DRAFT

Petition No. 1395A
Windham Solar LLC
31 Benz Street, Ansonia
Staff Report

March 5, 2021

Introduction

Petition 1395

On February 26, 2020, Windham Solar LLC (WS 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 three 1.0-megawatt (MW) alternating current (AC) solar photovoltaic generating facilities located at 31 Benz Street, Ansonia, Connecticut (Petition 1395).

On February 28, 2020, the Council sent correspondence to WS noting a deficiency in the completeness of Petition 1395. Specifically, pursuant to CGS §16-50k(a), the Petition did not contain correspondence from the Department of Agriculture (DOAg) that the proposed facility will not materially affect the status of prime farmland and/or written correspondence from the Department of Energy and Environmental Protection (DEEP) that the proposed facility will not materially affect the status of core forest. The Council recommended WS either:

1. Provide written correspondence from the Department of Agriculture that the proposed facility will not materially affect the status of prime farmland and/or written correspondence from the Department of Energy and Environmental Protection (DEEP) that the proposed facility will not materially affect the status of core forest on or before March 27, 2020; or
2. Submit the proposed project as an Application for a Certificate of Environmental Compatibility and Public Need.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act (UAPA), an administrative agency is required to take action on a petition within 60 days of receipt. April 26, 2020 was the deadline for Petition 1395 under CGS §4-176(e). On March 13, 2020, the Council sent correspondence to WS requesting consent for an extension of the 60-day deadline for agency action on Petition 1395 to May 30, 2020. WS did not respond to the Council's request for an extension.

On March 25, 2020, WS requested an extension of time to April 16, 2020 to obtain the written determination from DEEP that the proposed facility would not materially affect the status of core forest. On March 25, 2020, the Council granted the extension of time. The written determination from DEEP was not received by the April 16, 2020 deadline.

On April 17, 2020, the Council rejected Petition 1395 on the basis that it is incomplete, and not in compliance with CGS §16-50k(a) and RCSA § 16-50j39(a).

Petition 1395A

On June 23, 2020, pursuant to CGS §4-176 and §16-50k, WS submitted an amended petition for a declaratory ruling for the construction, maintenance and operation of one 1.0 MW and one 0.99 MW solar photovoltaic electric generating facilities at the proposed 31 Benz Street site in Ansonia (Petition 1395A).

On June 25, 2020, the Council sent correspondence to WS noting a deficiency in the completeness of Petition 1395A. Specifically, notice requirements set forth in RCSA §16-50j-40 were not met. WS submitted correspondence to the Council on June 30, 2020 evidencing compliance with the notice requirements. On July 2, 2020, the Council acknowledged WS' compliance with the notice requirements and rendered Petition 1395A complete.

Pursuant to RCSA §16-50j-40, on or about June 29, 2020, the Petitioner notified City of Ansonia (City) officials, state officials and agencies; the property owner, and abutting property owners of the proposed project.

Pursuant to CGS §4-176(e) of the UAPA, an administrative agency is required to take action on a petition within 60 days of receipt. August 22, 2020 was the deadline for action on Petition 1395A 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 thus extending the deadline for action to November 21, 2020. On November 19, 2020, the Council voted to set the date by which to render a decision on Petition 1395A by no later than March 20, 2021. This is the 180-day final decision deadline for Petition 1395A

The Council issued its first set of interrogatories to the Petitioner on August 10, 2020. On September 30, 2020, the Petitioner submitted responses to the Council's first set of interrogatories, one of which included photographic documentation of site-specific features intended to serve as a "virtual" field review of the project.

On November 5, 2020, the City requested party status which the Council granted on November 20, 2020. Also on November 20, 2020, the Council developed a schedule for the exchange of interrogatories among participants listed on the Petition 1395A service list. No interrogatories were issued or exchanged among the participants on the service list prior to the December 3, 2020 deadline.

On November 30, 2020, the Council issued its second set of interrogatories to the Petitioner. The Petitioner submitted responses to the Council's second set of interrogatories on December 20, 2020.

Municipal Consultation

On June 29, 2020, the Petitioner notified City officials of the amended project by certified mail. On June 26, 2020, the Council sent correspondence to the City stating that the Council has received the amended Petition and invited the City to contact the Council with any questions or comments by July 23, 2020. The Council did not receive any comments from the City by July 23, 2020.

