DRAFT

Petition No. 1652
391 Durham LLC
1.975 MW Solar Electric Generating Facility
391 Durham Road, Madison, Connecticut

Staff Report
April 11, 2025

Notice

On December 24, 2024, the Connecticut Siting Council (Council) received a petition from 391 Durham, LLC (3DL) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 1.975 megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility and associated equipment located at 391 Durham Road in Madison, Connecticut, and associated electrical interconnection (Petition or Project).

Pursuant to CGS §16-50k, the Council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling any distributed resources facility with a capacity of not more than 65 MW unless the Council finds a substantial adverse environmental effect.

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40 on or about December 2, 2024, 3DL notified Town of Madison (Town) officials, state officials and agencies, and abutting property owners of the proposed Project. No comments were received.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. During a regular meeting held on February 20, 2025, 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 June 22, 2025, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

The Council issued interrogatories to 3DL on February 21, 2025. 3DL submitted responses to the Council's interrogatories on March 14, 2025, one of which included photographic documentation of site-specific features intended to serve as a "virtual" field review of the Project site. 3DL submitted amended interrogatory responses (#19 & #39) on March 21, 2025.

Community Outreach

3DL met with Town officials in September 2019, January 2020, and December 2024 to discuss the Project. No specific concerns were raised at these meetings.

On December 24, 2024, 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 January 23, 2025. No comments were received.

3DL held a public information meeting on March 5, 2025 that was attended by Town Committee members and residents. One resident requested additional landscape screening in the northwest corner of the Project. 3DL subsequently revised the site drawings, submitted to the Council on March 14, 2025, to include plantings in this area.

State Agency Comments

On December 24, 2024, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by January 23, 2025: 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 Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); the State Historic Preservation Office (SHPO); and the Office of Consumer Counsel (OCC).

In response to the Council's solicitation, DEEP submitted comments on February 7, 2025 related to wildlife, wildlife habitat, visibility, wetlands, noise, core forest and stormwater.[1] These concerns, among other environmental concerns, are addressed in the Environmental Effects and Mitigation Measures section of this document, pursuant to CGS §16-50p.

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

Public Act 17-218[3] 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 such land as core forest."

The proposed solar facility has a generating capacity of 1.975 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 state Comprehensive Energy Strategy (CES) examines future energy needs and identifies opportunities to reduce ratepayer costs, ensure reliable energy availability, and mitigate public health and environmental impacts. CES Strategy No. 3 is "Grow and sustain renewable and zero-carbon generation in the state and region." The state Integrated Resource Plan assesses the state's future electric needs and a plan to meet those future needs,

[1] https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1652/sac_municipal_official_comments/pe1652_statememo-deep_commentsrecd_a.pdf?rev=c6bc93e2214c49219b10feeaf267e61f&hash=500BC81C5782BD368180E0477891D0C9

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

[3] Codified at Conn. Gen. Stat. §16-50k(a) and §16a-3k (2024)

including, but not limited to, pathways to achieve a 100 percent zero carbon electric supply by 2040. Furthermore, the Governor's Executive Orders and Council on Climate Change examine existing policies and identify new strategies to combat climate change. 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.

Public Act 05-1, An Act Concerning Energy Independence, established a rebuttable presumption that there is a public benefit for electric generating facilities selected by DEEP in a Request for Proposals.

The Project was selected in the statewide Shared Clean Energy Facility (SCEF) Program, which is a competitive procurement process administered by the state's electric distribution companies to develop utility scale renewable energy. New or incremental Class I renewable generation projects ranging in size from 100 to 5,000 kW (AC) are eligible to bid into the SCEF Program for a Tariff Terms Agreement (TTA) with a 20-year term.

The electricity, capacity and renewable energy credits produced by the facility would be sold to Eversource Energy (Eversource) in accordance with the TTA.

At the conclusion of the 20-year SCEF contract, 3DL may continue to operate the facility and seek other revenue mechanisms at that time.

