DRAFT

Petition No. 1397
Constitution Solar, LLC
Plainfield, Connecticut

Staff Report
July 9, 2020

Introduction

On March 27, 2020, Constitution Solar, LLC (CS) submitted a petition (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, maintenance and operation of a 20-megawatt (MW) alternating current (AC) solar photovoltaic generating facility, and related electrical interconnection, located off of Cornell Road in Plainfield.

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on or about March 23, 2020, CS notified Town of Plainfield (Town) officials, state officials and agencies, the property owner, abutting property owners of the proposed project. and Town of Canterbury officials as Canterbury is within 2,500 feet of the proposed site.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. May 26, 2020 was the deadline for this petition under CGS §4-176(e). In response to the Coronavirus pandemic, on March 25, 2020, Governor Lamont issued Executive Order No. 7M that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies. On June 4, 2020, the Council voted to set the date by which to render a decision on the petition as no later than January 12, 2021, which is the 180-day statutory deadline for decision with the 90-day extension per Executive Order No. 7M.

The Council issued interrogatories to CS on May 6 and June 10, 2020. CS responded to the Council's interrogatories on May 27, June 1, June 10, and June 24, 2020, including photographic documentation of site-specific features intended to serve as a "virtual" field review of the project. Council staff member Robert Mercier visited the site on May 12, 2020.

Municipal Consultation

CS began outreach efforts to Town officials and abutting land owners beginning in 2017. A Project open house was held at Plainfield Town Hall on September 27, 2017. In February 2019, the Petitioner met with the Northeastern Connecticut Chamber of Commerce to discuss the Project. CS appeared before Town officials in November 2019, followed by a community open house event held on December 12, 2019. In January 2020, CS contacted abutting landowners to provide a Project update and to solicit comments. On February 5, 2020, CS met with town officials to discuss the status of the Project and a host community agreement.

On March 27, 2020, the Council sent correspondence to the Towns stating that the Council has received the petition and invited the Town to contact the Council with any questions or comments by April 26, 2020. The Council also sent correspondence to the Town of Canterbury on March 27, 2020 as it is within 2,500 feet of the site.

On April 27, 2020, the Town First Selectman Kevin Cunningham submitted comments to the Council in support of the Project. On May 26, 2020 First Selectman Cunningham and Town Planner Mary Ann Chinatti submitted comments to the Council. The two comment letters are attached.

No comments were received from the Town of Canterbury.

State Agency Comments

On March 27, 2020, the Council sent correspondence requesting comments on the proposed project from the following state agencies by April 23, 2020: Department of Energy and Environmental Protection (DEEP); 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 Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO).

The DOAg responded on April 22, DEEP responded on April 24 and CEQ responded on April 26, 2020. These comments are attached. No other state agencies provided comments to the Council.

While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies. [1]

Public Act 17-218

Public Act (PA) 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." The proposed facility was selected by DEEP in the Small-Scale Clean Energy RFP with a Final Determination letter issued to CS on June 27, 2017; therefore, the Project is exempt from the provisions of PA 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 Comprehensive Energy Strategy highlights eight key strategies to guide administrative and legislative action over the next several years. Specifically, Strategy No. 3 is "Grow and sustain renewable and zero-carbon generation in the state and region." Furthermore, on September 3, 2019, Governor Lamont issued Executive Order No. 3, which calls for the complete decarbonization of the electric sector by 2040. The proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard and Global Warming Solutions Act as a zero emission Class I renewable energy source.

On March 9, 2016, pursuant to 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.

[1] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007).

CS entered into long-term power purchase agreements (PPAs) with The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) and The United Illuminating Company (UI). Pursuant to the PPAs, the Petitioner will sell 80.36 percent of the energy and renewable energy credits (RECs) to Eversource, and the remaining 19.64 percent to UI. The PPAs were approved by PURA in September 2017 (PURA Docket No. 17-01-11) and allow for a one-time change in the total output of the facility based on unforeseen circumstances or site modifications prior to construction.

Each PPA has a term of 20 years with no option to renew. Given that the project has an expected lifespan of 30 years, CS may execute another PPA or sell generated energy on a merchant basis for the remaining 10 years.

The Project holds ISO-NE Generation Interconnection Queue Position #712 and was approved by ISO-NE on January 28, 2019. A Small Generator Interconnection Agreement between CS and Eversource is in negotiation.

Proposed Site

The Project Site is located on four parcels totaling 149 acres located directly west and north of Cornell Road in Plainfield, zoned RA-60 (residential). The parcels are generally located west of Interstate 395, east of Route 169, northwest of Route 14 and east of the Quinebaug River. CS has an option to purchase the four properties if the project is approved.

Two of the parcels are located generally west and north of the Cornell Road endpoint and are known as the northern area. The other two parcels, known as the southern area, are approximately 0.1 mile to the south of the northern area, separated by an undeveloped, forested property.

The two northern area parcels consist of approximately 52 acres of agricultural fields and 49 acres of forest. The two southern area parcels consist of approximately 48 acres of forest except for a 6-acre agricultural field fronting Cornell Road.

Site topography is generally gently sloping with an elevation range from approximately 130 to 280 feet above mean sea level. Land use in the surrounding area consists of forest, agricultural, and rural residential.

The Project development area would occupy approximately 80 acres of forest and field areas of the site. The development area is generally west of the improved portion of Cornell Road and north of the Cornell Road end point. Several developed residential lots are located generally along the east side of Cornell Road, across from the Project Site.

The Project development area contains 3 distinct solar array areas, a northern array area located at the north end of Cornell Road, a central array generally located west of Cornell Road where it dead ends, and a southern array, located in the southern area of the Project on the west side of Cornell Road. The northern and central arrays are contiguous to each other. The southern array is separated from the central/northern arrays by a non-Project parcel on the west side of Cornell Road. The nearest residence from the northern/central array perimeter fence is approximately 75 feet to the east at 155 Cornell Road. The nearest residence from the southern array perimeter fence is approximately 191 feet to the east at 65 Cornell Road.

A map showing the general site layout is attached.

Proposed Project

The Project consists of 68,296 solar PV modules installed in linear arrays. Approximately 67,316 modules would be rated at 415 watts direct current (DC), with the remaining 980 solar PV modules rated at 400 watts

DC. The modules would be installed on a fixed-tilt racking system arranged in an east-west direction across the site, with the modules oriented to the south at a 13 degree angle. Inter-row spacing from panel edge to panel edge would be approximately 8 to 10 feet, allowing for vehicle access as well as minimization of row to row shading.

The modules would be installed on a fixed-tilt racking system and oriented to the south at a 20 degree angle. The modules would be mounted to a ground-mounted racking system. The modules would be installed with a ground clearance of approximately 2 feet. The maximum height to the top of the solar panels would be approximately 5 feet.

The racking system would be supported by 10 to 16-foot long posts with an embedment depth of approximately 6 to 12 feet. A geotechnical investigation determined there is moderate to high risk that driven racking posts would encounter bedrock refusals. In these areas, posts would be installed using pre-drill and driven ground screw methodology.

