm projects in Sprague and Pomfret, where Cease and Desist Orders have been issued on construction activities. The record of solar developers achieving what they have represented to the Siting Council, and to DEEP, particularly for the larger facilities, has not been encouraging.

The challenges being faced in achieving successful stormwater management at solar farm sites, as well as guidance to hopefully achieve better outcomes, are discussed in the attached guidance document on solar farm stormwater management. DEEP would strongly advise planning for a longer construction schedule to allow for appropriately phased implementation of stormwater controls and site stabilization.

Natural Diversity Data Base

The Pawcatuck Solar Petition does not contain any correspondence with the DEEP Natural Diversity Data Base (NDDDB) program. A preliminary assessment was issued for this project in April 2017 identifying the four listed species referenced on page 23 of the Petition. The preliminary assessment letter is valid for a period of one year. The preliminary assessment letter requested site surveys for the listed species and protection strategies for the species identified as present or potentially present.

Since the preliminary assessment letter was issued in April 2017, there has been no contact of any kind from representatives of the Pawcatuck Solar Center with the NDDDB program. The Petition presents evidence that, for the eastern spadefoot toad in particular,

protection and habitat enhancement strategies have been formulated. However, the applicant needs to contact the NDDB program to provide the results of its survey work and its protection strategies and to request an update of the now-expired preliminary assessment. Of special relevance to the applicant is the fact that no Stormwater General Permit can be issued until the NDDB sign-off is obtained. Dawn McKay of the DEEP NDDB program should be contacted at (860)424-3592 or at Dawn.McKay@ct.gov in this regard. Please also note that a response to the Connecticut Siting Council with the survey and protection information does not constitute a reply to the NDDB program which specifically requested the information.

Interconnection to Shunock Substation

The interconnection from the Pawcatuck Solar Center to Shunock Substation is short and direct. There is nothing particularly noteworthy about the transmission line corridor between these two termini. Other than a mention on page 12 of the Petition that approximately five 40' poles will be needed to effect the interconnection, the Petition contains no description of it, but it seems logical to assume the new line would run on the northern side of the right-of-way and may likely involve a small amount of additional tree clearing there as the cleared portion of the right-of-way is not overly wide.

Miscellaneous Application Commentary

The last paragraph of page 28 of Exhibit G includes 'proposed landscaping' as one measure that will shield the solar farm from views from surrounding properties. No details or discussion of such additional landscaping is found elsewhere in the Petition. The proposed landscaping is listed as being in addition to the retention of some portion of the existing perimeter vegetation. What measures are envisioned and where would such landscaping occur?

The Engineer's Notes in Exhibit C, opposite Site Plan C-101, contain numerous references to meeting with county staff, approval by the county engineer, approval of easements by New London County, requesting county acceptance of improvements, etc. Such instructions are not applicable to this project. Site Plan C-101 contains a note that parcel boundaries were provided from the New England Assessor's tax maps. This is also likely erroneous.

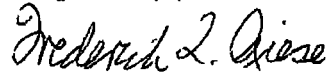
The introduction to the REMA evaluation of the vernal pool (Appendix B of Exhibit G) describes the vernal pool as 'encompassing approximately 277 acres'. This figure is off by approximately four orders of magnitude.

Potentially relevant to Section 3.19, *Recreation Areas*, of Exhibit G, the Wood-Pawcatuck River Watershed has received Congressional approval for a Wild and Scenic Rivers Study. This is the first step in a potential designation of the Wood-Pawcatuck River system as a Wild and Scenic River. The watershed also received EPA Sole Source Aquifer Designation in 1988. Lastly, and more relevant to the Stormwater Management General Permit for the project which will look to achieve no net increase in post-project

instantaneous discharge rates from the site, many locations along the Pawcatuck River have experienced chronic flooding problems as were detailed in an August 2017 *Wood-Pawcatuck Watershed Flood Resiliency Management Plan* prepared by Fuss & O'Neill.

Thank you for the opportunity to review this petition and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to call me at (860) 424-4110.

Respectfully yours,



Frederick L. Riese

Senior Environmental Analyst

cc: Commissioner Rob Klee

Attachment: (1)



Stormwater Management at Solar Farm Construction Projects September 8, 2017

Solar farms are on-the-ground installations of arrays of photovoltaic cell panels, supporting structures and related equipment for the production of electricity. As with other types of construction projects, the construction of solar farms can involve land clearing, grading, excavation, trenching, dewatering and similar activities that create land disturbances which potentially result in soil erosion and sediment discharges polluting wetlands, streams and other surface waters. Construction-related land disturbances of 0.5 acres or larger are regulated in Connecticut pursuant to the Connecticut Soil Erosion and Sediment Control Act under Sections 22a-325 to 22a-329, inclusive, of the Connecticut General Statutes ("CGS"). Construction-related land disturbances of one (1) acre or larger are also regulated under CGS Section 22a-430 and under Section 402(p) of the federal Clean Water Act and the National Pollutant Discharge Elimination System ("NPDES") program. Prior to the start of such regulated activities, authorization is required from local authorities and, for larger projects, the Connecticut Department of Energy and Environmental Protection ("Department"). Construction projects involving five (5) or more acres of land disturbance require an individual NPDES discharge permit from the Department, or may be eligible to register for coverage under the Department's NPDES General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit).