3DL would not participate in an ISO New England, Inc. (ISO-NE) Forward Capacity Auction (FCA) because Eversource would own the capacity rights of the facility under the SCEF Program.

Proposed Site

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the proposed solar electric generating facility "site." Under 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. The Council does not have jurisdiction or authority over any portion of the host parcel beyond the boundaries of the Project "site." This includes portions of the parcel retained by the landowner and portions of the parcel the landowner may lease to third parties. Once a facility is decommissioned, the Council no longer has jurisdiction or authority over the Project "site."

Under a lease agreement with the property owner, 3DL proposes to construct the solar facility on an approximate 8.3-acre site within a 12.7-acre host parcel located at 391 Durham Road.

The host parcel is developed as a golf driving range with open turf areas, a barn structure to the north, a walkway/covered tee box to the east and a single-story, multi-tenant commercial building with a gravel parking lot fronting Durham Road.

The host parcel is generally flat with elevations ranging from approximately 90 feet above mean sea level (amsl) in the southwestern corner to approximately 83 feet amsl in the northeastern portion. Slopes do not exceed 7 percent.

Access to the site will be across a leased portion of the existing parking lot and a new 15-foot wide, 705-foot long gravel drive. The access drive would end at a turnaround area adjacent to the equipment pad.

Land use surrounding the site consists of residential development to the west, and south, commercial development to the east, across Durham Road, and open space to the north.

3DL selected the site due to availability and suitable environmental and topographic attributes. 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.[4]

The lease agreement with the property owner includes provisions related to decommissioning and site restoration at the end of the Project's useful life. The lease term is for 20 years with the option for an additional 15 years with extensions. At the end of the Project's useful life, 3DL will decommission the Project and restore the site to substantially the same condition as the existing conditions.

Proposed Facility and Associated Equipment

The proposed 1.975 MW solar facility consists of 3,820 solar panels rated at 695 Watts. The panels would be installed on a single-axis tracker system supported by posts. The array would be arranged in linear rows in an east-west direction, separated by 7.8-foot wide vegetated aisles. At maximum tilt, the panels would be approximately 8 feet above grade at the highest point and 2.5 feet at the lowest point.

Electrical equipment includes switchgear and a 2,000-kVA transformer on a 10-foot by 45-foot concrete pad in the central portion of the site. Eight inverters would be installed on a post-racking system adjacent to the pad.

Panel row wiring would generally extend along the racking system to reduce potential damage from weather events, maintenance activities or animals. In areas where wiring is not run along the racking, it would be installed underground in conduit.

The proposed electrical interconnection would extend underground from the electrical equipment pad through the solar array and portions of the host parcel, transitioning to overhead adjacent to the existing parking lot. The overhead portion would be supported on five utility poles. One pole supports 3DL's disconnect switch and the other four poles support Eversource equipment or facilitate interconnection to the existing distribution circuit (#30R10) on Durham Road. Eversource's 23 kV 30R10 distribution circuit connects to Eversource's Green Hill Substation.

Eversource reviewed and approved the interconnection design. 3DL has an executed interconnection services agreement with Eversource and received a no significant adverse effect determination from ISO-NE.

The projected capacity factor for the proposed solar facility is approximately 22 percent. The power output would decline over time with an anticipated annual power output loss of approximately 0.5 percent. A battery storage system is not proposed at this time.

The solar facility would be enclosed by a seven-foot tall chain link fence, encompassing a 6.9 acre area. A single access gate would provide access to the interior of the array.

[4] *Corcoran v. Conn. Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2024).

The nearest residence from the proposed perimeter fence is approximately 224 feet to the southeast at 361 Durham Road. The nearest property line from the perimeter fence is approximately 37 feet to the northwest, owned by the Madison Land Conversation Trust. An approximate 75-foot long portion of the proposed access drive would run along the south property line with 361 Durham Road where it extends from the existing gravel parking lot.

