

DRAFT

**Petition No. 1615
C-Tec Solar, LLC
3.98 MW AC Solar Photovoltaic Electric Generating Facility
180 Leibert Road, Hartford**

**Staff Report
July 12, 2024**

Notice

On February 20, 2024, the Connecticut Siting Council (Council) received a petition from C-Tec Solar, LLC (C-Tec) for a declaratory ruling pursuant to Connecticut General Statutes CGS §4-176 and §16-50k for the construction, operation and maintenance of a 3.98-megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility located on the former Hartford Landfill at 180 Leibert Road, Hartford, Connecticut and associated electrical interconnection (Petition or Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on February 12, 2024, C-Tec notified abutting property owners, City of Hartford (City) officials, Town of East Hartford officials, Town of South Windsor officials and Town of Windsor officials¹ (collectively municipalities), state officials and agencies 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 April 11, 2024, 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 18, 2024, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

The Council issued interrogatories to C-Tec on May 24, 2024. C-Tec submitted responses to the Council's interrogatories on June 14, 2024, including but not limited to, a revised site plan and a photographic documentation of site-specific features intended to serve as a "virtual" field review of the Project site.

Municipal Consultation

The City owns the host parcel and the Connecticut Department of Energy and Environmental Protection (DEEP) manages the former landfill. C-Tec is in the process of finalizing a lease agreement with the City for use of the landfill to host the proposed facility. C-Tec anticipates a lease term of 20 years with the option to extend for 3 additional 5 year terms.

The City's 2011 Plan of Conservation and Development encourages increasing the percentage of its energy needs supplied by renewable energy sources with a target of 100% by 2030.

On February 22, 2024, the Council sent correspondence to the municipalities stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by March 21, 2024. No comments were received.

¹ The Towns of East Hartford, South Windsor and Windsor are located within 2,500 feet of the proposed facility.

State Agency Comments

On February 22, 2024, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by March 21, 2024: 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); and the State Historic Preservation Office (SHPO).

In response to the Council's solicitation, DEEP submitted comments on March 18, 2024 regarding lack of impact from noise and visibility, stormwater management, landfill disruption authorization, and overall support for the proposed Project.²

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.³

Public Act 17-218

Public Act (PA) 17-218⁴ 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.” C-Tec has secured written confirmations from both DOAg and DEEP.

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the construction, maintenance and operation of solar photovoltaic electric generating facilities throughout the state. PA 17-218 requires developers of solar facilities with a generating capacity of more than 2 MW to obtain a written determination from DOAg or DEEP that the project would not materially affect the status of land as prime farmland or core forest prior to submission of a petition for a declaratory ruling to the Council. PA 17-218 does not confer the Council's exclusive jurisdiction over the construction, maintenance and operation of solar photovoltaic electric generating facilities throughout the state upon DOAg or DEEP. PA 17-218 also does not permit DOAg or DEEP to impose any enforceable conditions on the construction, maintenance and operation of solar photovoltaic electric generating facilities under the exclusive jurisdiction of the Council.

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

² https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1615/stateagencycomments/pe1615_deepcommentsrecd_031924_a.pdf

³ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

⁴ Codified at Conn. Gen. Stat. §16-50k(a) and §16a-3k (2023)

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, 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.

The Project was bid into the Non-Residential Renewable Energy Solutions (NRES) Program in late 2019 and was awarded to C-Tec in early 2020. An agreement with the City is being finalized. The City would purchase the energy, capacity, and renewable energy certificates. The City would also receive 10 percent of the bill credits.

The NRES program is a successor program to the Low Emission Renewable Energy Credit and Zero Emission Renewable Energy Credit (LREC/ZREC) and Virtual Net Metering (VNM) programs to further develop the state’s Class I renewable energy objectives and to encourage the participation by customers in underserved and environmental justice communities through 20-year contracts.

After the 20-year NRES contract expires, C-Tec would examine market conditions to determine if the facility will continue to operate using other revenue mechanisms or be decommissioned.

C-Tec is not currently contemplating participating in an ISO New England, Inc. (ISO-NE) Forward Capacity Auction but may do so in the future.

