DRAFT

Petition No. 1492
CT NSB ProjectCo LLC
486 Fitch Hill Road, Montville

Staff Report
June 17, 2022

Introduction

On March 2, 2022, the Connecticut Siting Council (Council) received a petition from CT NSB ProjectCo LLC (Petitioner) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 1.99-megawatt alternating current (AC) solar photovoltaic electric generating facility located at 486 Fitch Hill Road, Montville, Connecticut, and associated electrical interconnection (Petition or Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40 on or about June 1, 2021, the Petitioner notified the abutting property owners and Town of Montville (Town) officials, state officials and agencies of the proposed project.

The Council issued interrogatories to the Petitioner on March 28 and May 12, 2022. The Petitioner submitted responses to the Council's interrogatories on April 22, June 2, and June 6, 2022, respectively, one of which included photographic documentation of site-specific features intended to serve as a "virtual" field review of the project.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act (UAPA), an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. On April 22, 2022, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than August 29, 2022, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

Municipal Consultation

The Petitioner held two video conferences that were attended by the Town First Selectman on June 11 and June 25, 2021. Abutters were invited to the outreach meetings, but did not attend. The Town did not comment on the proposal.

On March 3, 2022, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by April 1, 2022. No comments were received.

State Agency Comments

On March 3, 2022, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed project from the following state agencies by April 1, 2022: Department of Energy & 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).

In response to the Council's solicitation, CEQ submitted comments on March 23, 2022[1] related to potential impacts to wildlife, prime farmland soils, core forest, wetlands and groundwater. The DOT submitted a no comment letter on April 4, 2022.

No other state agencies provided written comments on the Project.

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. [2]

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." The proposed facility has a generating capacity of 1.99 MW, therefore, it 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 Comprehensive Energy Strategy (2018 CES) 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.

The Petitioner was awarded a 15-year contract with The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) under the state's Low and Zero Emissions Renewable Energy Credit Programs (LREC/ZREC Program) to sell the renewable energy credits (RECs) from the facility. The LREC/ZREC Program was developed as part of Public Act 11-80, "An Act Concerning the Establishment of the [DEEP] and Planning for Connecticut's Energy Future."

The LREC/ZREC Program creates a market-driven bidding process for renewable energy projects ranging from rooftop solar panels to fuel cells to compete to obtain a 15-year revenue stream from the sale of renewable energy credits (RECs) to the electric utilities. It requires Eversource and the United Illuminating Company to procure Class I RECs under 15-year contracts with owners or developers of renewable energy projects in the state. After the Petitioner's ZREC contract expires, the Petitioner would continue to operate the solar facility under the terms of the lease with the property owner.

[1] CEQ comments 03/23/22
[2] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

The LREC/ZREC Program is not among the competitive energy procurement programs that are exempt from Public Act 17-218.[3]

The Petitioner would not participate in the ISO-New England, Inc. Forward Capacity Auction.

Proposed Site

Pursuant to a lease agreement with the property owner, the Petitioner proposes to construct the solar facility on an approximate 15.2-acre site[4] on a 209.8-acre parcel located at 486 Fitch Hill Road in Montville. The host parcel, zoned residential – R-80, is located east and west of Fitch Hill Road. It is an active farm operation that contains a residence and multiple outbuildings.

The project Site would be located in the forested, northeast corner of the host parcel east of Fitch Hill Road. Ground elevations in the project area range from 279 feet to 244 feet above mean sea level.

Surrounding land use consists of undeveloped woodland, agricultural and rural residential. The nearest property line from the solar facility perimeter fence is approximately 10 feet to the northeast at 416 Fitch Hill Road. The nearest off-site residence to the facility perimeter fence is located approximately 800 feet to the north also at 416 Fitch Hill Road.