On November 6, 2020, the City requested party status. On November 20, 2020, the Council granted the City party status.

On February 22, 2021, the City submitted a request for permission from the Council to issue interrogatories to the Petitioner. On the same date, the Council forwarded the City's interrogatories to the Petitioner and asked for responses as soon as practicable. The Petitioner submitted responses to the City's interrogatories on March 1, 2021.

State Agency Comments

On February 26, 2020, the Council sent correspondence requesting comments on Petition 1395 from the following state agencies by March 27, 2020: DEEP; 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).

Comments on Petition 1395 were received from CEQ on March 26, 2020. No other state agencies commented on Petition 1395.

On June 26, 2020, the Council sent correspondence to the above-referenced state agencies requesting comments on Petition 1395A by July 23, 2020. No comments were received.

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

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 Petition 1395A 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 two 15-year contracts with the United Illuminating Company (UI) 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 is not among the competitive energy procurement programs that are exempt from Public Act 17-218.

At the end of the 15-year contract period, WS would seek other revenue mechanisms for the energy produced by the facility. The Project has a useful life of approximately 45 years.

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

Proposed Site

The Petitioner proposes to construct the solar facility on a site[2] located on an approximately 12.72 acre parcel that is zoned residential (RA). The parcel is mostly undeveloped except for a two-story house, a shed, and a barn foundation that are accessed from Benz Street.

Most of the site consists of woodland with some wetlands in the northwestern area and grassy areas along Benz Street. Surrounding land use consists of predominately residential to the east, west and south and undeveloped forest to the north. The site is located on a shallow hill that gains elevation moving northeast from Benz Street, then gradually descends to the wetland located in the northwest portion of the site. Site topography ranges from 400 feet to 456 feet above mean seal level.

WS considered the following factors in selecting the site:

a) Solar resource, soil characteristics and site topography;
b) local eclectic demand; and
c) proximity to suitable electrical infrastructure.

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.[3]

Proposed Project

The solar field would occupy approximately 8.6 acres of the site parcel, with an additional 1.3 acres of disturbance beyond the solar field fence for shade mitigation.

The proposed solar facility consists of two side by side solar array areas totaling 1.99 MW AC (Project 1 and Project 2, collectively, the Project). Each project array would consist of approximately 3,068 solar modules, based on a module rating of 450 Watts DC. The modules would be installed on a fixed-tilt ground-mounted racking system and oriented to the south at a 25 degree angle.

The efficiency of the panels would be 16 to 19 percent, depending on the specific manufacturer and model selected at the time of construction. The panel efficiency decreases approximately 0.5 percent per year.

The modules would be installed with a minimum ground clearance of approximately 3 feet. The maximum height to the tops of the solar panels would be approximately 8.6 feet. The aisles between the panel rows would have 12.5 feet of clear space.

Due to subsurface conditions that include subsoil, glacial till, and weathered rock, the racking system would be supported by ground screws. Pre-drilling is anticipated to install the ground screws due to the relative density of subsurface conditions. The results of the geotechnical study will be utilized by the selected racking manufacturer in their final design of the racking system, with slight adjustments made in post locations based on in-field conditions. In areas with rock outcropping, gaps in the solar panel rows may occur.

Approximately 1.2 acres of the solar field area would be re-graded. The maximum ground slope in these areas would be approximately 12 percent. Minimal grading would be required in other areas of the solar field.

The project would require 6,000 cubic yards of cut and 2,500 cubic yards of fill, for an excess cut of 3,500 cubic yards. The Petitioner prefers to process and dispose of excess material on-site rather than the more costly option

[2] 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.
[3] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2019).

of hauling the material off-site. Specifics of material processing and location of resulting fill material would be made by the excavation contractor. Disposal of the excess material would have to maintain site drainage patterns, but if alternations to these patterns occur, the DEEP Stormwater Pollution Control Plan (SWPCP) would have to be amended.

The structures and an old driveway on the property would be removed. Environmental remediation would be performed prior to building demolition, if necessary. An area of old, non-suitable fill material near the structures would be excavated and replaced with suitable fill to support the proposed solar racking system A Phase II environmental survey determined the old fill material to be non-hazardous (i.e. bricks, stumps, masonry blocks).

The Petitioner would utilize string inverters for the project with wiring attached to the racking or installed in a cable tray. String wiring at the end of the rows would transition to underground conduit extending to a concrete utility equipment pad located adjacent to the access road. Project switchgear, transformer and communication equipment would be installed on the pad. Three new utility poles would be installed for an overhead connection to UI's existing distribution system on Benz Street.