Centralized inverters paired with medium-voltage transformers would be installed on 10 pre-manufactured skids placed on gravel pads located throughout the project. The centralized inverter/transformers would convert module 1.5 kV DC power to a normalized voltage of 23 kV AC so it can be used by the local distribution system. Wiring from the modules to the inverters would be installed on the racking, direct buried, or within an above ground solar hanger system. The transformers would connect to an on-site switchyard via underground feeder cables.

The switchyard (collector substation) would be located adjacent to Cornell Road in the central solar array area. It would feature a crushed stone surface and contain an approximate 10-foot tall metalclad 23-kV pad mount switchgear. The switchgear would include disconnect switches and protective relay equipment.

A new 4.54-mile long three phase feeder line would be installed to connect the Project to Eversource's Fry Brook Substation in Plainfield; the point of project interconnection. The Project's output at the point of interconnection is 19.59 MW AC. The interconnection would require the replacement of 171 existing roadside utility poles along the interconnection route to support the new feeder line.

The efficiency of the proposed solar panel would be approximately 20.6 percent. The estimated capacity factor of the proposed Project is 22.4 percent.

The project is not designed to operate as a microgrid nor is it designed to accommodate a future battery storage system.

The Project would be enclosed by a seven-foot high chain-link fence with the exception of the switchyard compound, which would include three strands of barbed wire on top of the fence. Several access gates would be installed at the entrances to gravel roads serving the project site. Main access points would be from Cornell Road. New gravel access roads would total approximately one mile in length and would be 16 feet wide.

A low growing solar seed mix would be installed using hydro seeding to establish vegetative cover within the solar array areas. The primary function of the selected seed mix is to provide stormwater management.

The Project would utilize existing grades to the extent feasible to minimize earthwork. Approximately 28 acres of the site would require clearing and grubbing. Some soil disturbance and limited grading will be required for installation of site roads and equipment pads, as well as to smooth out areas of grubbing. Racking would follow existing grades, with little to no grading required before installation. The solar array is proposed on a range of slopes, from flat to a maximum grade of 15 percent. The estimated cut for the Project is 271,600 cubic yards. The estimated fill for the Project is 41,900 cubic yards.

Several sections of stone walls would be demolished with resulting stones either repurposed and used on site or removed from the site and disposed of at an appropriate facility. If appropriate, stones could also be donated for reuse by others.

Construction is expected to begin in the 1st quarter of 2021 with mobilization of equipment and land clearing efforts. Further site work and land preparation is expected to be complete by the end of the 3rd quarter of 2021. Final site stabilization, component testing, and commissioning is expected to be complete in the 4th quarter of 2021. Construction hours would occur on weekdays during daylight hours with some weekend work occurring on an as needed basis.

Public Safety

The proposed project would meet or exceed applicable local, state, national and industry health and safety standards and requirements including, but not limited to, the National Electric Code, National Electric Safety Code and applicable National Fire Protection Association codes and standards.

Remote monitoring of project operation would occur on a 24/7 basis via a data acquisition system, which has the capability to send alarms identifying communication and power generation issues should they occur. Remote operations include start up, curtailment, and shut down of the facility. If one section of the array experiences an electrical problem or a fire, that section would be isolated from functioning arrays. If there is a fault that could cause disruption to the grid, the entire solar array would be isolated from the grid by activation of disconnect switches.

The Petitioner would ensure that first responders are trained in the procedures necessary to address the event of a fire or emergency. A Project specific emergency preparedness plan which standardizes procedures the event of a fire would be prepared. In addition, the Petitioner would ensure that Project access is provided to first responders.

Danielson Airport is located approximately 8 miles northeast of the Project site. The Federal Aviation Administration (FAA) issued Determinations of No Hazard to Air Navigation for the project and a glare analysis is not required.

Noise modeling of the 10 Project inverter/transformer pads, including the switchgear pad, indicates that Project operational noise would not exceed 40 dBA at the nearest residence, and thus, the Project is in compliance with DEEP noise standards. Any noise associated with Project construction would be temporary in nature and exempt per DEEP Noise Control Regulations.

Environmental Effects and Mitigation Measures

Historic and Recreational Resources

According to SHPO files, no properties or districts listed on the National or State Register of Historic Places are located within 500 feet of the proposed work areas. Based on a review of historic maps, aerial photographs, and soil profiles, the northwestern project area was identified as possessing a potential for moderate to high archaeological sensitivity. Subsequent field evaluations of this found no evidence of archaeological significance except for one specific area that may contain archeological deposits. CS, upon consultation with the SHPO, would excavate and document this location prior to the commencement of construction.

An unusual stone wall was identified in the northeastern portion of the Project site, along the property boundary. CS would avoid disturbing the wall during site construction.

The Quinebaug Wildlife Management Area is located mostly to the east and north of the Project site. A narrow strip of the management area is also located west of the Project site, along a slope that rises above the Quinebaug River. The management area contains an informal trail, the Sugar Brook Snowshoe Loop Trail, which extends along the east Project site boundary at its closest point where the project would be partially visible. Other informal trails connect the various portions of the management area. No blue blazed hiking trails maintained by the Connecticut Forest and Parks Association are in the immediate Project area.

Visibility

The project is at the end of a dead end road that serves several residential and agricultural properties. Generally, year-round visibility of the proposed facility would be minimal and confined to areas on the site immediately surrounding the project. Overall, any views would be minimized by the facility's relatively low height and an anti-reflective coating on the blue/black solar modules.

A narrow strip of shrubs and trees line the west side of the road, along the edge of the existing open fields that would be used for the project. Seasonal (or "leaf off") views would extend to travelers along Cornell Road and to abutting properties on the east side of Cornell Road. CS would install a 1,062-foot long row of juniper and red cedar trees with a height of 6 to 7 feet at planting along the perimeter fence facing Cornell Road to further mitigate potential visual impacts.

Potential observation points from abutting properties to the northeast, north and west would be screened by existing forest.

Agriculture

Based on aerial imagery and recent field surveys, current active agricultural areas comprise approximately 54 acres of the Project site, of which approximately 20 acres are mapped as Prime Farmland Soils, and 29 acres are mapped as Statewide Important Farmland Soils. Additionally, 19.5 acres of forest that would be cleared for the Project is mapped as Prime or Statewide Important Farmland soils. Approximately 2.4 acres of these soil types would be impacted by construction of roads and equipment pads. Soils in these areas would be removed and re-distributed in discrete areas in accordance with a Farmland Soil Mitigation Plan developed for the Project. At the end of the Project life, the site would be able to return to agricultural production or support forest re-growth.

Wetlands and Watercourses

Natural resource surveys identified 12 wetlands, 10 watercourses and 2 vernal pools on the four parcels comprising the site. To protect the water quality of these resources, a 100-foot buffer would be maintained to a majority of these water resources except for areas that have already been cleared for agricultural use. In these areas a 50-foot setback has been designed, increasing the buffer that currently exists between open agricultural fields and the water resource area. Vegetation within the buffers would be maintained in its current state or managed for shrub growth depending on location. No clearing would occur within 100 feet of any water resource. A site map showing these resources and proposed buffers is attached.

