Petition of East Windsor Solar One, LLC for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is Required for the Proposed Construction, Operation, and Maintenance of a 4.9 +/- MW AC Solar Photovoltaic Electric Generating Facility Located at 341 East Road, East Windsor, Connecticut

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I. Introduction

A. Purpose and Statutory Authority

Pursuant to Conn. Gen. Stat. §§ 4-176 and 16-50k(a) and Regs. Conn. State Agencies §§ 16-50j-38 et seq., East Windsor Solar One, LLC (the "Petitioner"; or "East Windsor Solar One") respectfully requests that the Connecticut Siting Council (the "Council") approve, by declaratory ruling, the Petitioner's proposed installation and development of a 4.9 +/- megawatt ("MW") solar-based electric generating facility (the "Project") to be located at 341 East Road, East Windsor, Connecticut (the "Project Site"; or the "Site").

Conn. Gen. Stat § 16-50k(a) provides, in relevant part, that,

> *…[T]the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . . (B) the construction or location of any... grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection…*

In accordance with the above, the Petitioner respectfully requests that the Council approve this Project by declaratory ruling. As detailed below, the proposed Project is a grid-side distributed resources facility, with a capacity of not more than sixty-five (65) megawatts, that meets the applicable air and water quality standards of the Connecticut Department of Energy and Environmental Protection (the "CTDEEP"). The Project will not have an undue adverse effect on the existing environment and ecology, nor will it affect the scenic, historic and recreational resources that are within the vicinity of the Project. The Project will, however, offer a multitude of benefits to the State of Connecticut and the East Windsor community.

B. Project Overview/Key Project Elements

The Project was selected and awarded a fifteen (15)-year contract to participate in Connecticut's Zero Emissions Renewable Energy Credit ("ZREC") program.[1] The Project's output will be used to help Connecticut meet its emissions reduction targets via the State of Connecticut's Renewable Portfolio standards and Governor Lamont's aggressive Greenhouse gas ("GHG") reduction goals.[2]

Energy produced by the Project will be sold to Eversource at market rates specified in the applicable utility tariff with Eversource for any self-generation facility. Alternatively, in the event that virtual net metering capacity becomes available, the Project may deliver energy to certain eligible recipients through the Eversource's Virtual Net Metering Rider (effective September 24, 2019 by PURA Decision dated October 21, 2019, under Docket No. 13-08-14RE05) ("VNM Rider") or any successor rider thereto. Should virtual net metering capacity become available, the Project intends to deliver energy and allocate credits to agricultural and municipal recipients (including the Host Municipality). Any participation in the virtual net metering program would be subject to all VNM Rider and other program requirements and is contingent upon the availability of virtual net metering capacity.

1. Site

The Project will be located at 341 East Road, East Windsor, Connecticut—a privately-owned, 147.81-acre parcel that straddles the Towns of East Windsor (the "East Windsor Parcel") and Ellington (the "Ellington Parcel" and collectively with the East Windsor Parcel, the

[1] Conn. Gen. Stat. § 16-244(r), 16-244(s) and 16-244(t) require that Eversource & UI enter into 15-year contracts to purchase renewable energy credits (RECs) from qualifying projects in Connecticut at a fixed price for 15 years.

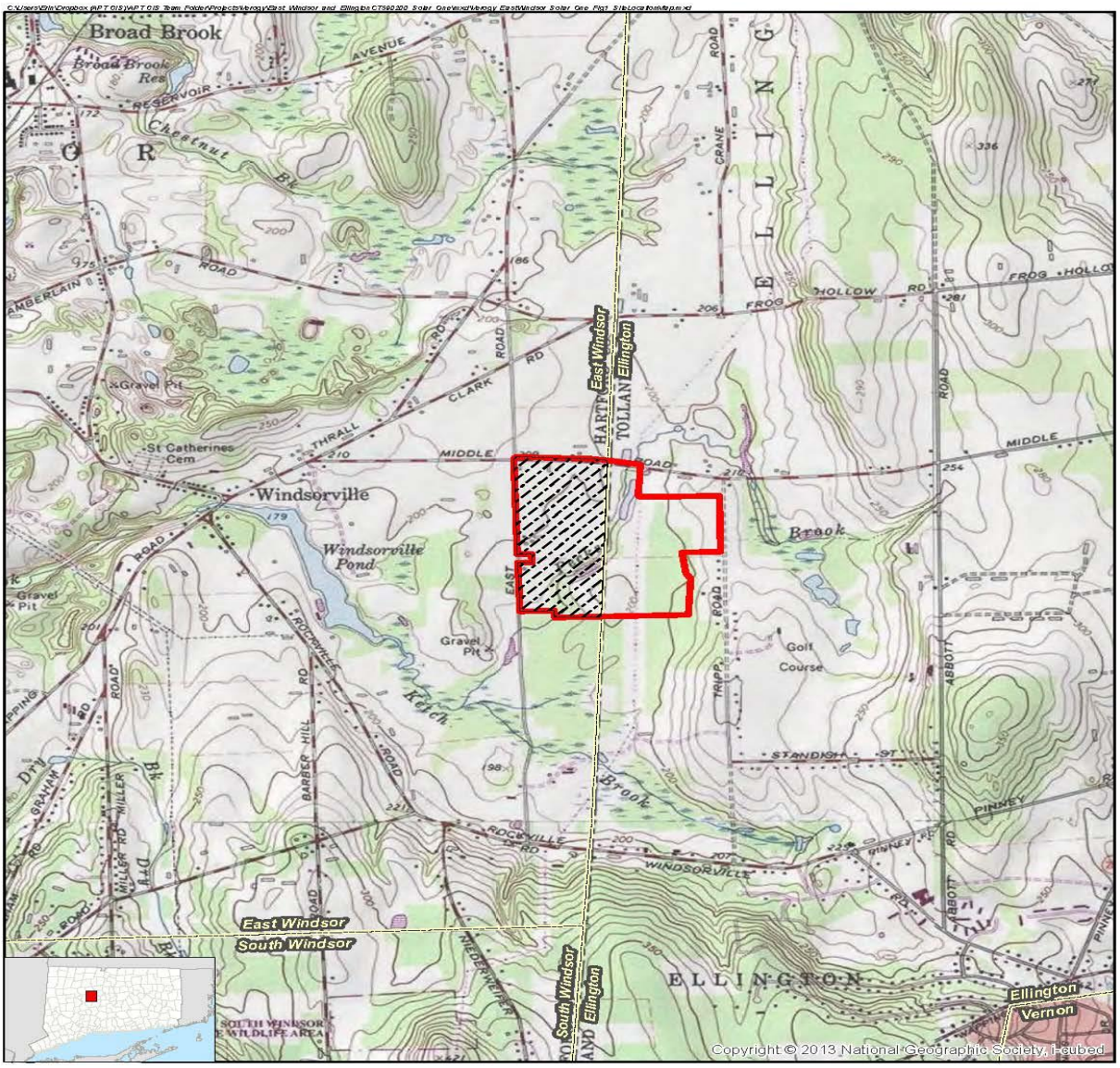
[2] All electricity sold in Connecticut includes a mandatory amount of renewable energy, referred to as Connecticut's Renewable Portfolio Standard or RPS. The utilities and licensed suppliers buy or trade RECs to meet these standards.