The Petitioner selected the site due to site availability, limited environmental impact, site suitability, and the proximity to an electrical interconnection. Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility.[5]

The initial term of the lease is 20 years. The lease can be extended for two successive renewal terms of five years each. At the end of the lease, the Petitioner must decommission the project and restore the site to its pre-existing condition.

Proposed Project

The proposed 1.99 MW AC solar facility consists of a total of 4,760 solar panels rated at 540 Watts, as revised on June 2, 2022. Other equipment includes 16 inverters; 8 pad-mounted switchgears and eight 300 kVA transformers.

The panels would be installed in eight solar array sections, with each section supported by a dedicated inverter installed on 10-foot by 15-foot concrete pads. The panels would be installed facing south on a single-axis tracking system that would move east to west. The panels would installed at a 30 degree angle, approximately 8 feet above grade at the highest point and 2.5 feet above grade at the lowest point.

Panel row wiring would extend along the racking system to reduce potential damage from weather events, maintenance activities, or animals. From collection points at the end of the panel-rows, underground wiring would extend to the inverters and switchgear/transformer pads at the north end of the array. From the transformers, an underground line would extend for approximately 1,180 feet, then transition to an overhead line for a distance of 600 feet to Fitch Hill Road.

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[3] Zero emission renewable energy credit (ZREC) contracts are limited to 1 MW, and LREC contracts are limited to 2 MW. (CGS §16-244r).

[4] RCSA §16-50j-2a(29), "Site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located.

[5] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2019).

The proposed overhead electrical interconnection would require 20 new utility poles to interconnect the 8 solar array areas; 10 owned by Eversource and 10 owned by the Petitioner. Two of the utility poles would be installed to extend the overhead line from the access drive to the Project metering location. Sixteen poles would be used for project metering, aligned in a double row. The remaining two poles would be installed along Fitch Hill Road. The total length of the overhead interconnection line is 1,500 feet, extending along the edge of a field in the northwestern portion of the site.

Eversource requires each solar array area to have its own overhead wire connection and an associated meter supported by a single pole. Eight utility poles would be required for project metering equipment.

From the interconnection location, an overhead electric line would connect to an existing 13.2-kV overhead distribution circuit that extends along Fitch Hill Road. The Petitioner has completed the interconnection agreement with Eversource. No upgrades to Eversource's existing electric distribution system are required to support the Project. An ISO-NE interconnection review is not required.

A pad-mounted interconnection to eliminate 8 interconnection poles would cost approximately $450,000.

The projected capacity factor for the Project is approximately 23.1 percent and includes loss assumptions such as shading, soiling, reflection, inverter losses, wiring, and temperature variation. The single-axis tracking system contributes to a higher capacity factor. The power output would decline over time with an anticipated annual power output loss of approximately 0.5 percent.

The proposed Project is not designed to support a microgrid or a battery storage system.

Access to the solar facility would partially utilize an existing farm road that would be upgraded/extended to a 16-foot wide, 2,120-foot long gravel drive.

The facility would be enclosed by a seven-foot tall chain link fence with a 4 to 6 inch gap between the mesh and the ground to allow for small wildlife movement.

Earthwork at the site is required for installation of the access road and stormwater control basins. The project would require 8,100 cubic yards of cut and 900 cubic yards of fill for a net cut of 7,200 cubic yards. Most of the project would be constructed on ground slopes of up to 10 percent, but one isolated area reaches a grade of 28 percent.

Construction is anticipated to begin in mid to late summer 2022 and would occur over a 3 to 4 month period. Typical construction hours and work days of the week are as follows: Monday – Saturday, 7:00 AM to 5:00 PM.

The estimated cost of the project is approximately $6,407,800.

Public Safety

The proposed project would comply with the National Electrical Code, National Electrical Safety Code and National Fire Protection Association codes and standards, as applicable. TTA designed the system in accordance with the CT State Fire Prevention Code, Section 11.12.3 - Ground Mounted Photovoltaic System Installations by including a 15-foot wide perimeter access aisle around each array and seeding the solar array areas with low growing vegetation.