An existing farm road would be upgraded to access the northern array that includes a "low flow" coarse gravel crossing of an intermittent watercourse.

The two high quality vernal pools were identified on-site; VP-01 is located in a wooded area west of the southern array development area, and VP-02 is located in the southwest corner of central portion of the Project site. Consistent with vernal pool best management practices, no work would occur within the 100-foot vernal pool envelope of both pools. Additionally, 0.7 acre of tree clearing is proposed within the critical terrestrial habitat (CTH) of VP-01 and no tree clearing is proposed within the CTH of VP-02. Work would occur within existing agricultural areas of both CTH areas.

To protect wetland resources during construction erosion and sedimentation controls would be established consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control.*

Wildlife

The Project Site consists predominantly of second growth forest and agricultural land, with the remaining areas consisting of wetland and stream habitats offering a variety of habitats for wildlife. A construction sequencing plan and operational practices would be implemented to minimize adverse impacts to wildlife, including species listed on the Natural Diversity Database (NDDB) and in the category of Greatest Conservation Need as identified in the 2015 Connecticut Wildlife Action Plan.

Field surveys for threatened, endangered and special concern species were conducted within the Project area in 2017, 2018 and 2019. CS continues to consult with DEEP's NDDB program regarding listed species that may occur on site. A final determination letter from DEEP is pending. A table listing NDDB species and species of Greatest Conservation Need that occur or have the potential to occur at the site, and associated mitigation measures CS would employ to reduce impacts to these species, is attached.

DEEP may require CS to avoid construction in areas containing Hinckley soils at the site due to the potential presence of two NDDB-listed plant species that favor these soils. CS soil surveys identified this soil type along the steeper slopes on the western boundary of the Project where development is not proposed and within an agricultural field in the northern array area where there is a low probability of an occurrence of these plant species. CS proposes to utilize this area for the Project due to its past disturbance for agricultural production.

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. Additionally, CS completed a bat survey at the site in 2017 and found no evidence of NLEB occurring at the site.

Project mitigation measures include seasonal restrictions, avoidance of sensitive habitats, training for on-site personnel and on-site environmental monitoring.

During the initial site construction orientation, personnel would undergo environmental training regarding listed species potentially occurring at the site as well as other limited mobility species that may be encountered such as amphibians and reptiles.

Tree clearing would be restricted to winter months (November–March) to minimize adverse impacts to reptile and amphibian species, and migratory wildlife such as birds and bats. If tree clearing or earthwork activities in agricultural fields that are within the CTH of both vernal pools occur during the spring amphibian breeding season, additional monitoring and sweeps would be conducted. Perimeter silt fencing would also act as work zone exclusionary fencing for small wildlife species.

CS would be willing to install perimeter fencing that includes a six-inch gap above grade to allow for small wildlife movement, except for fencing adjacent to site access gates and around the switchyard.

Forest and Parks

Approximately 29 acres of forest would be cleared for the project, and of that, 28 acres are considered core forest. During Project operation, CS would not disturb 70 acres of various habitats located on the Project site including approximately 40 acres of core forest. A site map showing post-construction undisturbed habitats is attached.

No State Parks are in the area of the project site.

Air Quality

The project would comply with air regulations and would not require an air permit. The solar project would not produce air emissions of regulated air pollutants or greenhouse gases during operation.

Water Quality

The Project site is located within the Federal Emergency Management Agency-designated unshaded Zone X, an area outside of the 100-year and 500-year flood zones. The site is not located within a DEEP-designated Aquifer Protection Area or in proximity to the Area of Contribution to a Public Water Supply Well. The closest Aquifer Protection Area is located to approximately 1.6 miles south of the Project Site, in the Town of Plainfield. Residences in proximity to the Project have private wells. No impacts to private wells or groundwater in the area are anticipated.

Stormwater

Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater pollution. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices. The DEEP Individual and General Permits for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Stormwater Permit) requires implementation of a Stormwater Pollution Control Plan to prevent the movement of sediments off construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete. A DEEP-issued Stormwater Permit is required prior to commencement of construction.

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 Stormwater Permit registration. No site construction activities can occur until the Stormwater Permit is issued. The Stormwater Permit includes a Stormwater Pollution Control Plan (SWPCP) that 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*. DEEP has the authority to enforce Project compliance with the SWPCP.

CS met with the DEEP Stormwater Division in 2018 to discuss project phasing and stormwater management features. Based on these discussions, the Project would be constructed in four main phases to minimize disturbance and manage stormwater, as follows: Phase 1- Major Access Road and Switchyard Construction; Phase 2- Grubbing of Wooded Areas; Phase 3- Auxiliary Road and Open Area Array Construction; Phase 4- Wooded Area Array Construction. The main phases include approximately 17 sub-phases that are less than 10 acres in size, with each sub-phase utilizing a temporary sediment basin or trap. Two permanent stormwater basins are proposed, located in the northern array.

Decommissioning Plan

A Decommissioning Plan has provisions for project removal after a useful life of at least 30 years. Following the removal of project related equipment, the site would be restored to preexisting conditions to the extent feasible, including re-vegetation of disturbed areas. Some features may remain in place, such as access roads depending on the anticipated post-Project use. Decommissioning would be completed within 2 years of the end of the Project's life.