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 City, C-Tec proposes to construct the solar facility on an approximate 13.75-acre site within a 124.4-acre host parcel, located at 180 Leibert Road. The host parcel is owned by the City, contains a closed landfill and abuts Interstate 91 (I-91) to the west and south and the Connecticut River to the east. Open fields and undeveloped woodland abut the parcel to the north.

The host parcel is zoned open space (OS). The landfill closed in 2008. Capping of the landfill was completed in 2015 with a combination of pasture vegetation in the western portion and synthetic turf in the eastern portion. The landfill occupies most of the host parcel and has steep, lower slopes that decrease towards the top. An existing 1 MW solar array is located on the southern end of the capped landfill. The existing solar array was installed by the City in approximately 2012-2014. It would not interact or interfere with the operation of the proposed solar facility.

An existing 6,000-foot access road extends north from Leibert Road via the southeastern corner of the parcel providing access to the landfill, the existing solar array and other parts of the host parcel. Paved parking areas, operational outbuildings and equipment storage areas are also located along the southern boundary of the parcel.

Existing stormwater management features including drainage swales are located along the slopes of the landfill.

The Project site would be located in the central and eastern portions of the landfill. The site slopes radially with high points to the east and west with elevations ranging from approximately 46 to 135 feet above mean sea level. Slopes within the proposed solar facility site do not exceed 4 percent.

Land use surrounding the host parcel consists of commercial and industrial use. The Connecticut River and its associated dike system is located to the east. The nearest residence from the site is approximately 0.51 miles (2,640 feet) to the west at 36 Sunset Street. The nearest abutting property line from the site is approximately 270 feet to the east at 100 Leibert Road.

C-Tec selected the site due to limited environmental impact, topography, suitability, availability, and proximity to an electrical interconnection. The location of the proposed facility would not interfere with existing operations at the landfill.

The lease agreement with the City would include provisions related to decommissioning and site restoration at the end of the Project's useful life. At the end of the lease, C-Tec will decommission the Project and restore the site to its pre-existing condition.

Proposed Facility and Associated Equipment

The proposed 3.98 MW AC solar facility consists of 7,956 solar panels rated at 540 Watts installed on a concrete ballast racking system facing south at a 20-degree angle. Other equipment includes twenty four 125-kW inverters, two 1,000 kVA transformers and two pad mounted switchgear. Two 20-foot by 12-foot concrete pads would be installed on the eastern side and southeastern corner of the array, within the fenced area, to support electrical equipment. Each concrete pad would support one transformer and one inverter.

Use of the concrete ballast racking system would avoid disturbance to the landfill cap. The pre-manufactured ballasts would be approximately 2 feet 4 inches wide by 10 feet long by one-foot tall. The panels would be approximately 6 feet above grade at the highest point and 3 feet above grade at the lowest point. The aisles between the panel rows would be approximately 15 feet wide.

Panel row wiring would extend along the racking system to reduce potential damage from weather events, maintenance activities or animals. Conduit on a ground mounted cable tray would extend south from the racking to a transformer/inverter pad on the eastern side of the solar array and then further south to a second transformer/inverter pad located at the southeastern corner of the fenced array.

From the second transformer pad, the electrical interconnection route would extend south along the existing gravel access road via a proposed underground conduit to the interconnection point, approximately 1,300 feet from the nearest transformer/inverter pad. The electrical interconnection would then transition to an overhead line to existing Eversource distribution service on Leibert Road.

The proposed interconnection would consist of five new 30-40 foot high utility poles spaced 40 feet apart, with 3 poles owned by Eversource and 2 poles owned by C-Tec. Eversource requires one pole for each piece of equipment (manual disconnect switch, recloser, primary meter). The two customer poles would

support the group operated disconnect switches (GOAB), lightning arrestors, recloser, recloser controller and cable tray riser. The Project would also require 2,400 feet of underground conductor upgrade at the interconnection point.

C-Tec has an interconnection agreement with Eversource. An ISO-NE interconnection review is not required.

The landfill is partially enclosed by an existing chain link fence. The western and northern sides of the host parcel abutting I-91 are not enclosed by the fence. The main entrance is located in the southwest corner of the parcel and is gated, limiting access to authorized personnel only. A second gate is located along the northeast side of the parcel. No additional fencing is proposed.