The nearest federally-obligated airport to the site is Groton-New London Airport located 9.7 miles south of the site. Under Federal Aviation Administration (FAA) criteria, the Project would not be a Hazard to Air Navigation or require a FAA glare analysis.

The Facility would be remotely monitored through a data acquisition system capable of detecting weather, energy production, and safety concerns related to grid outages or faults. If a problem with the facility is detected, system diagnostics and/or facility shutdown can be performed remotely. Personnel would be dispatched to the site if an issue cannot be resolved.

Manual disconnect switches are located on-site. The Petitioner would conduct facility operation and safety training for local emergency responders.

The Project would be enclosed by a seven-foot high chain link fence.[6]

The proposed facility would be in compliance with DEEP Noise Control Standards. The nearest property line to a transformer and inverter is approximately 211 feet to the northeast at 416 Fitch Hill Road. The predicted noise level at this property line from the transformer and inverter are approximately 14.5 dBA and 40.5 dBA, respectively. The Project transformers and inverters do not operate at night. Construction noise is exempt from DEEP Noise Control Standards.

The site is not located within a Federal Emergency Management Agency designated 100-year or 500-year flood zone.

Environmental Effects and Mitigation Measures

Historic and Recreational Resources

The SHPO submitted correspondence to the Petitioner on November 17, 2021, indicating that the proposed project would not affect historic properties or archeological resources. No further action was recommended.

An open space parcel owned by the Waterford Land Trust is located south of the host parcel across Raymond Hill Road. Due to intervening wooded areas, the Project would not be visible from the open space parcel.

There are no state parks or trails proximate to the site.

Visibility

The proposed facility would be visible from open fields and wooded areas from the abutting property to the northeast and east. The interconnection area would be visible seasonally and year-round from a portion of Fitch Hill Road. With the exception of two utility poles along Fitch Hill Road, most of the utility poles for the interconnection would be screened by trees to the west and the property owner's farm buildings to the east.

No state or local designated scenic roads or scenic areas are located adjacent to the Site.

[6] Section 691.4(2) of the National Electrical Code (NEC), 2020 Edition notes that, "Access to PV electric supply stations shall be restricted by fencing or other adequate means in accordance with 110.31…" Section 110.31 notes that for over 1,000 Volts, "…a wall, screen, or fence shall be used…A fence shall not be less than 7 feet in height or a combination of 6 feet or more of fence fabric and a 1 foot or more…utilizing barbed wire or equivalent."

Agriculture

The host parcel contains prime farmland soils according to mapping maintained by the United States Department of Agriculture (USDA) Natural Resource Conservation Service. Under PA 17-218, "prime farmland" means land that meets the criteria for prime farmland as described in 7 Code of Federal Regulations (C.F.R.) 657, as amended from time to time. 7 C.F.R. 657 defines prime farmland in relevant part as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses."

The site is located on an active farm and would be constructed on 13.5 acres of prime farmland soil. The property owner would continue to operate a farm on the remaining portion of the property. The Petitioner intends to utilize existing grades within the solar array area to minimize disturbance to prime farmland soils.

The property is currently enrolled in the Public Act 490 Program for agricultural land tax abatement. Once constructed, the solar facility portion of the property would not be eligible for the program.

Livestock grazing is not proposed for the Project area.

Wetlands and Watercourses

The Petitioner performed a wetland and watercourse survey in March 2021 that identified three wetland areas on the host parcel. Two of the wetlands (Wetlands 1 & 2) are located adjacent to the site and within a portion of the site development area. Wetland 1 is primarily a forested swamp located west of the solar array and north of the access drive. Wetland 2 is a seep wetland associated with Falls Brook that is located southeast of the solar array. The edges of both wetlands are traversed by an existing farm road.

