



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

April 3, 2018

Lee D. Hoffman, Esq.

Pullman & Comley, LLC

90 State House Square

Hartford, CT 06103-3702

RE: **PETITION NO. 1339** – Wallingford Renewable Energy LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 19.99 MW AC ground-mounted solar photovoltaic electric generating facility located on approximately 158 acres of 3 contiguous parcels consisting of the former Wallingford Landfill and 2 parcels owned by the Materials Innovation and Recycling Authority west of Pent Road and associated electrical interconnection to Wallingford Electric Division’s Wallingford Substation in Wallingford, Connecticut.

Dear Attorney Hoffman:

At a public meeting held on March 29, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection (DEEP) and would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. The Petitioner shall prepare a Development and Management Plan (D&M) for this site in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, and the Towns of Wallingford, Hamden and North Haven for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. A final site plan including, but not limited to, final solar panel design, electrical interconnection, fencing and equipment pads;
 - b. Plans for ballast mount delivery to site or plans to pour concrete on-site;
 - c. Final Vernal Pool Survey results and associated protective measures;
 - d. Plans to comply with DEEP Natural Diversity Database Comments dated March 9, 2018 including, but not limited to, final turtle protection plan, final bat protection plan and plans for additional NDDDB invertebrate surveys or relocation of solar panels outside of the sand barren habitat;
 - e. Final seed mixture and any associated pollinator species as applicable;
 - f. Final erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control*;
 - g. Copy of DEEP General Permit; and
 - h. Consideration of relocation of solar panels from the southern portion of the site to the northwest portion of the landfill to minimize fragmented solar panel installation and to further maximize wetland buffers;
2. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council’s decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council’s decision shall not be counted in calculating this deadline. Authority to monitor and

modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

3. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Wallingford;
4. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
5. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
6. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
7. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated January 10, 2018 and additional information dated March 2, 2018 and March 21, 2018.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

A handwritten signature in blue ink that reads "Robert Stein" followed by "NAB" in smaller letters.

Robert Stein
Chairman

RS/MP/lm

Enclosure: Staff Report dated March 29, 2018

c: The Honorable William W. Dickinson, Jr., Mayor, Town of Wallingford
Kacie Hand, Town Planner, Town of Wallingford
Janis M. Small, Corporation Counsel, Department of Law, Town of Wallingford
The Honorable Curt B. Leng, Mayor, Town of Hamden
Dan Kops, Planning & Zoning, Town of Hamden
The Honorable Michael J. Freda, First Selectman, Town of North Haven
Laura Magaraci, Zoning Enforcement Officer, Town of North Haven
Joe Jordan, Wallingford Renewable Energy LLC

Petition No. 1339
Wallingford Renewable Energy, LLC
Oliver Creek Road and Pent Road, Wallingford
Staff Report
March 29, 2018

Introduction

On January 10, 2018, Wallingford Renewable Energy LLC (WRE 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 a 19.99 MW alternating current (AC) solar photovoltaic generating facility located on three parcels totaling 158 acres and consisting of the Wallingford Landfill property located west of Pent Road and north of Ball Street and 2 parcels owned by the Materials Innovation and Recycling Authority (MIRA) located south of Oliver Creek Road and associated electrical interconnection to Wallingford Electric Division's Wallingford Substation in Wallingford, Connecticut. Council members Robert Hannon and Robert Silvestri, Executive Director Melanie Bachman, and Michael Perrone of the Council staff visited the site on January 30, 2018 to review this proposal. Attorney Lee D. Hoffman, Pullman & Comley LLC (representing WRE); Brian Butler, President, Oxbow Associates, Inc.; Juan Suarez, Director of EPC, Lendlease¹; Joe Jordan, Director of Development, Lendlease; Lynn Gresock, Vice-president and Environmental Consultant, TetraTech; Ed Bludnick, Developer, Ameresco; Ed Rizzo, Chief Engineer, Wallingford Electric Division; Jack Perry, member, HQ Dumpsters; Dan Mcinerney, resident, NECA/IBEW; Frederick Riese, Senior Environmental Analyst, Connecticut Department of Energy and Environmental Protection (DEEP); Scott Wing, Environmental Analyst, DEEP; David McKegan, Environmental Analyst, DEEP; and Ray Frigon, Supervising Environmental Analyst, DEEP also attended the field review.

On or about January 8, 2018, the Petitioner notified Town of Wallingford officials, state officials and agencies, the property owners and abutting property owners of the proposed project. The Petitioner also notified the Towns of Hamden and North Haven because they are both located within 2,500 feet of the proposed project. To date, the Council has not received any comments from abutters or the Towns of Hamden or North Haven. By letter dated November 1, 2018, MIRA, one of the subject property owners, expressed support for the proposed project. Comments from the Town of Wallingford (which is the other subject property owner) and other public official comments are noted in the next section titled, "Municipal Consultation and Public Official Comments."