Conclusion

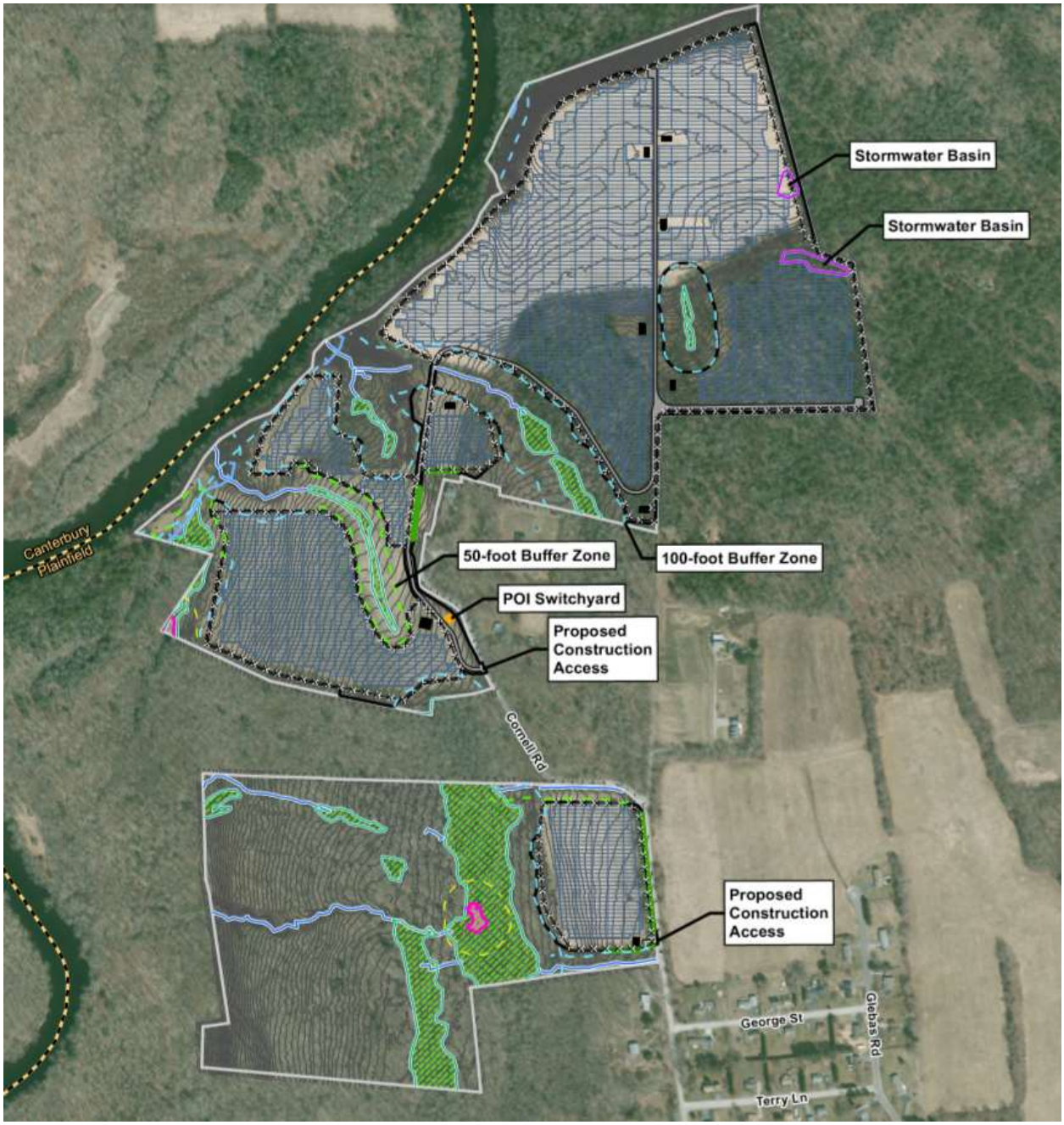
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce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

Recommendations

If approved, staff recommends inclusion of the following conditions:

1. Approval of any minor project changes be delegated to Council Staff;
2. Submit a copy of the DEEP NDDB Final determination letter prior to the commencement of construction;
3. Submit a copy of a DEEP-approved Stormwater Permit prior to the commencement of construction; and
4. Install perimeter fencing with a six-inch gap between the ground and the bottom of the fence, except adjacent to site access gates and around the switchyard and other areas where enhanced security is necessary.