Resurfacing and improving the existing farm road for Project use would result in approximately 750 square feet of direct wetland impact where an existing culverted wetland crossing would be replaced. Temporary wetland impact includes the clearing of approximately 1,850 square feet of trees along the edge of the western portion of Wetland 1 to accommodate the installation of the facility interconnection line. No grubbing or stump removal would occur in this area to avoid wetland soil disturbance and the cut areas would revert into a shrub layer. Relocation of the interconnection route away from the wetland to reduce tree clearing is not possible due to the landowner's planned use of the adjacent field.

The solar modules would be a minimum of 100 feet to any adjacent wetland area. The nearest construction activity, a stormwater swale discharge point, is approximately 51 feet from Wetland 1.

A vernal pool (VP) is located in the central portion of Wetland 1. VP habitats include a vernal pool envelope (VPE), which extends from the VP edge to a distance of 100 feet, and a Critical Terrestrial Habitat (CTH) which extends from 100 feet to 750 feet from the VP edge. Both the VPE and CTH protect the water quality of the pools for VP obligate species. The 2015 US Army Corps of Engineers (USACE) Vernal Pool Best Management Practices recommends that the developed area of the CTH remain below 25 percent to maintain quality VP habitat.

Development of the site would not impact the VPE and a forested canopy would remain. The proposed access road is approximately 255 feet south of the VP. Although the project would increase the developed area of the CTH from approximately 16 percent to 22 percent, it would remain below the USACE-recommended 25 percent threshold.

A stormwater basin would be approximately 285 feet east of the vernal pool and may intercept seasonally high groundwater. To prevent this basin from acting as a decoy pool for vernal pool species, the basin could be modified to include a low-level outlet so that basin drainage is improved. Additionally, the

Petitioner would install isolation barriers around all of the stormwater basins within 750 feet of the VP to reduce the potential for VP species to use the basins as a breeding area.

The Petitioner would implement a Wetland Resource Protection Plan that includes, but is not limited to, site monitoring, training, signage, site monitoring, and reporting. The Petitioner would establish erosion and sedimentation controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and would use meshless or jute erosion control netting to reduce the potential entanglement of amphibian and reptile species that may inhabit the site. An Invasive Species Plan would also be implemented that includes, but is not limited to, washing of equipment and post-construction site monitoring/removal for two years.

Wildlife

The host parcel is not within a DEEP Natural Diversity Data Base area.

The northern long-eared bat (NLEB), a state-listed Endangered Species and federally-listed Threatened Species, is known to occur in Connecticut. However, the nearest known NLEB habitat resource is located more than 10 miles from the site and no impact to NLEB is expected. A US Fish and Wildlife Service (USFWS) NLEB impact permit is not required. Although no NLEB restrictions are recommended by the USFWS, the Petitioner would be willing to avoid tree clearing from June 1 to July 31 to avoid impacting NLEB that may be using forested areas for roosting.

The USFWS consultation did not identify any other federally-listed species at the site.

The fenced solar field would be seeded with a Fuzz and Buzz Seed Mix (or similar) that contains pollinator species. Areas outside of the fenced area would be seeded with a Northeast Solar Pollinator Buffer Seed Mix (or similar).

Forest

Approximately 14.3 acres of forest would be removed to develop the project. An approximate 44-acre small core forest block is located partially on the host-property, extending into the abutting property to the north and west. Development of the Project would convert approximately 18 acres of this small core forest block into field areas and edge forest, creating three smaller core forest blocks, one of which would be located on the host property. The existing 44-acre core forest block is too small to support many edge-intolerant forest species and thus the development of Project would have a minimal impact on core forest species. Larger blocks of core forest (250-500 acres) are required to support interior forest species.

Air Quality

The Project would not produce air or water emissions as a result of operation. The Project would not produce air emissions of regulated air pollutants or greenhouse gases during operation.

Water Quality

The site is not within a DEEP-designated Aquifer Protection Area. The nearest Public Drinking Supply Watershed, associated with the Stony Brook Reservoir, is located approximately 0.7 miles to the northwest.