C-Tec submitted a request for an Authorization for Disruption of a Solid Waste Disposal Area and a request for a Change to Post-Closure Use to DEEP in February 2024, which is under review.

The projected capacity factor for the proposed solar facility is approximately 15 percent. The power output would decline over time with an electrical loss assumption of approximately 9 percent. The site is not designed to accommodate a battery storage system. However, the Project may be able to support a battery storage system in the future.

Construction would occur over an approximately ten-month period with an anticipated start time in fall 2024. Typical construction hours and workdays of the week are Monday – Saturday, 7:00 AM to 7:00 PM.

The estimated cost of the Project is in excess of \$7.1 million.

Public Health and Safety

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

The nearest federally-obligated airport is the Hartford Brainard Airport located approximately 4.04 miles south of the site. The Federal Aviation Administration (FAA) issued a Determination of No Hazard to Air Navigation for the Project on November 27, 2023. No glare analysis is required for the Project.

The proposed facility would be remotely monitored through a 24/7 data acquisition system. If a problem with the facility is detected, system diagnostics would remotely shut down the inverters. The solar array is divided into separate electrical units by the inverters so if one section has a fault condition and shuts down, other sections can still operate.

A manual disconnect switch would be located on-site. C-Tec would provide facility operation and safety training for local emergency responders. In the event of an electrical fire or brush fire that threatens electrical equipment, water would be used around the fire area to reduce the risk of it spreading. The nearest municipal fire hydrant is located approximately 1,000 feet from the proposed facility. Fire extinguishers rated for electrical fires or chemical suppressant should be used.

The transformer would contain a nontoxic insulating oil. The proposed transformer would not be able to detect oil leaks; however system failures resulting from low transformer oil levels would cause C-Tec's data acquisition system to trigger alerts and inform C-Tec of an equipment malfunction.

Electric and Magnetic Fields produced from solar facility electrical components would have an extremely low frequency range and would dissipate quickly with distance and therefore similar to pre-existing EMF background levels at the property lines.

C-Tec would maintain a 10-foot buffer around the methane gas vent pipes and install a high visibility mesh fence around the vents.

The existing chain link perimeter fence complies with NEC fencing requirements⁵. City emergency response personnel would have access to the facility site via the existing landfill's main entrance gate.

The proposed facility would be in compliance with DEEP Noise Control Standards. 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 emissions as a result of operation.

The site is not located within a DEEP-designated Aquifer Protection Area or within a public water supply watershed.

The facility would not use or discharge water during operation.

No wetlands are proximate to the Project site. A wetland survey identified an existing forested floodplain wetland in the northern portion of the host parcel. The forested floodplain wetland which is associated with the Connecticut River is 532 feet north of the Project limit of disturbance at its closest point. No vernal pools were identified on the host parcel.

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.

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 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."

The capped landfill has an existing stormwater management system consisting of drainage swales located on the slopes of the landfill, that collect and discharge water from the top of the landfill cap. The existing swales discharge at the base of the landfill.

Construction of the Project would require less than one acre of ground disturbance and thus, a DEEP-issued Stormwater Permit is not required prior to commencement of construction. C-Tec is not proposing any additional stormwater management systems. In compliance with the DEEP Stormwater Permit Appendix I, *Stormwater Management at Solar Array Construction Projects*, C-Tec would maintain a minimum 50-foot wetland buffer from stormwater control features and a minimum 100-foot wetland buffer from the solar panels.

Water from rain events would drip along the gaps between each panel rather than fall off as concentrated sheet flow. Channelization is not expected.

Forests and Parks

No tree clearing would be required to develop the site. By letter dated November 30, 2023, DEEP determined that the proposed Project would not affect the status of the site as core forest.⁶

The nearest recreational area to the Project is Kenney Park and Golf Course located approximately 0.67 miles northwest of the site. The Riverside Park trail is located approximately 1.0 mile south of the site.