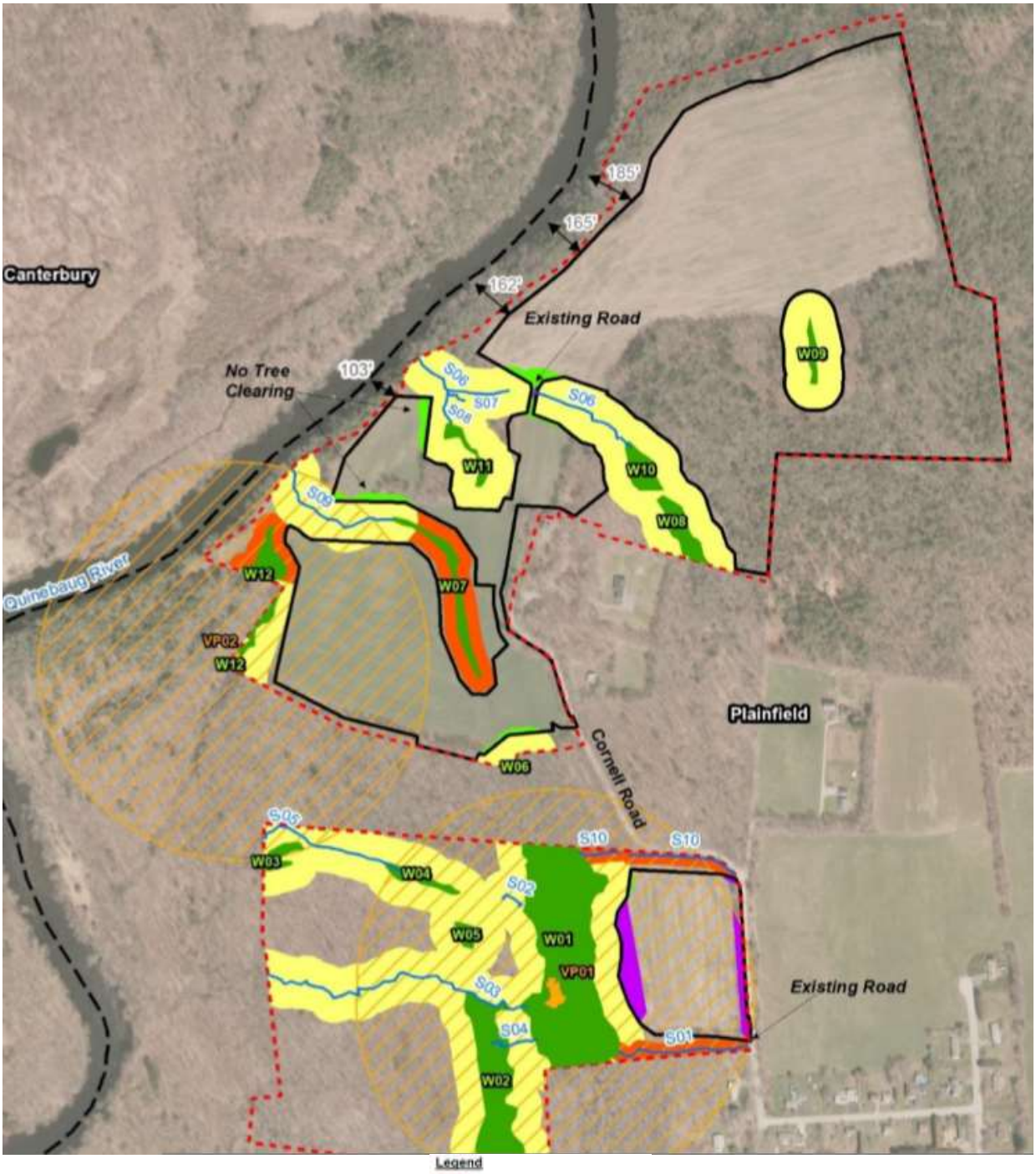
Proposed Site Layout



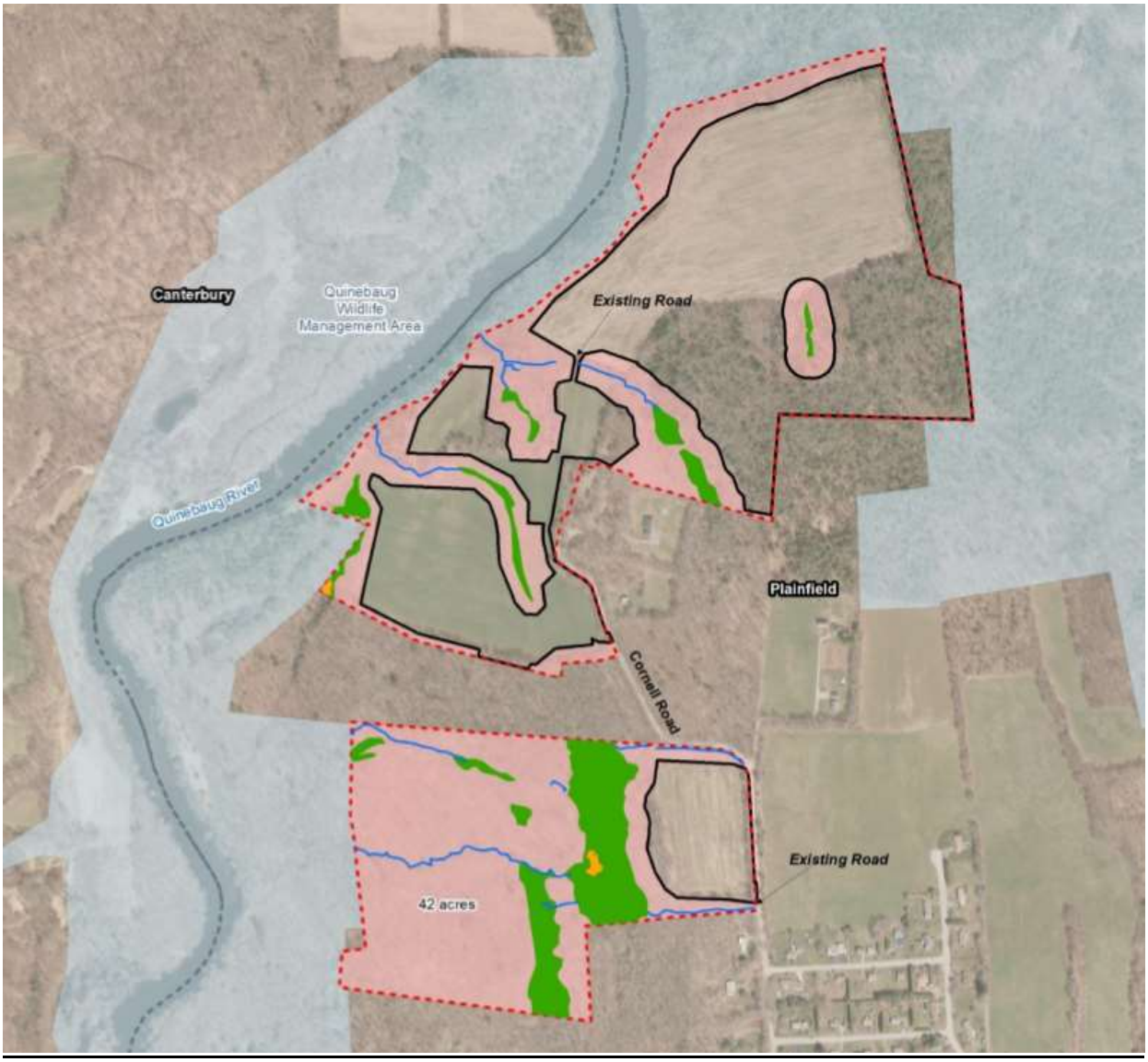
Legend

- Limit of Work/Development Area
- Project Site
- Chain Link Fence
- Vegetative Screening
- Stormwater Basin
- 50-foot Buffer Zone
- 100-foot Buffer Zone
- 100' Vernal Pool Envelope
- Watercourse
- Wetland Boundary
- 100-Year Floodplain
- Panels
- Wetland Area
- Equipment Pad
- Vernal Pool
- Switchyard
- Road
- CT Municipal Boundary

Wetland/Watercourse Areas and Proposed Project Buffers



Post-Construction Undisturbed Habitat Areas



Legend

- Study Area
- Maximum Limit of Work
- Habitat Protection Area (70 acres)
- Quinebaug Wildlife Management
- Township Boundary
- Delineated Wetland
- Vernal Pool
- Watercourse

Listed Species and Proposed Mitigation Measures.

Table 2. Avoidance and Mitigation Measures for Potential and Confirmed Wildlife Species that are Federally-Listed, State-Listed, State Species of Special Concern, or Species of Greatest Conservation Need within the Study Area.

Common Name	Scientific Name	Associated Habitat in Study Area	Limit of Work	Construction Timing	Training	Exclusion	Monitoring	Reporting	Operational Avoidance
Mammals									
Eastern red bat	*Lasiurus borealis*	Forage along stream corridors and roost amongst dead leaves on the branches of hardwood trees, and sometimes evergreens	-	√	-	-	-	-	√
Hoary bat	*Lasiurus cinereus*	Coniferous and mixed hardwood-conifer forest	-	√	-	-	-	-	√
Northern long-eared bat	*Myotis septentrionalis*	Coniferous and mixed hardwood-conifer forest	-	√	-	-	-	-	√
Silver-haired bat	*Lasionycteris noctivagans*	Mixed coniferous and deciduous forests	-	√	-	-	-	-	√
Tri-colored bat	*Perimyotis subflavus*	Forages along edges of forests, near streams or over open water	-	√	-	-	-	-	√
Birds									
American kestrel	*Falco sparverius*	Agricultural areas (hay fields and pastures) as well as meadows and grassy fields, including old fields	-	√	-	-	-	-	-
Black-billed cuckoo	*Coccyzus erythropthalmus*	Edges of mature deciduous or mixed forests but also can use younger growth forests with shrubs and thickets; nests in trees	-	√	-	-	-	-	-
Bobolink	*Dolichonyx oryzivorus*	Hayfields and meadows, and during migration are associated with marsh habitat	√	√	-	-	-	-	-
Brown thrasher	*Toxostoma rufum*	Scrubby fields, dense revegetating woods, and forest edges	-	√	-	-	-	-	-
Eastern whip-poor-will	*Antrostomus vociferus*	Open woodlands, breeding in dry deciduous or evergreen-deciduous forests having little to no underbrush	-	√	-	-	-	-	-
Prairie warbler	*Setophaga discolor*	Scrubby fields and regenerating forests	-	√	-	-	-	-	-
Rusty blackbird	*Euphagus carolinus*	Wet forested areas; usually nests at the edge of ponds and wetlands	√	√	-	-	-	-	-
Wood thrush	*Hylocichla mustelina*	Deciduous and mixed pine and hardwood forests with large trees, moderate understory, shade, and abundant leaf litter	-	√	-	-	-	-	√
Reptiles									
Eastern hognose snake	*Heterodon platirhinos*	Utilize underground passages created by small mammals within fields, open grassy areas adjacent to woods, and open forests with loose, sandy, gravely soils that are well drained	-	√	√	√	√	√	√
Eastern ribbon snake	*Thamnophis sauritus*	Usually found near a body of water such as a pond or bog, but prefers open-canopy, wet sedge meadows	√	√	√	√	√	√	√
Amphibians									
Fowler's toad	*Anaxyrus fowleri*	Well-drained sand and gravel areas	-	√	√	√	√	√	√
Gray treefrog	*Hyla versicolor*	Variety of wetland types, red maple and shrub swamps in particular	√	√	√	√	√	√	√
Northern dusky salamander	*Desmognathus fuscus*	Freshwater habitats such as streams, springs, and/or areas with seepage in closed canopy deciduous or coniferous forest	√	-	√		√	√	-
Spotted salamander	*Ambystoma maculatum*	Forested areas adjacent to swamps, ponds, and creeks; breed in temporary pools and use surrounding terrestrial habitats outside of breeding period.	√	√	√	√	√	√	√
Wood frog	*Lithobates sylvaticus*	Forested areas adjacent to swamps, ponds, and creeks; breed in temporary pools and use surrounding terrestrial habitats outside of breeding period	√	√	√	√	√	√	√
Invertebrates									
Sparkling jewelwing	*Calopteryx dimidiate*	Woodland and open areas adjacent to forest rivers and streams (preferably fast-flowing and acidic) with abundant riverside vegetation, including sandy bottom streams and rivers with little canopy cover	√	-	-	-	-	-	-