The property owner's residence and other area residences are served by private water wells. The Petitioner does not expect any impact to the wells through the installation of project racking posts.

A Petroleum Materials Storage and Spill Prevention Plan would be implemented for the project to protect water resources.

The facility would not use or discharge water during site operations.

Stormwater

Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater discharges. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices.

The DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) requires implementation of a Stormwater Pollution Control Plan (SWPCP) to prevent the movement of sediments off construction sites into nearby water bodies and to address the impacts of stormwater discharges from a proposed project after construction is complete. In its discretion, DEEP could require an Individual Permit for discharges and hold a public hearing prior to approving or denying any General or Individual Permit (Stormwater Permit) application.

A DEEP-issued Stormwater Permit is required prior to commencement of construction activities. The Stormwater Permit includes erosion control measures that comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and the *2004 Connecticut Stormwater Quality Manual*.

A construction sequence is included on the site plans that include the establishment of erosion control measures, site clearing and construction and installation of stormwater control swales. Once the disturbed areas are fully stabilized, installation of site infrastructure would commence.

The Petitioner has not discussed the Project with the DEEP Stormwater Division to date. The Petitioner would meet with DEEP once a General Permit application is filed. The Petitioner performed a stormwater analysis that concluded five detention basins and associated swales would be required to keep post-construction runoff below pre-construction levels.

Operation and Maintenance

A post-construction Operations and Maintenance (O&M) Plan has been developed that includes provisions for periodic inspections of physical site features and structural and electrical components.

An evaluation of the facility and performance of preventative maintenance measures would be conducted annually by on-site personnel. The evaluation would include the electrical system/components, physical infrastructure, and site vegetation. Replacement modules would not be stored on-site.

Module cleaning would only be conducted on an as needed basis using water. Snow removal is not anticipated.

Pesticides and/or herbicides would only be used at the site when necessary and would not be used within 100 feet of wetlands.

Decommissioning

The Project has a minimal operational life of 20 years, but may operate for 25 to 30 years based on lease options. At the end of the Project's useful life, the Project would be decommissioned and the site restored to is its original condition. Project decommissioning would include removal and disposal or recycling of all above-surface project components. It is anticipated decommissioning would be completed within 8 weeks.

All recyclable materials would be transported to appropriate recycling facilities. Any non-recyclable materials will be properly disposed of at a nearby landfill (estimated 5 percent of material). The transformer and interconnection equipment pads would be removed. Underground infrastructure would be removed to a depth of three feet. The utility poles related to the Petitioner's side of the interconnection would be removed at the request of the property owner.

Disturbed areas would be backfilled with native soil, stabilized and seeded. Any compacted areas that could inhibit the growth of new vegetation would be aerated.

The selected solar panels for the Project (as revised on June 2, 2022) meet current Toxicity Characteristic Leaching Procedure (TCLP) criteria for characterization as nonhazardous waste in the event the solar panels are not recycled at the end of the project's life.