Fish, Aquaculture and Wildlife

The site is located adjacent to a DEEP Natural Diversity Database (NDDB) buffered area. On November 28, 2023, DEEP issued an NDDB determination letter which identified four state-listed bird species of special concern known to utilize grassland habitats: the grasshopper sparrow, the eastern meadowlark, the Savannah sparrow and the bobolink.⁷ DEEP recommended seasonal restrictions limiting construction to the non-breeding season for these grassland bird species (September 1st – April 30th) and maintaining a 50-foot buffer between the facility limits of disturbance and the adjacent grassland habitat. The construction staging area would be located within the grassland habitat and C-Tec would adhere to recommendations in the DEEP NDDB Determination Letter. In addition, once operational, DEEP recommended the avoidance of vegetative mowing from May 15 to September 15. C-Tec would adhere to DEEP's recommended protective measures.

During construction, the staging area would be located within the grassland habitat.

The northern long-eared bat (NLEB), a federally-listed and state-listed Endangered Species occurs in Connecticut. The Project is not located within 0.25 mile of a known NLEB hibernaculum. No known maternity roost trees are located within the vicinity of the Project. By letter dated October 25, 2023, the U.S. Fish and Wildlife Service determined that the Project would not likely have an adverse effect on the NLEB, and no additional action is necessary.

There would be no disturbed areas within the solar array. Disturbed areas outside the solar array would be seeded with a perennial rye grass mix.

⁶ [exhibit-a_environmentalassessment.pdf \(ct.gov\)](#)

⁷ [exhibit-a_environmentalassessment.pdf \(ct.gov\)](#)

Agriculture

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 northern portion of the host parcel contains prime farmland soil. By letter dated January 10, 2024, DOAg determined that the proposed Project will not materially affect the status of the host parcel as prime farmland.⁸

Scenic, Historic and Recreational Values

SHPO submitted correspondence to C-Tec on February 9, 2021, stating that no historic properties would be affected by this Project.

No state designated scenic roads are proximate to the site.

There are no “blue-blazed” trails maintained by the Connecticut Forest and Parks Association located proximate to the site.

Visibility

The facility is remote from public areas and residences. The facility would be visible year-round from approximately 219 acres within a one-mile radius and limited to the host parcel and areas west, northwest and east of the site.

The facility would be seasonally visible from approximately 79 acres within a one-mile radius including portions of the Windsor Meadows State Park to the north and the Riverfront Trail System and future Riverfront Recapture Park to the south and east.

The landfill is a prominent feature along I-91 in northeastern Hartford and the Connecticut River adjacent to the landfill. Visibility of the facility would be minimal due to the low incremental height of the proposed equipment and the lack of vegetative clearing. No landscape screenings are proposed.

Operations 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 in accordance with manufacturer’s specifications. The evaluation would include the electrical system/components, physical infrastructure, and site vegetation. Replacement modules would not be stored on-site.

When necessary, the solar modules would be cleaned using water.

Site vegetation would be maintained by mowing/trimming. Vegetation control would be conducted in accordance with DEEP-recommended protective measures for grassland birds.

⁸ [exhibit-a_environmentalassessment.pdf \(ct.gov\)](#)

No permanent exterior lighting is proposed.

Decommissioning

The Project has an operational life of up to 25 years. At the end of the Project's useful life, it would be decommissioned by removing all equipment, including the ballast mounts, panels, inverters, and electrical interconnection system.

It is anticipated that the electrical components and wiring 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 and interconnection equipment pads would be removed. Disturbed areas would be backfilled with soil and seeded.

The selected solar panels for the Project 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.