The site would be accessed by a new, 14-foot wide 150-foot long gravel driveway extending from Benz Street. A security fence would enclose the solar field. The fence is designed with sufficient interior perimeter clearance for site accessibility and maintenance around the facility.

The project would connect to UI's electric distribution grid at an existing 23 kV overhead line located along the southeast side of Benz Street. The interconnection would be in accordance with UI's technical standards and ISO-New England, Inc. and Federal Energy Regulatory Commission requirements. The point of interconnection requires pole-mounted metering and circuit protection equipment. UI has performed a system impact study for the Project and found that interconnection upgrades must be performed prior to facility interconnection. UI is currently examining various options to facilitate the interconnection.

A stormwater analysis identified two main watersheds on the site: Watershed 1 is a 2.48 acre area along Benz Street; Watershed 2 is an 8.1 acre area located in the central and western portion of the site. A site construction phasing plan has been developed that includes two main construction phases based on the watershed areas. Phase 1 includes site clearing across the site, followed by construction of the Watershed 1 stormwater basin, grubbing, grading and disturbed area stabilization. Phase 2 would commence after the Phase 1 disturbed areas have stabilized. Phase 2 includes construction of the Watershed 2 stormwater basin, grubbing, and grading, followed by solar array construction across the entire site.

If approved, construction of the project would commence in Spring 2021 and would occur over 5 months. Work hours would typically be 7:00 a.m. to 6:00 p.m., Monday through Friday and 7:00 a.m. to 5:00 p.m. Saturday and Sunday.

Public Safety

The proposed project would comply with the National Electric Code, National Electric Safety Code and National Fire Protection Association Codes and Standards, as applicable. The electrical system would be monitored remotely.

The string inverters are installed so that if one section of the solar array experiences an electrical problem that causes that section to shut down, the other sections of the solar array would still operate and transmit power to the local distribution system.

The City Fire Marshal reviewed the project and had no concerns regarding site clearances or the proposed access road. At the request of the Fire Marshal, WS would provide emergency response training and site plans

as well as conduct an on-site review of the facility layout. Local emergency responder personnel would be provided access to the facility via a Knox Pad lock

The site would be secured with 7-foot tall chain-link perimeter fencing[4], a locked access gate and motion sensitive video security cameras installed around and within the perimeter fence.

The nearest federally-obligated airport to the proposed facility is Tweed New Haven Airport located approximately 15 miles to the southeast of the proposed site. An aviation glare analysis is not required. By letters dated April 23, 2020, the Federal Aviation Administration issued a Determination of No Hazard to Air Navigation.

The operational sound levels at the site would be below the 55 dBA daytime noise limit for a commercial emitter to a residential receptor in accordance with DEEP Noise Control Regulations. The night time noise limit for a commercial emitter to a residential receptor is 45 dBA. The noise generating equipment at the site (inverters/transformers) would diminish below 55 dBA at a distance of 16.4 feet and diminish below 45 dBA at 55.1 feet. None of the property boundaries are within 55.1 feet of the noise generating equipment.

Construction related noise is exempt from DEEP Noise Control Regulations.

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

SHPO determined the proposed facility would not have an effect on historic properties.

No public parks or other publicly accessible recreation resources are located adjacent to the site.

Visibility

Due to the site's location on a hillside, a portion of the solar field would be visible from Benz Street and to residences on the southeast side of Benz Street, facing the project. The solar panels would be approximately 87 feet from Benz Street at their closest point. The nearest residence from the site is located approximately 137 feet to the southwest on Benz Street.

WS would maintain a 25-foot wide no clearing buffer to preserve woodland between the project and the residential properties to the northeast and southwest.

To mitigate views from Benz Street as well as from abutting residential properties, WS would install approximately 245 arborvitae, 6 to 8 feet tall at planting, along the perimeter fence. The plantings would be routinely inspected during the first two years of installation to ensure they become established. In addition, WS would be willing to install a black vinyl coated fence along Benz Street.

No exterior lighting would be installed at the proposed site.

Agriculture

[4] 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."

There are no mapped Prime Farmland Soils at the site.