The Council issued interrogatories to WRE on February 15, 2018. On March 2, 2018, the Petitioner submitted responses to Council interrogatories.

On February 15, 2018, pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act (UAPA), which requires an administrative agency to take action on a petition within 60 days of receipt, the Council voted to set the date by which to render a decision on the above-referenced petition by July 9, 2018. July 9, 2018, is the statutorily-mandated 180-day decision deadline for this petition under CGS §4-176(i).

¹ WRE is wholly owned by Lendlease Americas Holdings, Inc. (Lendlease Americas). Lendlease Americas is a wholly owned subsidiary of Lendlease Corporation Limited (Lendlease).

Municipal Consultation and Public Official Comments

WRE and its representatives have met with the Town of Wallingford since 2016 with respect to the proposed project. In total, there have been four publicly noticed meetings regarding the proposed project in Wallingford, including three Wallingford Town Council meetings and a Project Open House. The Petitioner published notice of the November 16, 2017 Open House at the Wallingford Town Hall in the *Record-Journal* on November 12, 13, and 14, 2017. And, although not required by law, such notice included the Petitioner's notice of intent to file the Petition with the Council.

By letter dated November 15, 2017, Mayor William W. Dickinson, Jr. of the Town of Wallingford expressed support for the proposed project.

On March 9, 2018, State Representative Mary M. Mushinsky of the 85th District submitted written comments on the proposed project indicating that she generally supports the project, which re-uses an old landfill and adds clean energy generation to the grid; however, she is concerned about the clearing of roughly 20 acres of river corridor forest. Rep. Mushinsky notes that this would be the removal of high quality deciduous forest and result in the destruction of the very limited palustrine forested-floodplain forest, a critical habitat that is rare in Connecticut. Rep. Mushinsky inquired if the project could be reduced by 20 acres or if solar panels could be added on nearby degraded industrial land instead. In addition, Rep. Mushinsky is concerned about the proposed project potentially conflicting with Phase IV of the Quinnipiac River Linear Trail (QRLT). The trail currently extends approximately 2.25 miles along the Quinnipiac River. Maps of the QRLT, including plans to develop a 4th phase, were included in the written comments.

State Agency Comments

On January 16, 2018, the Council sent correspondence requesting comments on the proposed project from the following state agencies: Department of Energy and Environmental Protection (DEEP); Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Consumer Protection (DCP); Department of Labor (DOL); Department of Construction Services (DCS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO). The deadline for submission of state agency comments was February 12, 2018. By letter dated February 9, 2018, DEEP requested a 30-day extension of time to submit its comments. By letter dated February 9, 2018, the Council granted DEEP an extension of time until March 9, 2018 to submit its comments. By letter dated March 9, 2018, DEEP filed its written comments, which are attached hereto. No comments from any other state agencies have been received to date.

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." Because the proposed project was selected by DEEP in a solicitation prior to July 1, 2017, and neither prime farmland nor core forest would be impacted, the proposed project 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 2013 Connecticut Comprehensive Energy Strategy (2013 CES) emphasizes low- or no-emission sources of electric generation and development of more distributed generation. The 2018 CES identifies Strategy No. 3 as, "Grow and sustain renewable and zero-carbon generation in the state and region." The proposed facility is distributed generation. Specifically, the proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard as a zero emission Class I renewable energy source.

On March 9, 2016, pursuant to Section 1(b) and 1(c) of PA 15-107, DEEP issued notice for a Request for Proposals (RFP) for Class I renewable energy sources and Class III sources with a nameplate capacity rating of more than 2 MW and less than 20 MW (Small Scale RFP)². Project selection occurred on November 28, 2016. On June 27, 2017, DEEP issued its final determination in the RFP and selected 25 out of 107 proposed projects to enter into long-term power purchase agreements with the electric distribution companies (EDCs) for a combination of energy and environmental attributes. Of the 25 projects selected, one is the proposed project – a 19.99 MW Solar Project in Wallingford by WRE.

WRE would be structured as an independent electrical generating entity participating in the ISO-New England, Inc. (ISO-NE) market, selling power to two regional utilities via power purchase agreements (PPAs). Specifically, per the PPAs, approximately 80 percent of the electricity and renewable energy certificates (RECs) would be sold to Eversource Energy (Eversource), and the remaining 20 percent would be sold to The United Illuminating Company (UI). The PPAs were approved by the Connecticut PURA in September 2017. The PPAs have a 20-year term. There are no extensions or options to renew the terms of the PPAs. After the 20-year term, the Petitioner would seek to re-contract the power and RECs or sell the power and RECs in the wholesale market. The Petitioner currently has no plans to participate in the ISO-NE Forward Capacity Auction (although the potential exists).