Conclusion

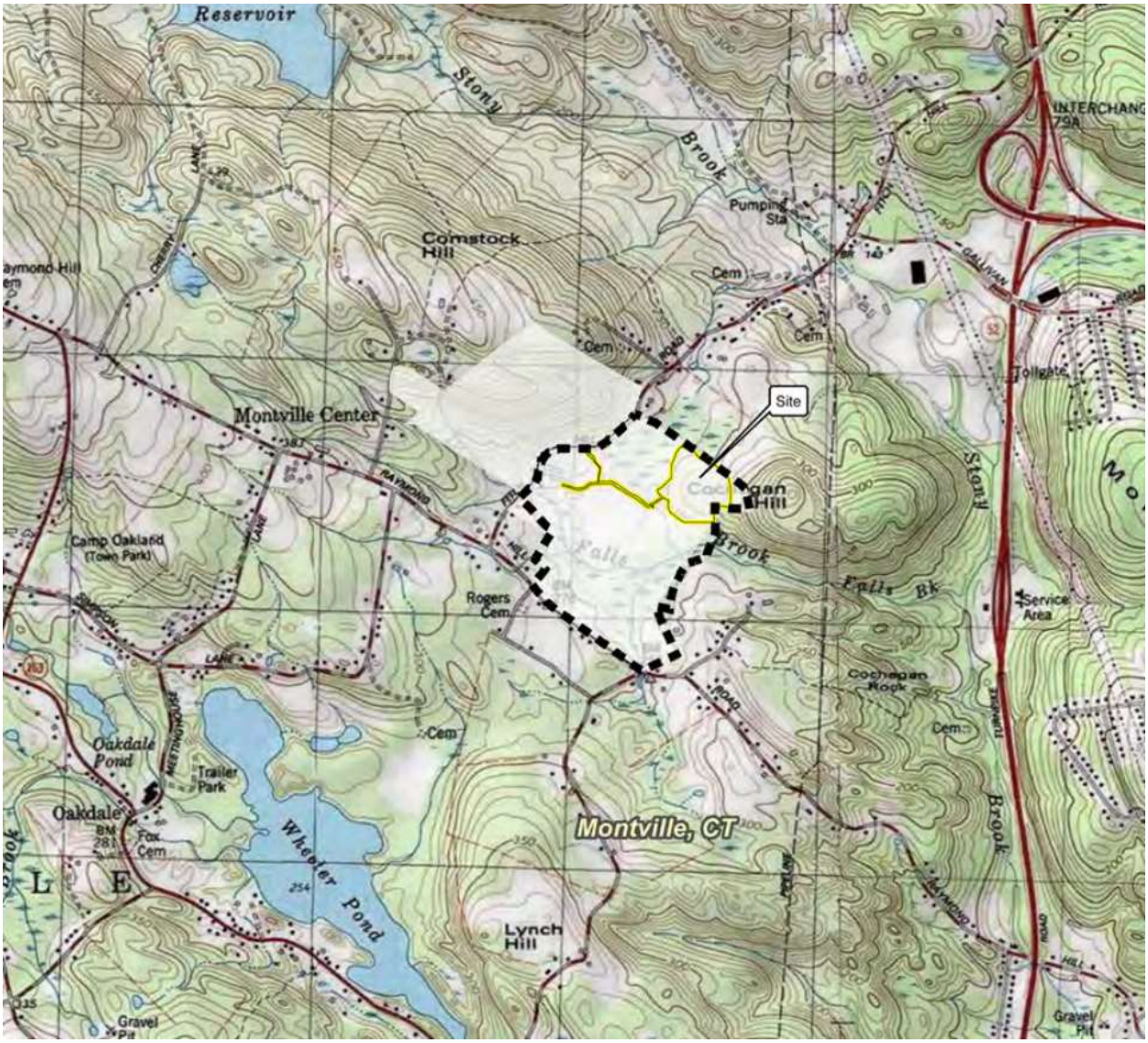
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce 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. Furthermore, the project was selected under the state's LREC/ZREC Program.