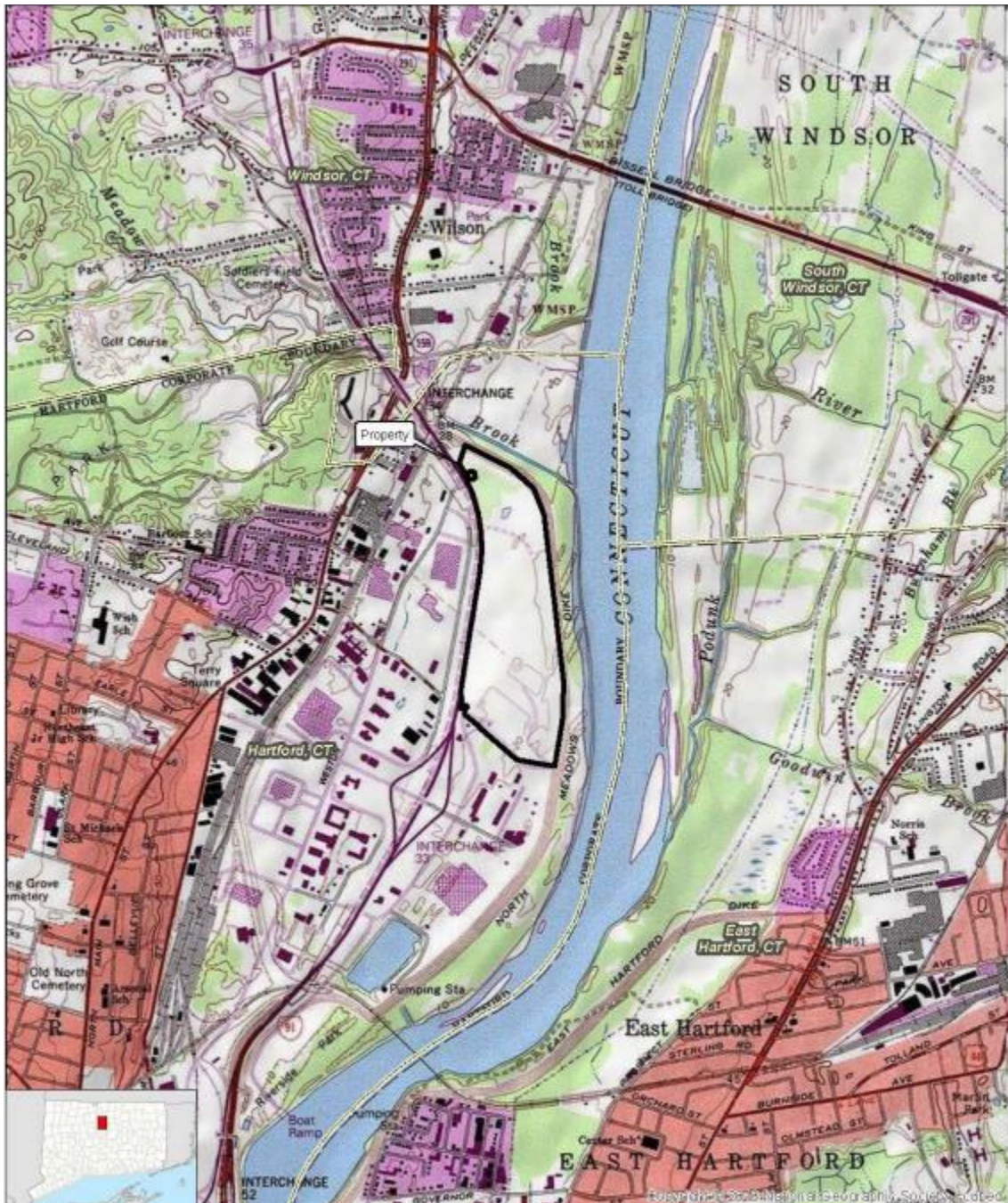
Conclusion

The Project is a grid-side distributed energy resource with a capacity of not more than sixty-five megawatts, meets DEEP air and water quality standards, 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 NRES Program.

If approved, staff recommends inclusion of the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit the final interconnection route prior to commencement of construction;
3. Submit the final structural design for the post and ballast racking system stamped by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
4. Implement the DEEP recommended seasonal restrictions and protective measures for the grassland bird species;
5. Submit a construction Spill Prevention Control and Countermeasure Plan with contractor information and appropriate reporting forms;
6. Submit an Emergency Response Plan for the proposed facility with contact information prior to facility operation; and
7. Provide a copy of the Emergency Response Plan to local emergency responders prior to facility operation and provide emergency response training.

Site Location



Existing Conditions



Figure 2
Existing Conditions Map
 Proposed Solar Facility
 Hartford Landfill
 180 Liebert Road
 Hartford, Connecticut



Site Plan