Proposed Site

The proposed solar project would be located within approximately 49 acres of a total of 158 acres, consisting of three parcels. Two parcels (MIRA Property), totaling 52 acres, are owned by MIRA. One parcel (Town Property), totaling 106 acres, is owned by the Town of Wallingford. All three parcels are located in the Town of Wallingford's Industrial District (I-40).

The Town Property, located west of Pent Road and north of Ball Street, consists of the Wallingford Landfill, a cleared grassy area, and forested lowland areas to the west, adjacent to the Quinnipiac River. Two electrical right-of-ways (ROW) traverse the Town Property. Specifically, a 250-foot wide Eversource ROW extends east-west along the southern portion of the Wallingford Landfill. A 100-foot wide Borough Electric ROW (located north of the Eversource ROW) extends in a northeast-southwest direction along the western side of the Wallingford Landfill. Since 2000, there have been no daily activities at the Wallingford Landfill. In 2002, the landfill was capped and closed and received certification of closure from DEEP (f/k/a Connecticut Department of Environmental Protection) in 2005. However, the Town of Wallingford continues to operate a resident drop-off

² On page 1 of its comments dated March 9, 2018, DEEP incorrectly identified the proposed project as being selected in the New England Clean Energy RFP.

area and bulky waste transfer station at the eastern side of the landfill (accessed by Pent Road), as well as a composting and mulch center on the north side of the landfill, accessible from John Street.

The MIRA Property, located immediately south of the Town Property and on the other side of Oliver Creek Road, is primarily used to control and monitor the leachate plume. An Algonquin natural gas pipeline ROW and an oil pipeline ROW currently extend through the western portion of the MIRA Property in a roughly north-south direction. The MIRA Property has a history of development and was the location of a trailer park and several single-family homes in the 1950s. In 2001, the Connecticut Resources Recovery Authority (the predecessor name for MIRA) purchased both parcels to gain the right of possession of the southern edge of the leachate plume from the Wallingford Landfill. All structures were demolished in 2001 and 2002. Several paved and concrete driveways and parking areas were not removed and remain today. Subsurface evidence of former development may remain. Much of the MIRA Property has experienced significant tree growth over the years since its residential uses were eliminated. Leftover debris from former occupation, including tires and car parts, paint cans, and old furniture, are scattered in several locations on the MIRA Property.

To the north, the proposed site is generally bounded by industrial development, including the Town of Wallingford Water Pollution Control Facility, the Wallingford Energy electric generating facility, and a retired steel mill. To the east of the proposed site, there is industrial and commercial development, including three chemical and manufacturing facilities, the Wallingford Resource Recovery Facility and warehouse facilities. South of the proposed site is a chemical manufacturing facility and its industrial property, which extends to Toelles Road. To the west is the Quinnipiac River, which flows in a north-south direction. The Quinnipiac River State Park extends along the riparian corridor on the west side of the river and extends more expansively south of Toelles Road.

Lendlease began considering an appropriate site for the project in early 2016, anticipating the issuance of DEEP's Small Scale RFP in 2016. Lendlease identified specific site and community characteristics for a preferred site such as: municipal support and readiness for such a project; suitable land area available with appropriate characteristics; proximity to existing electrical infrastructure for interconnection; zoning consistent with the development of a solar facility; no impact to Environmental Justice communities; ability to redevelop and reuse an existing landfill and/or brownfield site; appropriate buffer from residential land uses; and the ability to avoid or minimize environmental impacts. The proposed site was selected because it was deemed to meet such characteristics.

Proposed Project

The solar field would include a total of approximately 56,000 solar photovoltaic panels at 390 Watts DC each on fixed rack systems oriented to the south, for a total of about 21.8 MW DC. These panels would be tilted on an angle of 10 degrees with the horizontal. The solar panels would reach a maximum height approximately seven feet above grade, depending on local grade and topography. Ballast-mounted racks would be used as necessary to protect the landfill cap, and post-mounted racks would be utilized in other areas where subsurface constraints do not exist. The ground clearance under the panels would be at least 2.5 feet for the ballast-mounted racks, and ground clearance would be at least two feet for the post-mounted racks.

On the landfill area, the inverters and their associated transformers would be located on up to 36-foot by 10-foot concrete pads. In the areas outside of the landfill cap, the inverters would be mounted to (driven) posts, resulting in smaller transformer pads with dimensions of approximately 10-foot by 6-foot. The tallest electrical equipment at the site would be approximately six feet above

the tops of the concrete pads, and the tops of the concrete pads would be approximately four to six inches above grade.