ATTACHMENT A

**Town of Plainfield comments dated
April 27, 2020 and May 26, 2020**

THE PLAINFIELD TOWN HALL

PLAINFIELD - CENTRAL VILLAGE - MOOSUP - WAUREGAN

Town Hall
8 Community Avenue
Plainfield, CT 06374

Telephone (860) 230-3001
Fax (860) 230-3033

SELECTMAN'S OFFICE

Dear Ms. Bachman:

On behalf of the Town of Plainfield, I am writing to express our support for the proposed Constitution Solar project, an approximately 20-megawatt solar farm developed by a subsidiary of NextEra Energy Resources and located north of Black Hill Road at the end of Cornell Road in our town.

In 2016, the Connecticut Department of Energy and Environmental Protection selected Constitution Solar to provide solar energy to the state's residents and businesses and help Connecticut meet its renewable energy and carbon emission reduction goals. In addition to its environmental benefits, Constitution Solar will generate millions of dollars in property tax revenue for the Town of Plainfield over its operational lifetime.

The Constitution Solar team has worked side-by-side with town officials, residents and project neighbors dating back to early 2017. They have sought our feedback through presentations and discussions with town officials, hosting community public open houses, and direct outreach to project neighbors. The team has demonstrated its attention to detail and consideration for our questions and concerns, and we know that they will be a positive, long-term partner to Plainfield.

The project underscores the company's commitment to state and local requirements and sensitivities. Increased wetland and watercourse setbacks, additional designated protection areas for endangered species, and the preservation of cultural resources are among the most notable characteristics of the project. The project also adopts our property setback requirements, even when not required. We are confident that the Constitution Solar petition is thorough, well-balanced, and meets the needs of our community.

For these reasons, the Town of Plainfield supports the Constitution Solar project. Please do not hesitate to contact us if you have any questions or concerns.

Sincerely,

Kevin M. Cunningham
First Selectman of Plainfield, Ct

May 26, 2020

Melanie A. Bachman
Executive Director/Staff Attorney
State of Connecticut
Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **PETITION NO. 1397** – Constitution Solar, 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 20-megawatt AC solar photovoltaic electric generating facility on approximately 149 acres comprised of four separate parcels located off of Cornell Road in Plainfield, Connecticut and associated electrical interconnection.

Dear Attorney Bachman:

Though the municipality has no jurisdiction re the subject Petition, we are compelled to provide the following comments, as we do have concerns:

1. Proposed Subdivision
   a. As you can see by the *Substation Parcel* map, attached, the Petitioner proposed subdivision of a .77 ac (33,541.2 sq. ft.) lot from the larger parcel at 0 Cornell Rd. for the purpose of construction of the development's substation. Per the developer's representative, this requirement is due to an agreement made by the previous developer with the property owner.
   b. The subject property is located within an RA-60, residential-agriculture, zone district, which requires a minimum lot size of 60,000 sq. ft., which is substantially larger than the size of the proposed lot;
   c. Solar array substations are not permitted, either as of right or by Special Permit, in the RA-60 zone district;
   d. If approved as proposed, a minimum of two (2) non-conforming conditions will be created: (i) a lot that does not meet the minimum requirements for a lot in the RA-60 zone, and (ii) establishment of a use (substation) not permitted in the RA-60 zone district.
2. Farmland Soils – it is noted that the project, constructed as proposed, will impact both Prime Farmland and Farmland of Statewide Importance (see map, attached).
3. Natural Diversity Database – As you can see by the attached map, the property contains a large Natural Diversity Database area – approximately 14.56 ac (632,779 sq. ft.) spanning the entire length pf the property's westerly boundary; this area is also designated as Protected Open Space by CT DEEP.

PLAINFIELD TOWN HALL
8 Community Ave., Plainfield, CT 06374
TELEPHONE (860) 230-3001 FAX (860) 230-3033

Equal Opportunity Employment

Fair Housing Opportunity

The Town is not opposed to the project, but it is important that it be constructed, operated and decommissioned respecting the cited concerns.

If the Siting Council approves this Petition, the Town of Plainfield respectfully requests the following conditions be made part of that approval:

1. The subdivided substation lot shall be recombined with the larger 0 Cornell Rd. parcel as part of the decommissioning plan;
2. The nonconforming, substation, use of the property shall be extinguished as part of the decommissioning plan; and
3. CT Department of Agriculture and CT Department of Energy and Environmental Protection review/favorable recommendation.

Respectfully,

Kevin Cunningham, First Selectman

Mary Ann Chinatti, Town Planner

ATTACHMENT B

DOAg comments dated April 23, 2020

CEQ comments dated April 27, 2020

DEEP comments dated April 28, 2020

Bryan P. Hurlburt
Commissioner

STATE OF CONNECTICUT
DEPARTMENT OF AGRICULTURE
Office of the Commissioner

860-713-2501
www.CTGrown.gov

April 22, 2020

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

Re: PETITION NO. 1397 - Constitution Solar, 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 20-megawatt AC solar photovoltaic electric generating facility on approximately 149 acres comprised of four separate parcels located off of Cornell Road in Plainfield, Connecticut and associated electrical interconnection.

Dear Executive Director Bachman:

Thank you for the opportunity to provide comment on this project, which as proposed will convert approximately 100 acres of Prime and Important Farmland Soils (see Figure 8 – soil map) to a 20 megawatt solar voltaic development.

As we have stated to the Connecticut Siting Council (CSC) in the past, prime and important farmland soils are recognized federal, state and locally significant natural resources. This part of our State has an active agricultural community with considerable competition for prime farmland for growing vegetables and fruit as well as other agricultural crops. Demand for farmland parcels of this size and quality, is high and its loss will undoubtedly have a negative impact on agricultural growth and viability.

In general, the loss of Connecticut farms significantly impacts our efforts to combat food insecurity, results in the importation of human food and animal feed from outside of our state and nation, increases food waste, and increases the distance from which we bring in our food, thus increasing our carbon footprint. It is commonly held that well managed agricultural lands can store significant carbon and can play an important role in climate change mitigation and adaptation. Further, the loss of farms and available farmland also affects the region's economy from retailers of farm equipment and supplies, to feed and fertilizer dealers and tourism.