Recommendations

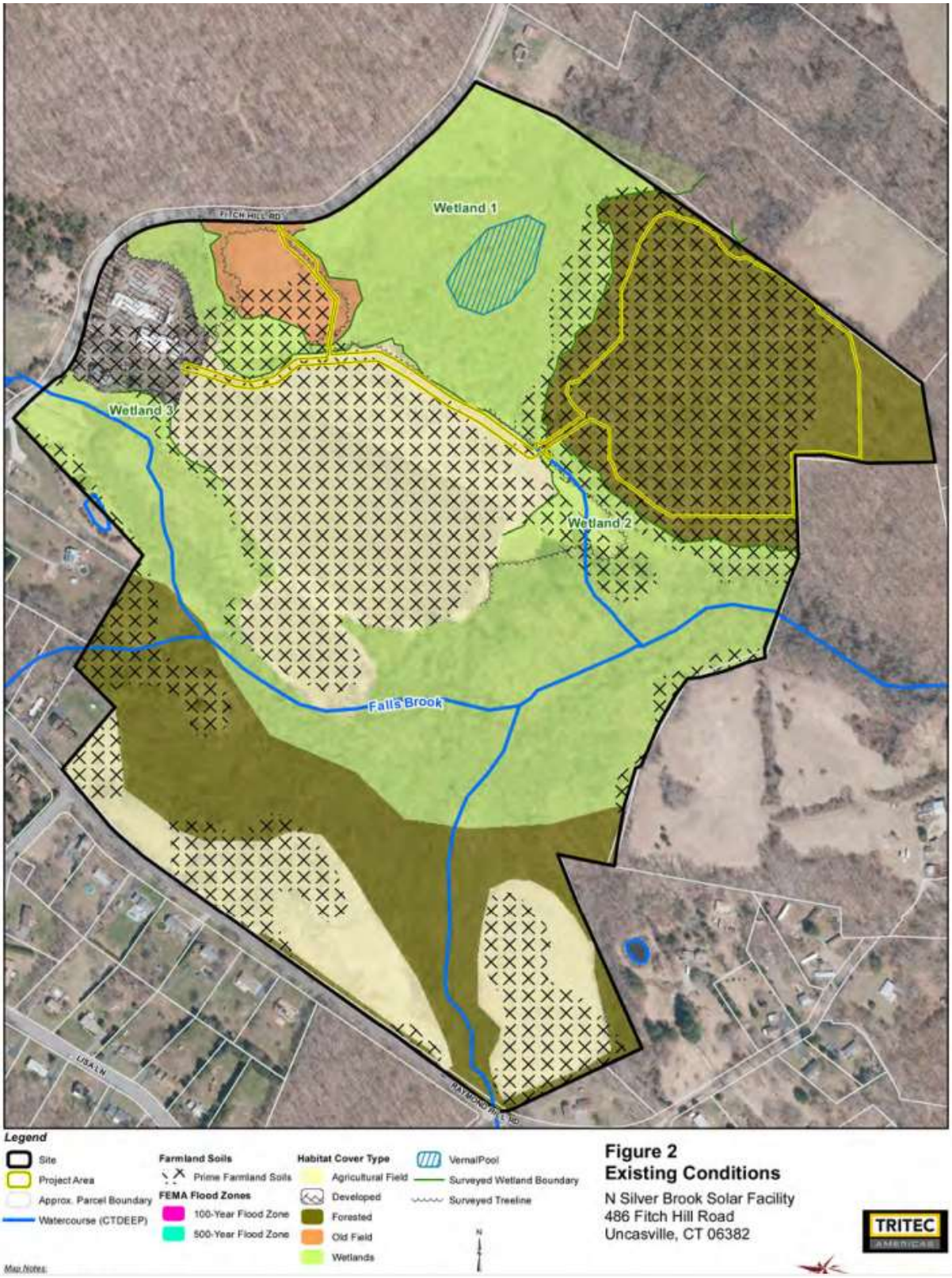
If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction;
3. Submit the final structural design for the racking system stamped by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
4. Utilize a pollinator seed mix within the solar array area;
5. Provide training to emergency responders;
6. Consult with Eversource to reduce the visual impact of the electrical interconnection, including minimization of visibility on the Petitioner's side of the interconnection, and report the result of consultation to the Council prior to the commencement of construction; and
7. Avoid tree clearing from June 1 to July 31 to avoid potential impacts to the Northern Long-eared bat.