The efficiency of the solar panels would be approximately 19.4 percent, subject to final panel design procured. The power output of the solar panels would decline by approximately 0.5 percent per year as the panels age.

The power produced would be fed into the local distribution system, less any minimal auxiliary loads to operate inverters and other equipment. There would be three electrical interconnection points. The first point of interconnection would be a dedicated feeder that would be hung on existing wood poles beginning at Ball Street and continuing approximately 0.33 miles to the off-site existing Wallingford Substation. The second point of interconnection would be a tap on an existing distribution line that runs on the same poles on which the dedicated feeder would be located. The third point of interconnection would be at the northeastern corner of the proposed project. All of the interconnections combined would require up to 12 new wooded poles roughly 60 feet high above grade. All three electrical interconnections (with their associated array configurations) would be independent and could be shut down with the remainder of the facility still remaining active.

A system impact study would be required for the proposed project. ISO-NE would need to conduct a regional impact study to determine that the proposed changes would not have a significant adverse effect on the transmission system. In addition, minor upgrades would be necessary at Wallingford Substation to accommodate the interconnection.

All solar arrays and related electrical equipment would be surrounded by a seven-foot tall chain link fence. An anti-climb design is not proposed. A six-inch gap under the fence for wildlife to pass through would be included for all fencing located on the MIRA Property adjacent to wetland areas³. On the landfill and other areas with subsurface constraints, the fence would utilize a ballast design that would not require posts driven into the ground.

Entrances for the proposed project would be located at the end of Pent Road and the corner of Pent Road and Ball Street. The surrounding roadway network already serves numerous industries and would be expected to readily support construction-related traffic.

Existing access roads on the proposed site would be used (and improved with gravel as necessary) and additional gravel access would be constructed. Where new access roads would be constructed, they would be 16 feet wide (unless wetland constraints dictate more narrow access). A total of 0.3 miles of existing access roads would be used, and an additional 0.3 miles of new access would be constructed. The new access roads would be constructed with an improved subgrade, with approximately six inches of processed gravel placed above existing grades. Minor grading may be required along the proposed access roads depending on topography, stormwater flow management, and erosion and sedimentation control.

Access and operations for the proposed solar facility have been planned to avoid interference with the daily operations of the Town of Wallingford resident waste drop-off area, the bulky waste transfer station in the eastern side of the landfill, or the composting and mulch center on the north side of the landfill.

³ On page 6 of its comments dated March 9, 2018, DEEP incorrectly notes that a chain link fence along the southern boundary of the MIRA property was under construction. WRE notes that this is a pre-existing feature that was not constructed by WRE and is actually located on property owned by Allnex.

Temporary laydown areas would be located within the proposed project site boundaries. No additional tree clearing would be necessary for the laydown areas.

Final construction notice to proceed would be issued in late 2018, with the delivery of equipment likely commencing in early 2019. Land preparation and site work would be expected to continue through the end of summer 2019, with the final installation of array equipment in fall 2019. Final site stabilization, testing and commissioning would be expected in the fall 2019. Construction would occur Monday through Saturday from 7:00 a.m. to 9:00 p.m. Sunday hours might be necessary, but are unlikely.

The proposed project would comply with the National Electrical Code, the National Electrical Safety Code and the National Fire Protection Association code. The proposed solar facility would have an internal protection system to shut down a portion of or the entire solar facility, as appropriate, should a fault occur. The solar facility design would also include the ability to automatically isolate the facility during abnormal grid disturbances or during other power outage events. The Petitioner would coordinate with the local fire department so it has knowledge of the facility and also to provide training.

The nearest airport to the proposed facility is Meriden Markham Municipal Airport, which is approximately 4.2 miles north of the proposed project. WRE filed Notices of Proposed Construction or Alteration with the Federal Aviation Administration on September 25, 2017 for three locations within the proposed project footprint. Because the topography in the northern area of the site is higher, two of the chosen locations were the northeast and northwest corners of the proposed facility. The third location was the point of highest elevation of the proposed facility. On October 3, 2017, the FAA issued its Determinations of No Hazard to Air Navigation. No marking or lighting would be required for aviation safety. Glare would not have an impact on air navigation.

Environment, Cultural and Scenic Values

The total tree clearing area would be approximately 20 acres to accommodate the project layout and minimize shading. However, about 65 percent of the project area would not require tree clearing. The Petitioner has performed a carbon debt analysis. While the loss of trees necessarily reduces carbon capturing ability, the carbon dioxide emissions reductions due to the solar power displacing more traditional generation (which includes fossil-fueled generation) results in a “carbon debt payback” of about 133 days of full energy production⁴. Thus, the proposed project would result in a net reduction in carbon dioxide emissions for the environment.