WS proposes to implement a livestock co-use plan for the site that includes rotational sheep grazing of the solar field area from April to October. Rotational grazing would maintain site vegetation, reducing the need for mechanized mowing and weed control, resulting in a decrease in maintenance costs over the life of the Project.

The solar field would be separated into rotational grazing zones through the use of temporary fencing. No outbuildings are required. Based on previous installations, sheep do not typically chew on wires or climb on solar infrastructure.

A Fuzz & Buzz™ seed mix would be used at the site to provide forage for sheep as well as habitat for pollinator species.

Wetlands and Watercourses

A forested wetland is located in the northwest portion of the site that extends off site. Its hydrology appears to be supported primarily by groundwater seeps discharging from the extremely stony uplands upgradient of the wetland. The seeps are not identified as wetlands under state criteria.

At its closest point, project site clearing would occur 23.4 feet from the on-site wetland. Stormwater Basin 1 would be installed within 100 feet of the wetland.

None of the solar panels would be installed within 100 feet of the wetland.

A potential vernal pool (PVP) was identified within the wetland, bisected by the property boundary. A vernal pool study was performed in September 2020 and although no vernal pool obligate species were identified during the survey, it is likely the PVP would support these species**.**

An impact analysis of the PVP determined that the existing critical terrestrial habitat (CTH), the area that extends from 100 feet to 750 from the PVP edge, is presently 34 percent developed, above the 25 percent development value as recommended by the United States Army Corps of Engineers Vernal Pool Best Management Practices (VP-BMPs) to maintain quality vernal pool habitat. The project would increase the developed portion of the CTH by 18 percent. Consistent with the VP-BMPs, no development would occur within the vernal pool envelope which extends from the PVP edge to a distance of 100 feet.

The groundwater discharge to the vernal pool and wetland would not be adversely impacted as the size of the contributing watershed would remain the same. Proposed Stormwater Basin 1 is located higher in elevation than the vernal pool and wetland and is designed to capture rainfall events, allowing infiltration and groundwater recharge. The basin would be seeded with a wetland plant seed mix.

Wildlife

The Petitioner submitted a request to DEEP for a Natural Diversity Database (NDDB) review of the Project. DEEP responded to the Petitioner on January 24, 2019 indicating that the project is not within a mapped NDDB area. This NDDB determination expired on January 24, 2021.

During the PVP survey in September 2020, the field biologist identified an eastern box turtle, a state special concern species, within the on-site forested wetland. WS has developed an amphibian and box turtle population program that includes an on-site environmental monitor, protective barriers, weekly species sweeps from March 1 through May 15th, and project reporting.

One federally-listed Threatened-Species and state-listed Endangered-Species, the northern long-eared bat, (NLEB) occurs within the Connecticut. The proposed facility is not located within 150 feet of a known NLEB maternity roost tree or within 0.25 mile of a known NLEB hibernaculum.

Forest

Development of the Project would require clearing of approximately 10.68 acres of forest. Stumps would be removed to a distance of 25 feet from the perimeter fence line to facilitate the planting of the arborvitae.

Air Quality

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

Over the expected 45-year lifespan, the facility would result in the offset/elimination of approximately 156,229 tons of CO2 equivalent, or about 33,029 passenger vehicles taken off the road.

Water Quality

The site parcel is also not located within a DEEP-designated Aquifer Protection Area.

Groundwater in the site area is classified GA which is presumed to be suitable for direct human consumption without the need for treatment. Designated uses are existing private and potential public drinking water supply.

Rock removal to develop the site would occur at the surface and impacts to adjacent drinking water wells are not anticipated.

Project work would be performed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control.*

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.

WS has designed the stormwater management system with documents prepared by a licensed Connecticut Professional engineer. The facility was designed to comply with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*, the *2004 Stormwater Quality Manual* and the hydraulic modeling requirements outlined in DEEP's draft Appendix I, Stormwater Management at Solar Array Construction Projects document. WS submitted a Stormwater Permit application for the project to DEEP on December 30, 2020. WS has not met with DEEP to discuss the Project.

Two post-construction stormwater basins are proposed. Stormwater Basin 1 is a linear basin that extends along the northwest side of the solar field, outside of the perimeter fence. A single rip-rap spillway discharges towards the on-site wetlands. Stormwater Basin 2 is a linear basin located along the south edge of the site. A single rip-rap spillway discharges towards Benz Street. Excess discharge would be captured by a catch basin on Benz

Street. Peak flow rates from the sub-watershed that drains to Benz Street are reduced due to the installation of the stormwater basin.