In addition to taking agricultural lands out of production in the near term, the development of large solar facilities such as this one, (and the associated construction techniques and placement of other infrastructure) damage soil resources and have long term impacts on the potential for future agricultural productivity. Specifically, according to the petition, this project will remove at least 58 acres in agricultural fields from production, where the petitioner has reported that there are both feed corn and hay crops.

The Department recognizes that this project, given that it was selected as part of a solicitation prior to July 1, 2017, does not require a no impact letter from us to move forward in the declaratory ruling process. However, we offer these comments in hopes that the CSC can incorporate some of the same types of mitigation measures we have encouraged developers of much smaller projects to consider, either through their use of Department of Agriculture guidance (linked here: https://portal.ct.gov/-/media/DOAG/Commissioner/200116-Solar-Project-Consideration-Guidelines.pdf?la=en), and/or through the CSC process.

While the developer has submitted a Farmland Soil Mitigation Plan which addresses direct impacts and management of soils over the life of the project, it does not go nearly far enough in addressing the above cited issues, those that result from the loss of the farmland resource in the community. As other developers have already done when approaching DoAg for no impact letters, consideration could be given to incorporating real and significant mitigation measures such as restoring farmland using DoAg's Farmland Restoration Program, purchase of conservation easements on farmland elsewhere in the community and incorporation of dual-use agricultural activities. An example of these approaches is contained in the recent GRE decision which is linked here:
https://www.ct.gov/csc/lib/csc/pending_petitions/3_petition_1301through1400/pe1378/pe1378-dcltr-energy-solar-stonington-20191011.pdf.

While the Department supports properly scaled renewable energy on farms and farmland where such projects are in concert with Connecticut's farmland protection goals and policies, projects such as this one pose a substantial impact on agriculture in our State and we can only address those impacts through a well thought out mitigation plan.

Thank you for the opportunity to comment on this project. If you have any questions, please feel free to contact either myself or Stephen Anderson of my staff. Steve can be reached at stephen.anderson@ct.gov, or at (860) 713-2592.

Sincerely,

Bryan P. Hurlburt
Commissioner

Cc: Katie Dykes, Commissioner
Department of Energy and Environmental Protection

STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

April 26, 2020

Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **PETITION NO. 1397** - Constitution Solar, LLC petition for a declaratory ruling for the proposed construction, maintenance and operation of a 20-megawatt AC solar photovoltaic electric generating facility on approximately 149 acres comprised of four separate parcels located off of Cornell Road in Plainfield, Connecticut.

Dear Ms. Bachman:

The Council on Environmental Quality ("the Council") supports the development of clean, renewable energy technologies on appropriate sites in Connecticut and offers the following comments with regard to Petition No. 1397 (Petition).

In the case of Petition No. 1397, the Council wishes to reiterate the position it has taken in recent, prior petitions that the best practices for construction of solar fields is now explicit in Appendix I of the Department of Energy and Environmental Protection (DEEP) Draft "General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities". Adoption of these practices by the developer, even when not required by permit, is in interest of the developer and the environment. Poor design and construction practices in the past have resulted in avoidable environmental damage and unnecessary expense for developers, when projects were subject to cease and desist orders. Consequently, the Council recommends that the guidelines in Appendix I be applied, where appropriate, at the proposed site.

Thank you for your consideration of these comments. Please do not hesitate to contact the Council if you have any questions.

Sincerely,

Peter Hearn

79 Elm Street, Hartford, CT 06106
Phone: (860) 424-4000 Fax: (860) 424-4070
http://www.ct.gov/ceq

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

April 24, 2020

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: 20-MW Solar Photo-voltaic Generating Facility
Constitution Solar, LLC
Plainfield, Connecticut
Petition No. 1397

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction of a 20-MW photo-voltaic generating facility occupying approximately 80 acres of a 149-acre property in the northwestern portion of Plainfield. A field review of the site was conducted on April 14, 2020. Based on these efforts, the following comments are offered to the Council for your consideration in this proceeding.

The Constitution Solar project was submitted to DEEP in response to DEEP's 2016 Small Scale Clean Energy RFP and was ultimately among the projects selected by DEEP as a result of that RFP. [Note: The statement on page 13 of the Petition that this project was selected in the Tri-State RFP of Connecticut, Rhode Island and Massachusetts is incorrect, as is a similar reference on page 1 of Exhibit D.]

This and subsequent renewable energy RFPs represent an important step forward in the implementation of Connecticut's vision for a more affordable, cleaner, and more reliable energy future for the ratepayers of Connecticut. Bringing more grid-scale renewable energy projects on line is instrumental in furthering this vision as these resources help diversify the regional fuel mix, assist the state in meeting its requirement to purchase Renewable Energy Certificates from Class I renewable sources associated with 20% of its electricity by 2020, and in implementing Governor Lamont's Executive Order No. 3 that DEEP investigate pathways to achieve a 100% zero-carbon electric sector by 2040. Developing grid-scale renewables is also imperative to the state's success in achieving its goal of reducing carbon emissions by 45% below 2001 levels by 2030 and by 80% below 2001 levels by 2050.

Project Site Description

The project site, located at the northern end of Cornell Road, consists mostly of agricultural land of gentle to moderate slope, used either to raise corn or as hayed grassland. A smaller portion of the project site, mostly in the northeastern corner of the property, is wooded and

also possesses a gentle, undulating slope. Several small, westward-flowing watercourses, mostly, if not all, intermittent, flow across the project footprint area of the property.

As the DEEP site visit was conducted on April 14, one day after a very substantial rainfall event, the project site was undoubtedly wetter than normal and the small watercourses were carrying atypically large flows.

The southern cornfield, which is the only portion of what the Petition refers to as the southern parcel that is slated for development, approximates flat along the eastern one-third to one half, the portion closer to Cornell Road, then increases in slope as one moves westward. The northern portion of this field increases in slope more gradually than the southern portion does, but no portion of this field evidences slopes that would be problematic from a stormwater or erosion perspective. However, the western edge of this southern cornfield transitions virtually immediately into wetland as one leaves the cornfield, making proper siting and design of stormwater collection basins critically important.

Two attempts were made during the DEEP field visit to access vernal pool 01. Due to the water levels in wetland 01 and the location of vernal pool 01 well into the interior of this wetland, these attempts were not successful. This effort did reveal that, given proper sediment controls being in place, VP01 is well removed and should be well protected from impacts of the construction of the southern parcel component of the solar farm.

The southern hayfield, which is the southernmost section of the northern parcel of the property, has a very well established vegetative cover. This field slopes westward toward the Quinebaug River at gentle to moderate slopes. Virtually all of this field provided very wet footing on the day of the DEEP visit. The large, linear wetland 07 is a conspicuous feature of this field and transitions into watercourse 09 as it leaves the hayfield.