The Department has encountered repeated problems associated with solar farm construction projects covered under the general permit, from the registration process through construction activities. Although in no way an exhaustive list, the following are common problems associated with solar farm general permit registration applications and ways to address such problems:

- Applicants have been submitting registration applications that lack the requisite information or the requirements necessary for authorization under the general permit. The Department requires a complete and sufficient application when a registration application is filed, and may reject any registration application it deems to be incomplete or insufficient.
- Applicants are not adhering to the sixty (60) day/ninety (90) day time frame for Department review as required by Section 3(c) of the general permit. While the Department has on occasion shortened the review timeframe, Applicants are expected to allocate no less than the requisite time frame for the registration application review process and must plan accordingly.
- Registration applications for solar farm projects often fail to identify the project's contractor and sub-contractors. Section 5(b)(1)(viii) of the general permit mandates that this information be included in the registration application.
- Applicants have been repackaging the Siting Council submittal, which is not acceptable. Section 3(c)(2)(D) of the general permit mandates that the application submittal include only materials required to support the Stormwater

Pollution Control Plan ("SWPCP"). This information must be up-to-date and accurate. Any superfluous information delays the registration application review process.

- SWPCPs for solar farm projects are often lacking sufficient detail and information. An approvable SWPCP shall include, but not be limited to, the location of all erosion, sediment and stormwater control measures including detailed design cut sheets with supporting calculations, construction means and methods, project phasing (i.e., site planning, pre-construction, construction, and post-construction stabilization, etc.), construction sequencing and a construction schedule.
- The Applicant's design professional must be well-versed in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control ("E&S Guidelines"), specifically the techniques found in Chapter 4, Large Construction Sites, the 2004 Connecticut Stormwater Quality Manual, as well as *current* best management practices (BMPs) recognized by the International Erosion Control Association (IECA), provided such BMPs are equal to or better than the E&S Guidelines.
- From the Department's perspective, an approvable SWPCP will include methods for avoiding compaction of soils, disconnection and reduction of runoff associated with solar panel arrays, avoidance of concentration of stormwater, and other measures necessary to maintain or improve pre-construction hydrologic conditions.
- Applicants need to follow the SWPCP review checklist when preparing the SWPCP, giving specific attention to post-construction stormwater controls and the development of a detailed long-term maintenance plan to ensure that the SWPCP meets the terms and conditions of the general permit.

Subsequent to authorization for coverage under the general permit, the Registrant is responsible for ensuring compliance with all terms and conditions of the general permit and the approved SWPCP once construction has been initiated. However, for solar farm projects, Registrants often fail to comply with the terms and conditions of the general permit, including the approved SWPCP. In particular, Department staff have observed the following issues that a routine inspection protocol and proper oversight, as required under the general permit, would have prevented, including but not limited to:

- pre-construction site planning and management deficiencies (e.g., existing vegetation, scheduling, training, phasing/sequencing, tree protection, etc.)
- ineffective placement, maintenance, and/or repair of administrative/procedural, vegetative, and structural BMPs (e.g., erosion, sediment and stormwater runoff controls, good housekeeping, materials management, and training)
- lack of thorough inspections
- ineffective or untimely corrective action
- ineffective stabilization practices
- ineffective permanent post-construction controls (i.e., store, treat and direct stormwater quality and quantity to pre-construction levels)

Such issues at solar farm construction projects raise concerns, since such projects often create areas of land disruption larger than the generally accepted BMPs of five (5) acres anticipated under the general permit. As a result, any applicant seeking coverage under the general permit for a solar farm construction project should take care to address the issues noted above. While by no means exclusive, some recommendations that should be incorporated into a SWPCP to address these issues include:

- Ensuring that only a Professional Engineer and/or Landscape Architect, as defined in Section 2 of the general permit, who meets the qualifications described in Section 5(b)(4)(A)(ii) and who has been approved in writing by the Commissioner, serve as the Commissioner's agent to inspect the site and also serve as the qualified inspector for the purposes of Section 5(b)(4) of the general permit ("authorized professional"). Such authorized professional must remain in good standing with the Connecticut Department of Consumer Protection and be technically and ethically qualified to inspect the site and be retained for the duration of the construction project until the Notice of Termination acceptable to the Commissioner has been filed as described below.
- Ensuring that the authorized professional prepare a proposed inspection checklist to assure the construction project is being conducted in compliance with the terms and conditions of the general permit, and the approved SWPCP is implemented in accordance with the general permit. The inspection checklist shall comply with Section 5(b)(4)(B)(iii) of the general permit, and include a space for the authorized professional's signature and professional stamp.
- Ensuring that the credentials for the authorized professional proposed by the Applicant and the proposed inspection checklist prepared by such authorized professional be submitted for the review and approval of the Commissioner and be included with the registration application for the general permit. No other professional may serve as the authorized professional without the prior submittal of relevant credentials and inspection checklist for the Commissioner's review and written approval.
- Ensuring that the authorized professional personally perform all pre-construction, construction, and post-construction site inspections; perform inspections at the end of any storm event whether or not such storm generates a discharge; and prepare and submit all inspection reports including the supporting inspection checklists in compliance with Sections 5(b)(4)(A) and 5(b)(4)(B) of the general permit.
- Ensuring that the authorized professional report any violations of the terms and conditions of the general permit or the SWPCP to the Commissioner's designee within two (2) hours of becoming aware of such violation, or at the start of the next business day of becoming aware of such violation outside normal business hours and shall, within five (5) days, prepare and submit a signed and stamped written report, which documents the cause of the violation, duration including dates and times, and corrective action taken or planned to prevent future occurrences.

- Ensuring that if circumstances necessitate a revision to the SWPCP, the authorized professional works with the Permittee's design professional to ensure compliance with the terms and conditions of the general permit, and any such change to the SWPCP shall be submitted for the review and written approval of the Commissioner.
- Ensure that the authorized professional reviews all stormwater monitoring reports to evaluate the effectiveness of the SWPCP and to document any adverse impacts that any stormwater controls on the construction site or discharges from the construction site may have on wetlands, streams, any other receiving waterbodies. Such evaluation shall be documented in the inspection reports and inspection checklists performed pursuant to Section 5(b)(4) of the general permit.
- Ensuring that, in the event the authorized professional identifies a violation of the terms and conditions of the general permit, the SWPCP, or otherwise identifies adverse impacts on wetlands, streams or any other receiving waterbodies, that construction activity shall immediately cease and the site stabilized until such violation or adverse impacts have been corrected.
- Ensuring that reporting and record-keeping of all inspection checklists and inspection reports comply with the requirements of Section 5(d) of the general permit, except that a copy shall also be submitted electronically to the Department within ten (10) days from the date such inspection was performed.
- Ensuring that all inspection checklists and inspection reports comply with the requirements for Certification of Documents in Section 5(i) of the general permit, including the requirement that such checklists and reports shall also be prepared, stamped and signed by the authorized professional.
- After completion of a construction project, ensuring that a Notice of Termination is filed in compliance with Section 6 of the general permit, including the requirement that such Notice of Termination be stamped and signed by the authorized professional certifying that such authorized professional has personally inspected and verified that the site has been stabilized following the first full growing season (i.e., April through October) in the year following completion of the construction project.
- Ensuring that any transfer of the registration comply with the requirements of Section 5(m) of the general permit.

These recommendations are by no means intended to be exclusive. To help address the issues noted above, the Commissioner will also be considering the posting of a performance bond or other security, in accordance with Section 22a-6(a)(7) of the Connecticut General Statutes, to assure the solar farm construction project maintains compliance with the terms and conditions of the general permit and the SWPCP.



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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June 26, 2018

TO: Parties and Intervenors

FROM: Melanie Bachman, Executive Director *MB*

RE: **PETITION NO. 1345** – Pawcatuck Solar Center LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 15 MW AC solar photovoltaic electric generating facility on approximately 353 acres comprised of four abutting parcels located east of Pendleton Hill Road, north of the Pawcatuck River and south of Interstate-95 with proposed access from Ella Wheeler Road, and associated electrical interconnection to Eversource Energy's Shunock Substation west of Pendleton Hill Road in North Stonington, Connecticut.

Comments have been received from the State of Connecticut Department of Agriculture, dated June 25, 2018. A copy of the comments is attached for your review.