Decommissioning Plan

A Decommissioning Plan was included in the Petition that has provisions for project removal, component recycling and site stabilization/restoration. The stormwater management system would remain in place.

Conclusion

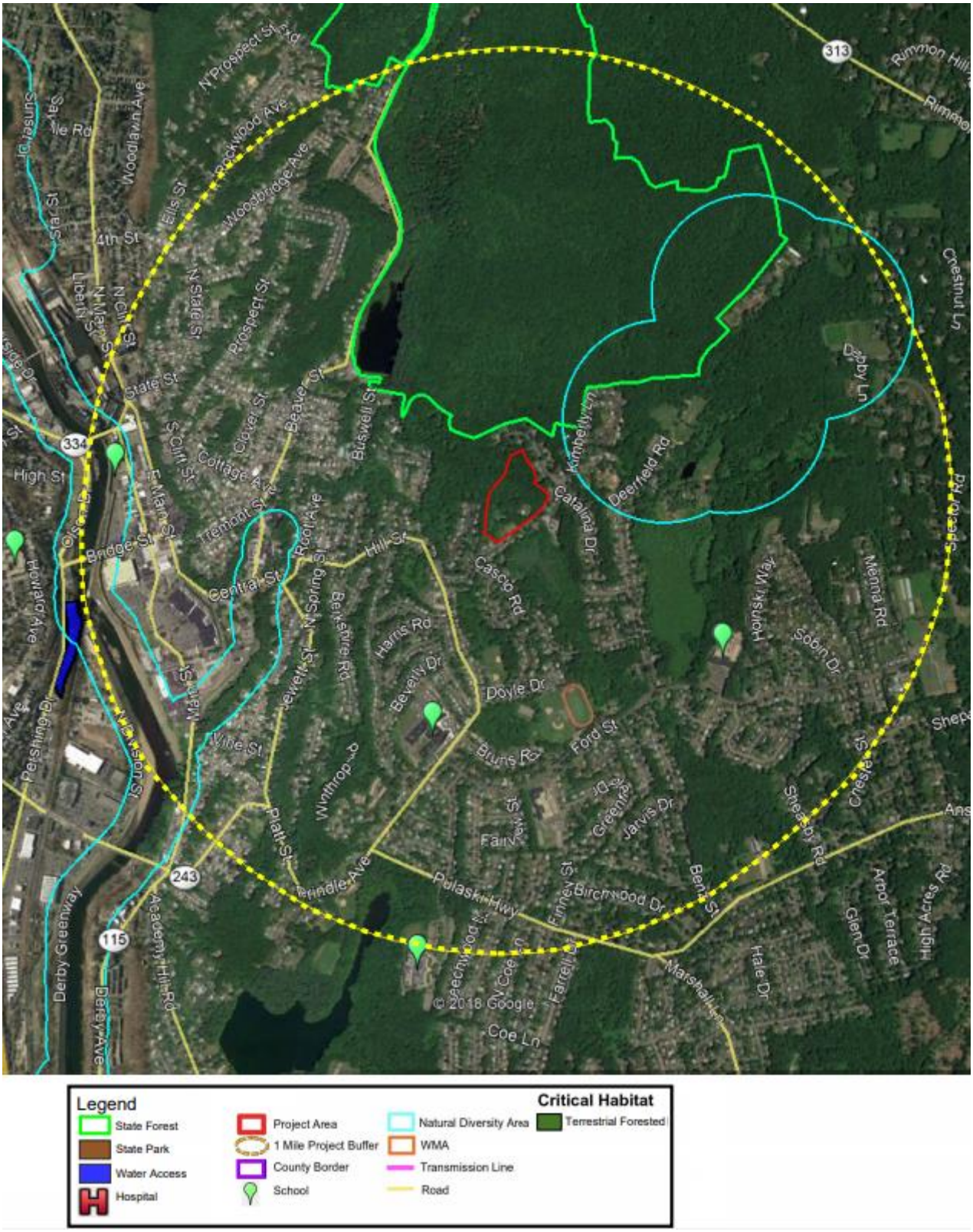
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce 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:

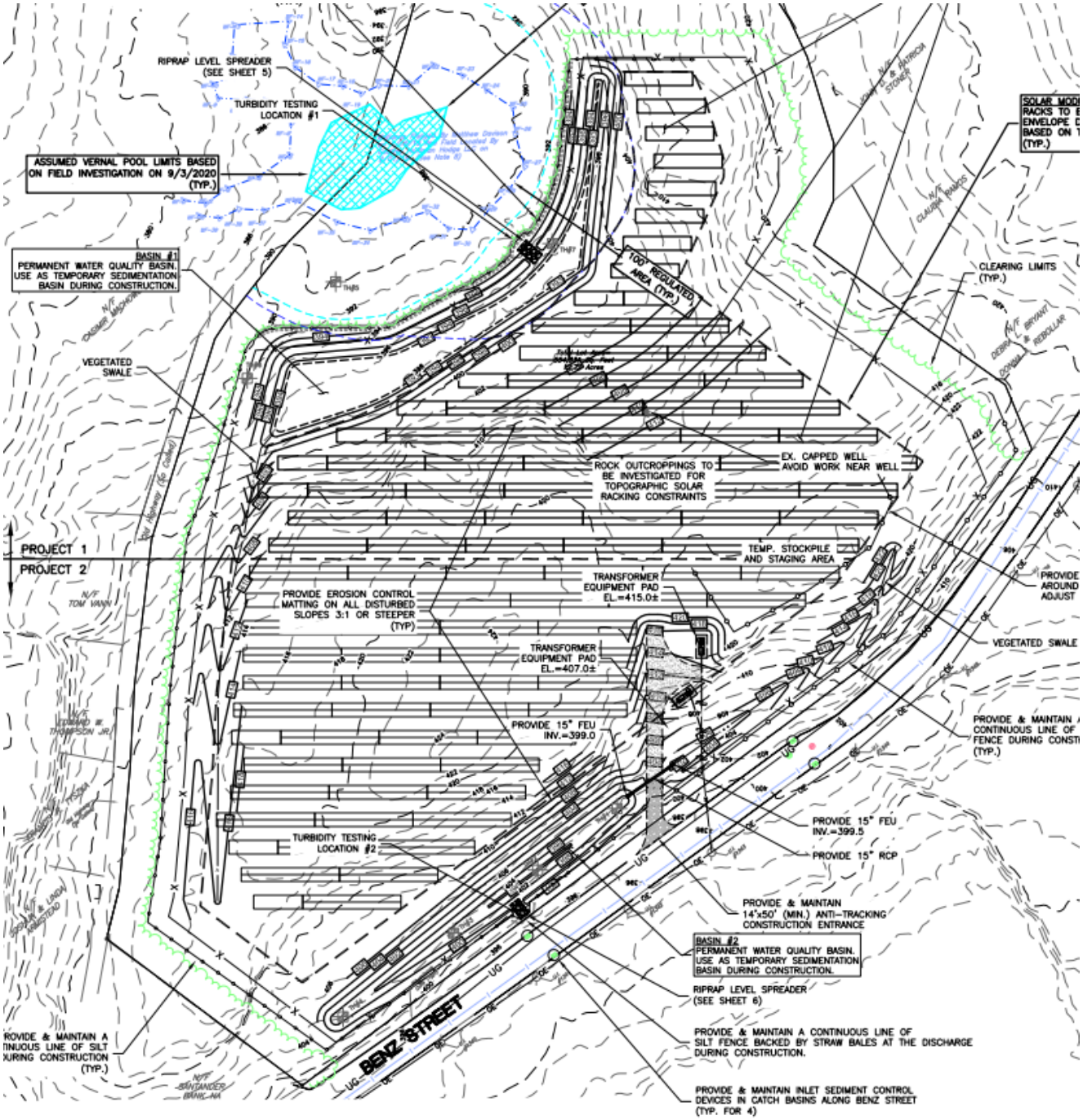
1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction;
3. Submit an updated DEEP NDDB determination letter prior to commencement of construction;
4. Consult with the DEEP Dam Safety Program regarding permitting requirements, if any, for the proposed stormwater basins prior to site construction;
5. 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;
6. Identification of the location for the on-site disposal of excess cut material from site grading activities;
7. Submit a detailed site livestock co-use plan; and
8. Install a black vinyl coated solar field perimeter chain link fence along Benz Street.

Site Location



Aerial Site Plan

Site Plan Drawing



Detail of Wetland, Potential Vernal Pool and Stormwater Basin 1