The Project is not proposed to be undertaken by state departments, institutions or agencies, and is not to be funded in whole or in part by the state through any contract or grant. The estimated cost of the Project is $4.25 million.

Public Health and Safety

The Project would comply with the current National Electrical Code (NEC), National Electrical Safety Code, Connecticut State Fire Prevention Code and National Fire Protection Association codes and standards, as applicable.

The nearest airport is Chester Airport, located approximately 7 miles northeast of the site in Chester. Notice to the Federal Aviation Administration (FAA) is not required for site construction, including the use of a temporary crane. The FAA does not require a glare analysis for solar installations that are located on non-airport land.

The proposed facility would be remotely monitored through a 24/7 data acquisition system (DAS). The DAS would send alarms identifying issues with system performance. If necessary, a service team would be dispatched to the site to address system issues.

A recloser device would automatically shut down the facility in the event of a fault being detected at the point of interconnection. A manual disconnect switch would be located on the exterior side of the facility access gate. The access gate would include a universal key box for emergency access to interior areas of the array.

3DL developed an Emergency Response Plan for the proposed facility. It includes, but is not limited to, emergency procedures and contact information for the Madison Police and Fire Departments.

The nearest fire hydrant is approximately 0.9 mile to the south. A pond located on the host parcel could serve as an emergency water source for the fire department, if necessary.

The methods of fire response would be determined by the fire department. 3DL would provide facility operation and safety training for local emergency responders

The transformer would contain insulating fluid, typically seed oil, mineral oil, or silicone oil. 3DL would select a transformer with a leak detection system.

Electric and Magnetic Fields (EMF) produced from solar facility electrical components would dissipate quickly with distance and therefore would be similar to pre-existing EMF background levels at the property lines.

The proposed seven-foot high chain link perimeter fence complies with the NEC fencing requirements[5].

[5] 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

The proposed facility would be in compliance with DEEP Noise Control Standards. The Project's inverters and transformer are more than 200 feet from the nearest property line in all directions. Noise modeling indicates noise from the daytime operation of the Project would be approximately 56 dBA from the equipment pad to the nearest residential property line, approximately 201 feet to the south at 473 Green Hill Road.

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

Air and Water Quality

The Project would not produce air or water emissions as a result of operation.

The site is not located within a DEEP-designated Aquifer Protection Area. The surrounding properties are served by private wells. The installation of the posts for the racking system is not expected to impact groundwater. 3DL will implement a construction Petroleum Materials Storage and Spill Prevention Plan to protect surface and ground water resources.

3DL performed a wetland survey in September 2023, identifying three wetlands on the host parcel. Wetlands 1 and 2 are located in the west-central and southeast portions of the host parcel. The wetlands have been historically disturbed through the removal of soils and installation of basins to develop turf areas for the golf range. Wetland 3 consists of a manmade pond in the northeast portion of the host parcel. The pond has mowed edges and receives stormwater flows from a swale along Durham Road.

A total of 3.9 acres of disturbed wetlands exists on the host parcel. Development of the Project would occur within cleared turf areas of the site, including 2.3 acres of the disturbed wetlands. Permanent direct wetland impacts and temporary impacts would be approximately 800 square feet and 1,000 square feet, respectively for the installation of racking posts. The posts would be driven to a depth of 4.5 to 7 feet. Given the existing disturbed nature of the wetlands, the installation of the racking posts would not have an adverse impact to wetland functions and values. The use of a ballast mount racking system was considered and rejected as it would require additional wetland soil disturbance as well as create impervious surfaces.

Although not required by the DEEP Stormwater Program or the U.S. Army Corps of Engineers (USACE), 3DL would implement a wetland mitigation plan that includes the restoration of approximately 0.17 acre of disturbed wetland with an 0.18-acre wetland buffer area in the northern portion of the host parcel, adjacent to the solar array. The wetland mitigation plan also includes the removal of 55 liner feet of concrete piping to expose an intermittent water course.