Solar rack posts would be driven into the ground with a vibratory or hammer type machine. Post refusals (e.g. due to ledge) would be addressed on an individual case basis. Possible remedial actions could include driving the post in another location; testing for capacity, cutting and using the post in the same place; excavating around the post and pouring a concrete collar; and extracting the post, drilling and re-driving the post. No impacts to groundwater quality would be expected to result from the solar rack posts being driven into the ground. In the case of ballast-mounted solar racks, WRE has not yet determined whether the concrete ballasts would be poured on-site or delivered to the site as pre-cast. If approved, Council staff suggests that the plans to pour or deliver the concrete ballasts on-site be included in the Development and Management Plan (D&M Plan).

⁴ While the payback period assumes a simplified, level energy production throughout the year, the net result of more grid carbon dioxide emissions avoided versus the loss of carbon dioxide sequestration per year still stands.

Less than 200 cubic yards of cut and fill would be expected for access road and/or general site grading.

The Petitioner would register for a General Permit, and a final Stormwater Pollution Control Plan (SWPCP) would be prepared. The project would be phased to ensure each disturbance would be kept to a maximum of five acres of soil disturbance or less at any given time during construction, except for the largest installation area requiring 5.2 acres of tree clearing to be performed at one time. The preliminary SWPCP was prepared in accordance with the DEEP's "Stormwater Management at Solar Farm Construction Projects" dated September 8, 2018, the *2004 Connecticut Stormwater Quality Manual* and the *2002 Connecticut Guidelines for Erosion and Sedimentation Control*. If approved, Council staff suggests including a condition that a copy of the DEEP General Permit be included in the D&M Plan.

A Decommissioning Plan was included in the Petition and has provisions for project removal after a service life of approximately 35 to 40 years.

The project would have no adverse environmental effect to air or water quality. The solar project would not produce air emissions of regulated air pollutants or greenhouse gasses during operation. The groundwater at the site is classified by DEEP as not suitable for drinking water. In addition, the project is not located within a DEEP-designated aquifer protection area. The solar panels and equipment would remain outside of the 100-year and 500-year flood zones.

The major watercourse in the vicinity of the proposed project is the Quinnipiac River, which is located between the project site's western border and Route 15. However, the proposed project would be located at least 100 feet from the river.

Wetlands A1, A2 and C are located in the western portion of the Town Property. Wetlands B1, B2, B3, B4, B5, D, E, and F are all located on the MIRA Property. None of the proposed solar arrays would be located within wetland areas.

Direct wetland impacts would be limited to 800 square feet or about 0.018 acres of Wetland B5, which would be associated with the use of an abandoned woods road which may be improved with gravel for use for the proposed project. This wetland is State-regulated and does not qualify as a federal jurisdictional wetland.

Indirect wetland impacts would be mitigated by erosion and sedimentation controls, the proposed minimum wetland buffer of 25 feet (except for the wetland crossing noted above), rainwater infiltration ability of the developed areas, and the SWPCP.

Field investigation of vernal pools was conducted in late April, mid to late May, early June, October, and November 2017. Eight potential vernal pools (PVPs) on the MIRA Property were identified. See Figure titled, "Wetlands and Potential Vernal Pools." Egg masses were not observed in the PVP habitat, but wood frog adults and juveniles were observed in certain locations later in the season. No spotted salamander activity or indicators were observed, but the use of portions of project site by the species is possible. Solar arrays would completely avoid the 100-foot vernal pool envelopes (VPEs) of all PVPs. However, for PVP#1, the installation of the fence and tree clearing would result in a change to approximately four percent of its VPE. Pre-construction and post-construction (existing plus proposed) development with the VPEs and also the 100-foot to 750-foot Critical Terrestrial Habitats (CTHs) are noted in the tables below.

PVP#	PVP Area (acres)	VPE Area (acres)	Existing VPE Disturbed?	Project Disturbance?	Percent of VPE Affected by Project Activities ¹⁷
1	0.001	0.90	No	Yes – fence and minor clearing	4
2	0.026	1.03	Yes – Utility ROWs	No	-
3	0.019	0.97	Yes – Utility ROWs	No	-
4	0.072	1.32	Yes – Utility ROW	No	-
5	0.063	1.37	Yes – past disturbance, current trash	No	-
6	0.141	1.49	No	No	-
7	0.035	1.09	Yes – existing access road	Yes – use of existing access road	6
7A	0.072	1.27	Yes – existing access road	Yes – use of existing access road	3
8	0.052	1.21	Yes – existing access roads	Yes – use of existing access road; enhanced turnaround; fence and minor clearing	12

PVP#	PVP Area (acres)	CTH Area (acres)	CTH Area Disturbance (acres)	Percent of CTH Affected by Project Activities ¹⁸
1	0.001	41.0	5.08	12
2	0.026	41.9	8.98	21
3	0.019	41.5	8.14	20
4	0.072	43.8	8.29	19
5	0.063	44.0	5.31	12
6	0.141	45.0	12.69	28
7	0.035	42.3	12.38	29
7A	0.072	43.5	16.50	38
8	0.052	43.0	10.21	24

For formal confirmation of the status of the PVPs, WRE will conduct additional, systemic field evaluations of PVPs during the spring 2018 season. This may eliminate certain areas as PVPs, but could identify other locations.