MB/RDM/lm

c: Council Members



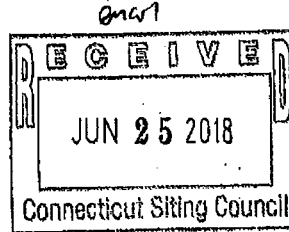
STATE OF CONNECTICUT
DEPARTMENT OF AGRICULTURE
Office of the Commissioner



Steven K. Reviczky
Commissioner

June 25, 2018

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051



860-713-2501
www.CTGrown.gov

Re: **PETITION NO. 1345**: – Pawcatuck Solar Center LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 15 MW AC solar photovoltaic electric generating facility on approximately 353 acres comprised of four abutting parcels located east of Pendleton Hill Road, north of the Pawcatuck River and south of Interstate-95 with proposed access from Ella Wheeler Road, and associated electrical interconnection to Eversource Energy's Shunock Substation west of Pendleton Hill Road in North Stonington, Connecticut.

Dear Executive Director Bachman:

Thank you for the opportunity to comment on the above-referenced petition for declaratory ruling.

Prime and important farmland soils are recognized federal, state and locally significant natural resources. In general, the Department of Agriculture has concerns about large scale solar projects such as this one, those with the potential to take agricultural lands out of production in the near term and at the same time have long term impacts on potential future agricultural activity due to the associated construction techniques and placement of other infrastructure that can damage soil resources.

The area of our State where this project is located has an active agricultural community. The towns of North Stonington and Stonington have several thousand acres of farmland, and are home to numerous farms, some growing produce and others engaged in livestock and poultry production. Further, the State of Connecticut has made significant investment to protect farmland in this area, and we have purchased agricultural development rights on several farms, totaling hundreds of acres in these communities.

More specifically, we have the following concerns regarding this petition:

- 1) The petition should provide more in the way of assurances that the site will be returned to its pre-construction condition at the end of the project's useful life. As such, the petition should include a detailed assessment of the existing farmland soils at the site. While the petition does mention on page 22 of Exhibit G (the Environmental Assessment) that "a

large portion of the site contains Prime Farmland soils”, there is not adequate mapping of the location of these soils on the site;

- 2) We would recommend the Siting Council consider requiring additional baseline soil testing to ascertain the physical, chemical and spatial characteristics of the soils on the property, so that a target can be set for restoration upon decommissioning with a goal of meeting or exceeding existing conditions. The USDA NRCS soil survey maps and attributes information can serve as a guide but are not a replacement for a detailed, site specific analysis in the development of a restoration plan.

The impacts from the use of heavy equipment at the site should also be examined and quantified. The use of heavy equipment during construction, holes from the installation of driven metal support posts, trenching for electrical conduit, surface grading, and the construction of access roads and equipment pads will significantly damage farmland soils and soil health. Changes to surface and subsurface soil hydrology are likely due to grading, access roads, trenching and compaction. All of these activities can have negative consequences for agricultural productivity due to the resulting uneven movement of water over and through the soils.

Assessment of the above cited impacts is necessary to provide guidance during construction, and for developing a plan for reclamation if and when the project is decommissioned.

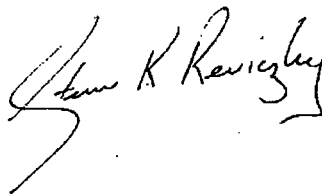
Examples of information that might be required for baseline testing and for restoration of farmland soils can be found in the USDA NRCS Practice Standard 544 (available at the following web address: <https://efotg.sc.egov.usda.gov/references/public/CO/CO544.pdf>), and in the U.S. Dept. of Interior’s Mine Land Reclamation Standards for Prime Farmland (available at the following web address: <https://www.osmre.gov/programs/tdt/primeFarmland.shtm>);

- 3) If the project does go forward, the Department of Agriculture believes the Siting Council should also consider requiring an “Agricultural Protection Plan,” as was required for at least one previous petitioner (DWW Solar II, LLC). A plan such as this would help reduce impacts to farmland soils during construction and operation of the facility, and could also include measures to ensure adequate restoration of the site at the end of the project’s useful life;
- 4) Lastly, with solar developments of this size which pose significant impacts to farmland resources, we believe more consideration should be given to the purchase of development rights/conservation easements on farmland elsewhere in the community, paying to restore farmland in the area or to some other farmland mitigation proposal.

In conclusion, we make these suggestions and recommendations in good faith, recognizing that this project was one of those selected by DEEP in a solicitation issued prior to July 1, 2017, and as such, does not require written representation for the Department of Agriculture as to whether it materially affects the status of prime farmland.

If you have any questions regarding these comments, please feel free to contact either myself or Stephen Anderson of my staff at (860) 713-2592, or by e-mail at stephen.anderson@ct.gov. Thank you for the opportunity to comment on this petition.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven K. Reviczky". The signature is written in a cursive style with a large, sweeping initial "S".

Steven K. Reviczky
Commissioner

Cc: Stephen Anderson, Department of Agriculture