3DL would establish erosion and sedimentation controls in accordance with the applicable *Connecticut Guidelines for Soil Erosion and Sediment Control* (E&S Guidelines) and *Connecticut Stormwater Quality Manual*.

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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."

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.

Construction of the Project would require approximately 8.3 acres of ground disturbance and thus, a DEEP-issued Stormwater Permit is required prior to commencement of construction. The Stormwater Permit and associated SWPCP incorporates Project designs consistent with the applicable E&S Guidelines and the *Connecticut Stormwater Quality Manual*.

3DL met with the DEEP Water Permitting & Enforcement Division on August 14, 2023, to discuss the Project. Due to work within disturbed wetland areas, a waiver of the Stormwater Permit Appendix I wetland buffer requirements from DEEP is necessary. On December 12, 2024, 3DL obtained USACE authorization that the Project is eligible for filing under the DEEP General Permit. 3DL would file for a DEEP General Permit at a future date.

3DL performed a stormwater analysis that determined post-development site conditions would mimic pre-developed site conditions, and therefore, no stormwater detention basins are required. Existing catch basins in Wetlands 1 and 2 would remain, continuing to drain the turf areas and discharging either to the north or to the pond on the host parcel.

Forests and Parks

Trees would be removed near the access drive entrance and in the northwest corner of the site. No other tree clearing is proposed.

A section of the Cockaponset State Forest is located approximately 0.25 mile west of the site. No impact on the forest is expected.

Fish, Aquaculture and Wildlife

The proposed site is not within a DEEP-designated Cold Water Habitat area.

DEEP issued a Natural Diversity Database (NDDB) Determination letter on September 6, 2024 indicating the eastern box turtle and wood turtle, both special concern species, occur in the vicinity of the site. 3DL developed turtle protection measures to implement during construction, including but not limited to, contractor education, signage, site inspections, 20-inch high work area isolation barriers, and reporting. Post-construction maintenance procedures for mowing were also developed to minimize potential impacts to turtles.

The northern long-eared bat (NLEB), a federal and state-listed Endangered Species occurs in Connecticut. However, there are no known occurrences of NLEB in Madison. To be protective of NLEB, 3DL would not conduct tree removal during NLEB's active season, from April 15th through September 30. By correspondence dated November 22, 2024, the U.S. Fish and Wildlife Service (USFWS) indicated it has no concerns regarding the Project.

Disturbed areas within the solar array would be seeded with Enrst Fuzz and Buzz seed mix (or equivalent) which contains a component of wildflowers beneficial to pollinators. Where necessary, the seed mix would be incorporated into existing turf areas. A wetland seed mix would be used within the wetland mitigation area.

The solar facility perimeter fence would have a four to six-inch gap at the bottom to allow for small animal movement.

Agriculture

The proposed site contains approximately 3.5 acres of prime farmland soils. No agricultural activities occur at the site.

The host parcel is not enrolled in the Public Act 490 Program for agricultural land tax abatement.

Scenic, Historic and Recreational Values

SHPO submitted correspondence on September 27, 2024 indicating that the proposed Project would not affect historic properties or archaeological resources.

There are no national, state and/or locally designated scenic roads or "blue-blazed trails" maintained by the Connecticut Forest and Parks Association within 0.5-mile of the site.

Open space parcels owned by the Madison Land Conservation Trust abut the site to the north and northwest. No trails exist on the land trust parcels.

Visibility

The Project may be visible year-round from Durham Road and seasonally visible (leaf-off) from abutting residential properties to the south.

To mitigate views of the facility, 3DL would install solid wood fencing on the north and south sides of the existing commercial building on the parcel to block views from Durham Road and install screening slats within the fence along the east, west and southern sides of the array area. Trees would be planted in the northwest and southeast portions of the site.