Notwithstanding, based on the proposed encroachment upon the PVP CTHs, impacts to the overall wood frog population (and perhaps to any spotted salamanders that may be present) would be expected. However, sufficient upland wooded habitat, as well as suitable hibernation habitat, embedded within the delineated wetlands, would remain intact and well-connected to provide for all

of the life cycle requirements of a modest population of wood frogs. In the post-development phase, the solar array areas, which would be maintained to a dense grass and forb cover, would allow for the movement and migration of wood frogs. However, any spotted salamanders that occur at the site would only likely cross at the narrow clearings to access wooded areas.

According to the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Resource List, the northern long-eared bat (NLEB), a federally-listed Threatened Species (and also SES), may occur in the vicinity of the proposed site. However, the proposed project would not be located within 0.25 mile of a known NLEB hibernaculum or within 150 feet of a known occupied maternity roost tree. Notwithstanding, as a precaution, WRE's tree clearing would be avoided during the May 1 through August 15 time period to avoid impacts to potential summer-roosting bats, and thus, such measure would be protective of the NLEB.

By letter dated April 7, 2017, DEEP indicated that its review of the Natural Diversity Database (NDDDB) identified Connecticut Critical Habitat (CCH) associated with the Quinnipiac River. Such CCH is floodplain forest. DEEP also identified the false mermaid-weed, a State-designated Endangered Species (SES) associated with the Quinnipiac River floodplain and notes that it may occur at the project site.

By another letter also dated April 7, 2017, DEEP indicated that its NDDDB review identified a total of 17 species that have been documented in the vicinity of the proposed project and may occur on-site if appropriate habitat exists. Such species are noted below:

Name	Type	Status
Ground beetle (<i>Amara chalcea</i>)	Invertebrate	State Species of Special Concern
Big sand tiger beetle	Invertebrate	State Species of Special Concern
Dark-bellied tiger beetle	Invertebrate	State Threatened Species
False heather underwing	Invertebrate	State Threatened Species
Violet dark moth	Invertebrate	State Species of Special Concern
Ground beetle (<i>Helluomorphoides praestus bicolor</i>)	Invertebrate	State Species of Special Concern
Yellow-horned beaded lacewing	Invertebrate	State Species of Special Concern
Scribbled sallow moth	Invertebrate	State Species of Special Concern
Grassland thaumatopsis	Invertebrate	State Threatened Species
Northern dusk-singing cicada	Invertebrate	State Endangered Species
Spinoze flower moth	Invertebrate	State Species of Special Concern
Black-eyed zale	Invertebrate	State Endangered Species
Oblique zale	Invertebrate	State Species of Special Concern
Beach needle grass	Plant	State Endangered Species
Low frostweed	Plant	State Species of Special Concern
False mermaid-weed	Plant	State Endangered Species
Sickle-leaved golden aster	Plant	State Endangered Species

While no turtle species were identified as being potentially present per the initial DEEP NDDB consultation, WRE included a Turtle Protection Plan (TPP). Given the project's location near the Quinnipiac River and its floodplains, as well as field observations or signs of the eastern box turtle and the wood turtle (both State-designated Species of Special Concern), the Petitioner believes that it would be prudent to prevent the potential for impact to such turtles as a precaution.

WRE, through its consultant Oxbow Associates, Inc., performed a Habitat Assessment of State-listed species and Critical Habitat within the Study Area based on field assessments performed between May 2017 and November 2017. The NDDB records has about 28 acres of the western portion of the study area mapped as floodplain forest, designated as CCH. The Habitat Assessment confirmed that a much smaller area (about 6.6 acres) than mapped by NDDB serves as forested floodplain habitat. A botanist also documented a previously unrecorded population of false mermaid-weed adjacent to the Quinnipiac River within the study area and southward to Toelles Road. Much of the highest quality habit supporting the false mermaid-weed lies beyond the limits of the proposed project work area. Without perturbation of the floodplain community, this population is expected to be relatively secure.