Vernal pool 02 (VP02) is a long, linear pool off the southwestern end of the southern hayfield. On the day of the DEEP visit, there was a very significant outflow from it into a well-defined channel leading eventually to another probable vernal pool aligned parallel to the Quinebaug River and just east of a well established dirt bike trail along the bank of the river. This latter pool had no outlet or outflow despite a significant inflow. Both VP02 and 'VP03' (nomenclature unique to these comments) are well buffered from any activities or disturbance at the solar site. [It is entirely possible that VP03 is not mentioned in the Petition because it may be just off the property and therefore out of the study area.] The Quinebaug River was about a foot over its banks during the site visit and appeared to be still rising during the course of the visit.

The northern hayfield has gentle to moderate slopes, well established vegetative cover and is situated higher above the Quinebaug River than the southern hayfield. Very steep banks descend approximately 35' from the northern hayfield to the Quinebaug River, in contrast to banks of 15-20' at the southern hayfield and 5' at 'VP03'. This steep bank is forested mainly with hemlock.

Dirt bike trails are well established over the entire property. The dirt bike trail from the northern hayfield to the northern cornfield has a steep descent from the former, crosses a watercourse and makes a steep ascent to the western edge of the northern cornfield. Minor erosion is evident along both steep sections of this segment of the dirt bike trail. The dirt bike trail crosses this watercourse just downstream of the confluence of three smaller watercourses.

The northern cornfield is very expansive and is relatively flat. Two dirt bike trails, one beginning from the northwest corner of this field and one from midway along the northern edge, leave the cornfield and continue into the Quinebaug Wildlife Management Area which abuts the cornfield to the north. At least the latter of these two trails connects into the road network of the Wildlife Management Area. Though the soils of the northern cornfield are not well secured by vegetation, the very gentle to flat slope of this area will make stormwater management straightforward, especially after vegetative cover is established.

The final sector of the solar farm's footprint is a section of forest east of the northern cornfield. Slopes in this wooded area are best described as gently undulating. This forest is a mixture of species and sizes. Hemlock, red oak, red maple, beech and white pine are the dominant species, though there is an even-aged stand of almost purely black birch, 6"-8"dbh, in the central portion of this wooded area. Trunks of a couple dozen of these black birch were used to create a 6' x 6' x 3'tall timber crib of very recent origin and used as a repository for cans and bottles. This birch stand extends both north and south of wetland 09. Overall, most of the trees in this wooded portion of the site are less than 8" dbh but there are some, chiefly white pine, that are up to 36" dbh. Wetland 09, on the day of the DEEP site visit which was, as mentioned, the day after a significant precipitation event, drained via visible flow about 75' into the cornfield before flow disappeared into the soil. A dirt bike and an ATV were transiting the cornfield out and back as the field review was wrapping up.

Upon exiting the northern cornfield into the adjacent hayfield, two separate small, assumedly intermittent, watercourses were crossed just before leaving the cornfield. One final flowage crossed the access road to these two northern fields just north of the last house on Cornell Road.

Construction Stormwater Management

Construction projects involving five or more acres of land disturbance require either an individual NPDES discharge permit from DEEP or they may register for coverage under the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015). As mentioned in the Petition, representatives of Constitution Solar have met with DEEP Stormwater Program staff on several occasions. To date, no registration under the General Permit has been received.

Two stormwater guidance documents are attached to these comments. The petitioner would be aware of these guidance documents from the previous DEEP comments on the Quinebaug Solar project in Petition No. 1310A.

Also as mentioned in DEEP's comments on Petition No. 1310-A, Constitution Solar should also be aware that, prior to initiating the construction of any engineered stormwater control measures, any proposed measures must be evaluated to determine if they may quality as dams as defined by the Regulations of Connecticut State Agencies Sec. 22a-409-1(10), which may require a Dam Safety Construction Permit. A determination on the need for this permit may be requested by contacting the DEEP Dam Safety Program at DEEP.DamSafety@ct.gov.

Natural Diversity Data Base

Staff of the DEEP Natural Diversity Data Base program and representatives of Tetra Tech are continuing to exchange information in pursuit of a final determination letter for the Constitution Solar project. The principal remaining issues concern the qualifications of the botanists who performed the surveys at the project site, assurances of the preservation of an unaltered 100' buffer for vernal pool 02, and the need for ongoing monitoring for the presence of eastern spadefoot toad at the site, even after construction of the facility. Other issues of documentation of some procedures and findings of the Tetra Tech surveys also remain to be provided.

Miscellaneous Petition Commentary

The Petition does not contain much detail on the interconnection from the Constitution Solar Farm to the Fry Brook Substation. The Petition indicates that the corridor of the existing distribution lines will be used but does not state if the existing utility poles will be used or if new poles will need to be installed. The Petition also does not give the length of the interconnection line, its routing after leaving Cornell Road, nor the location of the Fry Brook Substation.

Neither the discussion in the Petition nor the details on Sheet C-029 of Exhibit F depicting the chain link perimeter fence indicate the inclusion of a 6" gap between the ground and the bottom of the chain link fence to accommodate access by small wildlife to the 80 acres of habitat inside the perimeter fence. DEEP recommends the inclusion of such a provision in the final design for the facility. This would not need to apply to the switchyard security fence.

The provision of 100' buffers around all wetlands and vernal pools, with the exception of currently active agricultural land crossed by the access road, which would have 50' buffers, is reasonable and acceptable, particularly give the slopes at the site.

The Petition states in several areas that the use of existing farm roads at the site will be maximized in the design of the solar farm. Though two photos in the Petition show passages between adjacent fields and label these passages as farm roads, the site has no existing farm road network to speak of. Paths used by farm equipment are visible, chiefly along the margins of the northern cornfield, but no actual roads exist. Nevertheless, the alignment depicted for the access road as shown on sheet C-014 of Exhibit F is reasonable and does not present any significant impacts in its construction or use.

The Petition references 1,062' of vegetative screening to be planted along Cornell Road. A commitment is made to monitor the success of these plantings for one year and replace any trees as necessary. DEEP recommends that this replacement commitment be extended through the

second growing season following planting as transplanted trees, and particularly the cedars proposed in the Petition, may not evidence distress until the second growing season following planting.

The development of the Constitution Solar Farm as proposed in this Petition should not impact DEEP's adjacent Quinebaug Wildlife Management Area with the caveat that we assume no clearing would be done on DEEP property either for actual panels, the access road, or for avoiding shade impacts on the solar panels.

DEEP defers to the Department of Agriculture as to the merits of the Farmland Soil Mitigation Plan outlined in Exhibit D.

The extensive and well used dirt bike trail network mentioned at several points in these comments will be either displaced by the solar facility or crossed by its perimeter fencing at numerous points on the property. As such, the current level of dirt bike activity can be expected to be greatly reduced, if not eliminated, following the construction of the Constitution Solar Farm. However, Constitution Solar should take this activity into account when designing the facility to ensure that any unauthorized replacement trails will not impact its facility or operations.

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 contact me at (860) 424-4110 or at frederick.riese@ct.gov.

Respectfully yours,

Frederick L. Riese

Frederick L. Riese
Senior Environmental Analyst

Attachments: (2)
cc: Commissioner Katie Dykes