A dense evergreen tree line exists along the western boundary of the host parcel, effectively blocking views of the proposed site.

No exterior facility lighting is proposed.

Facility Construction

Construction of the facility would disturb approximately 8.3 acres, inclusive of the solar array, equipment pad, access road and electrical interconnection. Development of the site would require 1,216 yards of cut to develop the wetland enhancement/restoration areas and the access road. The construction contractor would be responsible for the disposal of excess earth and woody materials.

Blasting is not anticipated. If bedrock is encountered, the racking posts would be installed with a rock drill or rock screws.

3DL is proposing to construct the site in one phase beginning with establishment of E&S controls and construction of the access drive and wetland mitigation area. Installation of solar array infrastructure and landscaping would follow, and upon completion, the site would be final seeded for stabilization. A construction laydown area would be established along the access drive west of the existing building.

Construction is expected to commence in 2025, and with commercial operation planned for the first half of 2026. Typical construction hours and workdays of the week are 7:00 AM to 6:00 PM, Monday – Saturday.

Operations and Maintenance

A post-construction Operations and Maintenance Plan has been developed that includes provisions for periodic inspections of physical site features, structural and electrical components and site vegetation.

An evaluation of the facility and performance of preventative maintenance measures would be conducted in accordance with manufacturer's specifications. Site maintenance would be performed by both 3DL and third-party personnel.

Equipment at the end of service life would be replaced as necessary. Replacement modules would not be stored on-site.

Snow on the panels will be allowed to slide off. When necessary, the solar modules would be cleaned using non-toxic substances.

Site mowing would occur at a minimum once per year to suppress woody growth and maintain a meadow environment.

Decommissioning

The Project has an operational life of 35 years. At the end of the Project's useful life, it would be decommissioned, and the site restored to a meadow condition.

It is anticipated that the steel racking system, electrical components, fencing and solar modules would be recycled as applicable. All recyclable materials would be transported to appropriate recycling facilities. Any non-recyclable materials will be properly disposed of in accordance with applicable permits and regulations.

The transformer, equipment pads and gravel access drive would be removed. Steel foundation posts embedded in the ground would be removed using construction equipment. Disturbed areas and holes would be backfilled with local soil and seeded. Underground wiring within conduit would be removed; the conduit would remain in place.

3DL would select solar panels that 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.