A small (0.83 acre) low quality area of Stripped Barren habitat was documented in the northeastern edge of the MIRA parcel. See Figure titled "Habitat Areas." None of the State-listed insect species were observed during several seasonally-appropriate site survey days. WRE also contends that these insect species would be unlikely to occur outside of the identified stripped barren habitat due to their preference for sandy soils and related habitat characteristics. Low frostweed was potentially observed within the stripped barren habitat, although not definitively identified as low frostweed. If that definitive identification is made, this particular plant species would be transplanted to a suitable habitat. This sand barren habitat could potentially support the tiger beetle, but the presence of such species remains unconfirmed at this time.

After reviewing the Habitat Assessment, on March 9, 2018, DEEP submitted additional NDDB-related comments. DEEP described additional survey and reporting steps that would be required before a final determination of no adverse impact to State-listed species could be issued by DEEP. Such additional surveys and other measures are identified below:

- a) Perform additional surveys for the low frostweed in the sand barren habitat during the appropriate time of year, i.e. when it blooms in mid to late June;
- b) If low frostweed is encountered, a conservation plan should be developed by a botanist familiar with the ecology of such plant and submitted to DEEP for review prior to commencement of work;
- c) The sand barren habitat should be studied further and surveyed by an entomologist for the 13 NDDB sand dwelling invertebrate insect species, or alternatively, if solar panels were relocated outside of this roughly 0.8 acre habitat, DEEP may be able to eliminate the need for these extra studies;
- d) Implement the specified conservation measures for the false mermaid-weed;
- e) Implement the specified bat protection measures including, but not limited to, a prohibition on tree cutting between May 1 and August 15; and
- f) Implement the specified turtle protection plan.

If approved, Council staff recommends including a condition that WRE provide its plans to comply with the DEEP NDDB Comments dated March 9, 2018 in the D&M Plan.

In areas where solar arrays would be installed on the capped landfill, the ground surface impact would be minimized to the greatest extent possible, and no additional planting would be necessary. However, in areas where disturbance would occur, these areas would be re-loamed and re-seeded

using a seed mixture of meadow grasses and White Dutch Clover. White Dutch Clover is highly naturalized and provides nectar for cultivated and native bees and butterflies. Within the MIRA property, a fast-growing annual, such as rye, combined with perennial hybrid grasses, such as *Fescue*, would be anticipated. In newly seeded areas, a wildflower meadow seed mix would be used. This could be supplemented with common milkweed, a desirable food plant that propagates once single plants are established. Hydro-seeding may be used to address larger areas. In smaller areas or for more specialized seed mixes, hand-casting of seed may also be used. If approved, Council staff recommends that the final grass/pollinator planting plans be included in the D&M Plan.

By letter dated November 1, 2017, the State Historic Preservation Office (SHPO) has determined that no historic properties would be affected by the proposed solar facility.

The proposed project is expected to meet the DEEP noise standards at the property boundaries.

To the extent located within the project footprint, leftover debris on the MIRA property would be removed as part of the development of the proposed project.

The nearest off-site residence is located along John Street, approximately 920 feet north of the project area. The Petitioner contends that the proposed project would not be visible from such residence due to intervening vegetation and existing buildings. While DEEP believes that some views of the project on the landfill from this nearest residence may be possible during leaf-off conditions, Council staff notes that it would be a distant view.

The closest solar panels to Quinnipiac River State Park would be located approximately 150 feet from the park. Therefore, it would be unlikely that the panels would be directly visible from most locations within the park. Park users standing within the existing cleared electric transmission ROW would have the potential to experience views of the project, but such views would still be constrained by trees and would include more industrial elements in the background.

The project would only be fully visible from Ball Street, Pent Road and an area of South Cherry Street to the east of the project. Each of these roads run adjacent to site boundaries and has no intervening structures or vegetation to block views of the project. In these areas where the project would be visible, the views would be consistent with the existing industrialized character of the location. Given the industrial nature of the location and adjacent properties, landscape plantings are not proposed at this time.

Conclusion

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

Recommendations

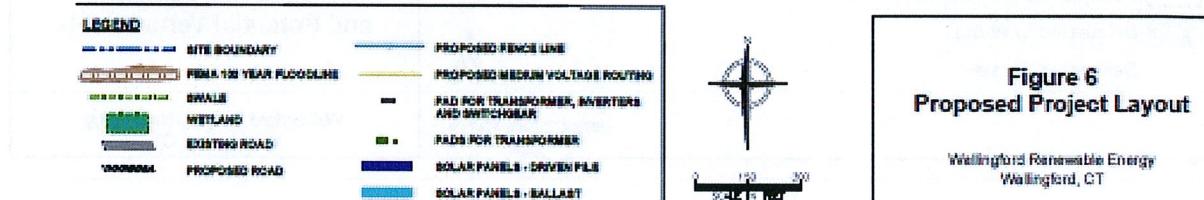
Staff recommends inclusion of the following conditions:

1. The Petitioner shall prepare a Development and Management Plan (D&M) for this site in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and

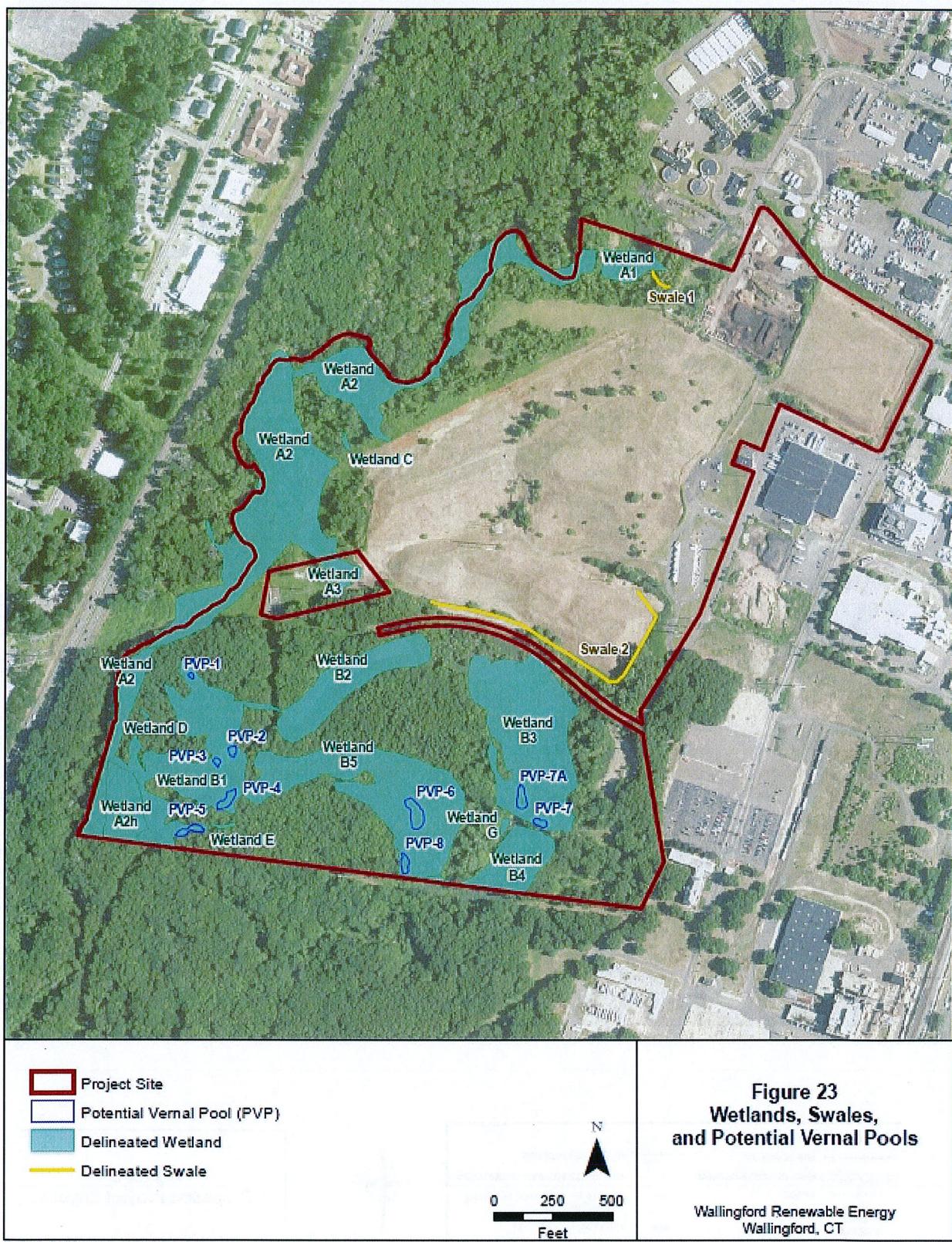
Management Division and the Towns of Wallingford, Hamden and North Haven for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

- a) A final site plan including, but not limited to, final solar panel design, electrical interconnection, fencing and equipment pads;
- b) Plans for ballast mount delivery to site or plans to pour concrete on-site;
- c) Final Vernal Pool Survey results and associated protective measures;
- d) Plans to comply with DEEP NDDB Comments dated March 9, 2018 including, but not limited to, final turtle protection plan, final bat protection plan and plans for additional NDDB invertebrate surveys or relocation of solar panels outside of the sand barren habitat;
- e) Final seed mixture and any associated pollinator species as applicable;
- f) Final erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control*; and
- g) Copy of DEEP General Permit.

Proposed site layout



Wetlands and Potential Vernal Pools



Habitat Areas