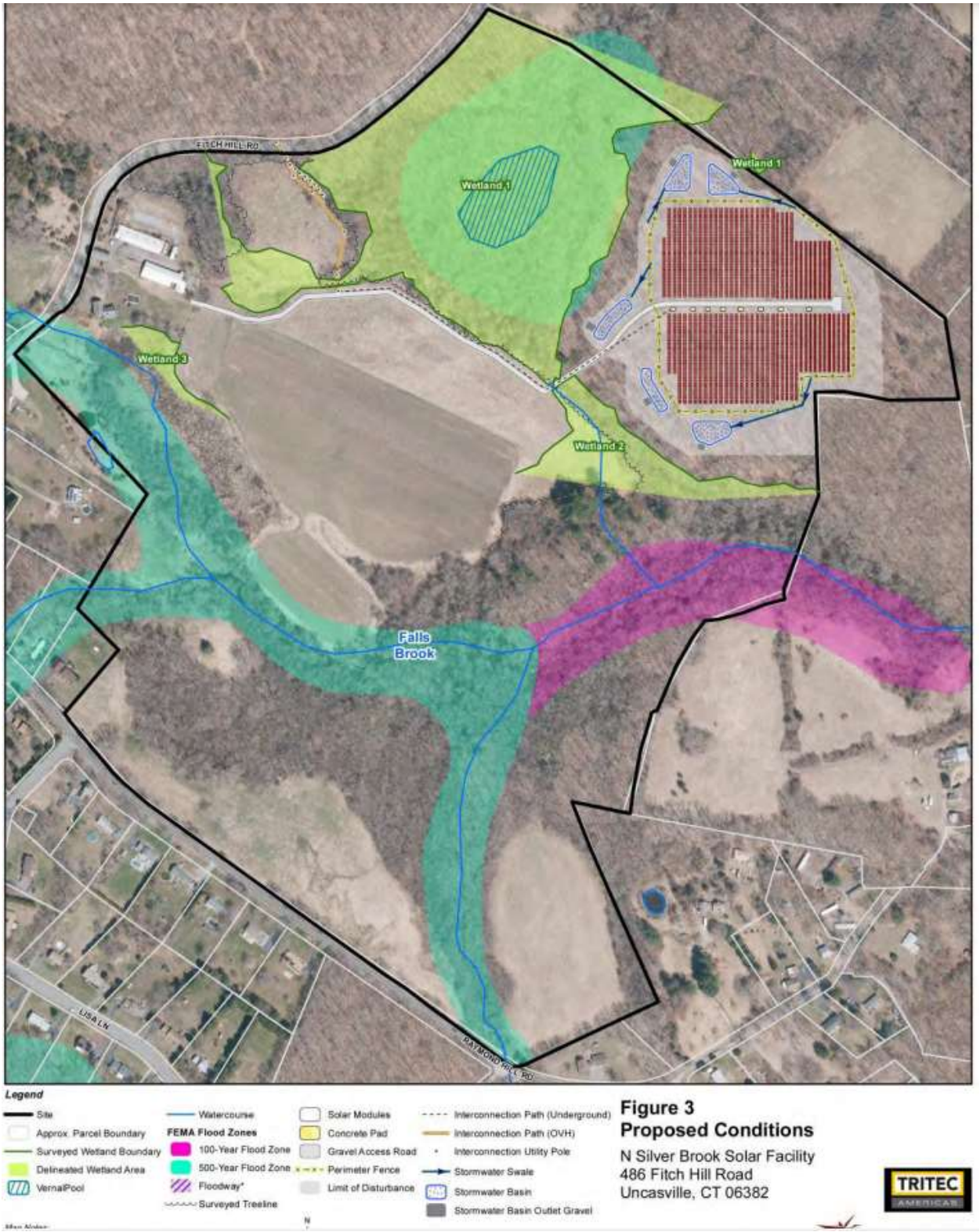
Site Location



Host Property- Existing Conditions



Proposed Site



Aerial Imagery of Existing and Proposed Conditions