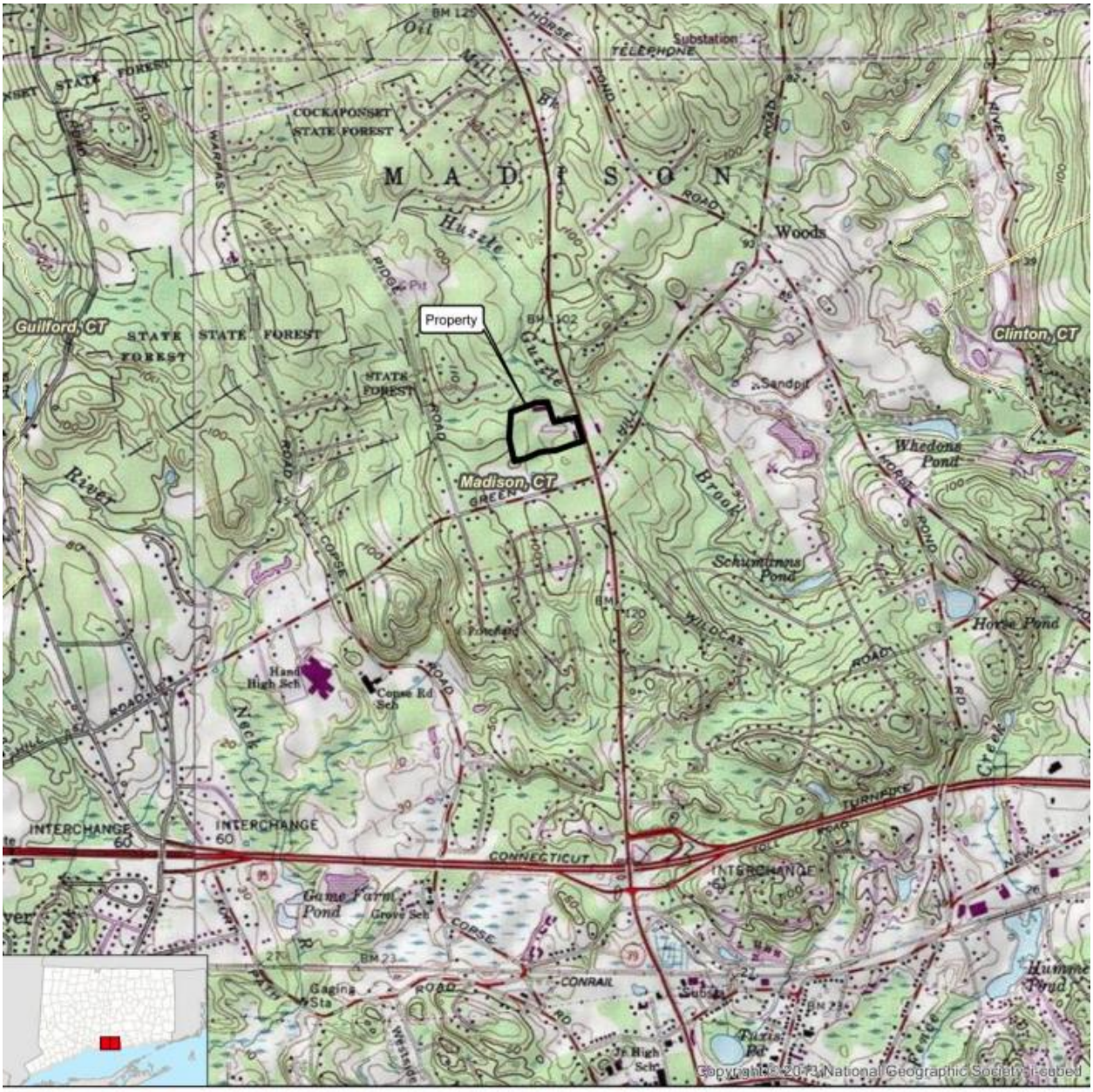
Conclusion

The Project is a grid-side distributed energy resource facility with a capacity of less than 65 MW under CGS §16-50k, it was selected under the state's SCEF Program, it is consistent with the state's energy policy under §16a-35k and it would not have a substantial adverse environmental effect under CGS §16-50p.

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. Implement DEEP-recommended turtle protective measures identified within the Natural Diversity Database Determination dated September 6, 2024;
5. Final Post-Construction Operations and Maintenance Plan that includes an inspection/maintenance schedule of facility components and an annual vegetation maintenance plan to be implemented for the life of the facility;
6. Submit a copy of the final Emergency Response Plan, which shall include, but not be limited to, contact information for local police, fire and emergency medical technicians, to the Council and local emergency responders prior to commencement of operation and provide emergency response training that includes an itemized list of necessary fire suppression equipment and adequate water supplies for any fire issues at the facility site; and
7. Submit a post-construction operational noise study that documents compliance with state standards, and if necessary, the identification of any noise mitigation measures that are employed to adhere to the standards.

Site Location



Legend

- Property
- Municipal Boundary

Figure 1 - Location Map

Proposed Solar Energy Facility
391 Durham Road
Madison, Connecticut

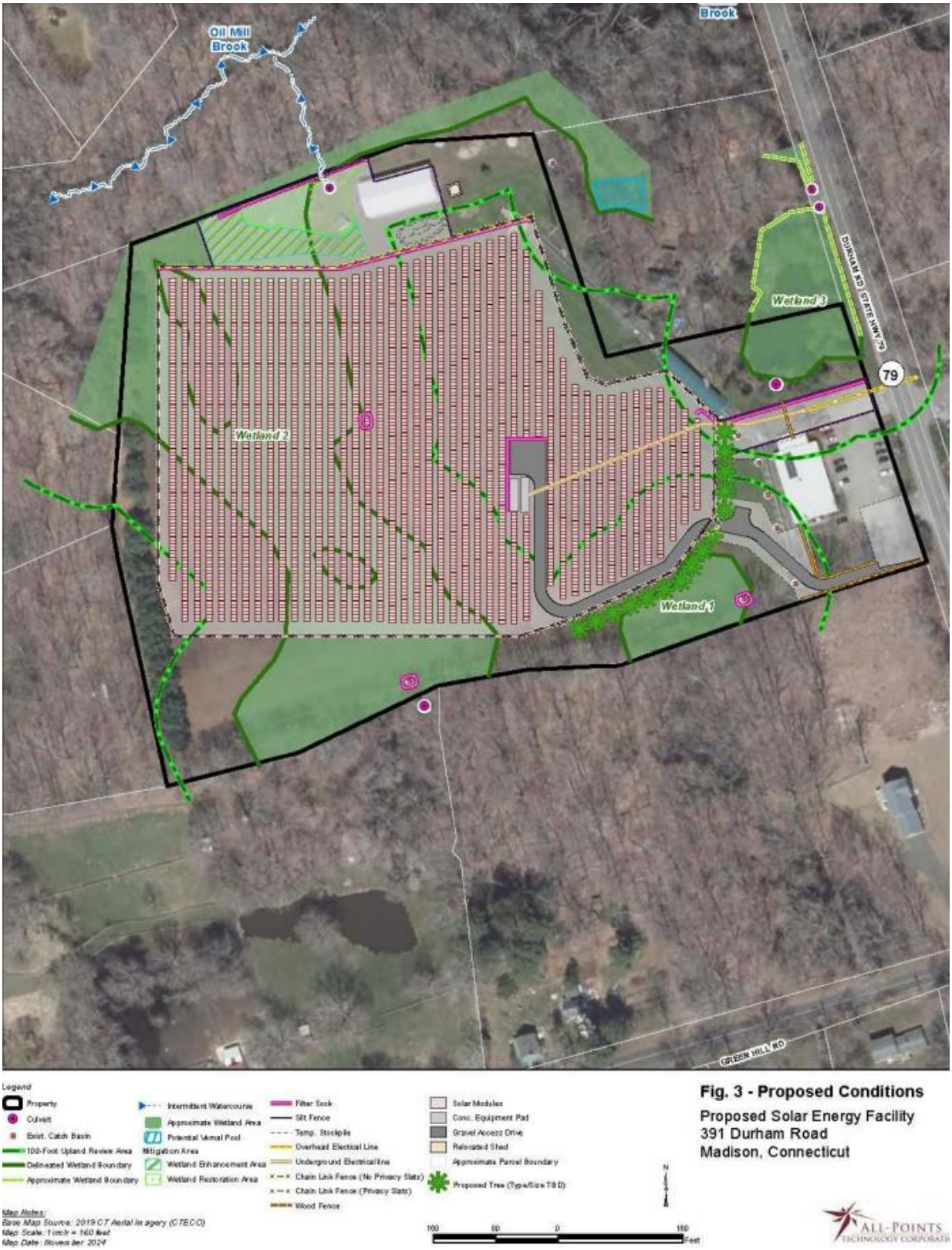
Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map: Clinton, CT (1984) & Guilford, CT (1984)
Map Scale: 1:24,000
Map Date: November 2024

1,000 500 0 1,000 Feet

ALL-POINTS TECHNOLOGY CORPORATION

Existing Conditions

Proposed Conditions



Construction Site Plan