"Property").[3] The Project will be located entirely within the East Windsor Parcel (the "Project Site"; or "Site").

The East Windsor Parcel is zoned both as Agricultural/Residential (A-1) and Single Family Residential (R-3), and is primarily undeveloped, active agricultural land. A farmhouse and several farm buildings lie within the eastern portion thereof, and a large barn is present within the northern extent of the Site. Small wooded areas line the eastern and southern boundaries, adjoining forested areas on neighboring parcels. The Ellington Parcel is similarly undeveloped, however, it contains an electric utility transmission line right of way ("ROW") that extends in a north/south direction through the western extent of the parcel. Active agricultural land is located in the northeast and southwest portions of the Ellington Parcel while its center is largely forested.

Figure 1, *Site Location Map*, depicts the location of the Property, the Project Site, and surrounding area.

[3] The western portion of the Property (±75.99 acres) is located at 341 East Road in East Windsor (Volume/Page: 340/681 – East Windsor Assessor) with the eastern portion of the Property (±71.82 acres) located at 146 Tripp Road (Volume/Page: 409/1033 – Ellington Assessor) in Ellington, Connecticut.



2. Electrical Interconnection

The proposed electrical interconnection for the Project will extend overhead to an existing distribution pole that is located to the northwest of the Site along East Road, south of its

intersection with Middle Road. To effect said interconnection, approximately four (4) new utility poles will need to be installed.

The interconnection will be performed in accordance with Eversource's technical standards and State of Connecticut, ISO-New England ("ISO-NE"), and Federal Energy Regulatory Commission ("FERC") requirements.

3. Community Relations

The Petitioner is committed to fostering positive relations with the East Windsor community, and has been proactive in its attempts to engage East Windsor residents in the development of the Project.[4] To that end, the Petitioner has:

1. Developed a Project fact sheet that contains pertinent Project information, including, *inter alia*, a proposed Project calendar/schedule, anticipated Project benefits, and general information regarding the Petitioner, its Project Team, and respective business operations;[5]
2. Created a Project-specific website (the "Website"), accessible at, https://www.verogy.com/east-windsor-solar-one/, where the Petitioner has posted information and periodic updates about the Project. In addition, the Website affords interested stakeholders the ability to submit Project-related inquiries/comments directly to the Petitioner/Project Team;
3. Engaged in regular discussions with local East Windsor officials and residents about the Project;

[4] By way of example, the Petitioner has encouraged interested stakeholders to "reach out with any questions, comments or concerns about East Windsor Solar One. *See* East Windsor Solar One website, accessible at, https://www.verogy.com/east-windsor-solar-one/ (providing, "Contact Us. Please feel free to reach out with any questions, comments or concerns about East Windsor Solar One. We will work to get back to you within two business days.").

[5] The East Windsor Solar One Fact Sheet is available online at, https://www.verogy.com/wp-content/uploads/2020/06/East-Windsor-Fact-Sheet-Final-6-1-2.pdf.

4. Discussed the proposed Project at the June 23rd East Windsor Planning and Zoning Commission Meeting; and,
5. Notified all abutters and applicable Municipal officials of this pending Siting Council Petition via certified mail on August 5-6, 2020. A listing of the individuals who were notified is included in Exhibit A.

II. Legal Name and Address of Petitioner and Contact Information

The legal name of the Petitioner is East Windsor Solar One, LLC. East Windsor Solar One is a Connecticut limited liability company with its principal place of business in Hartford, Connecticut. East Windsor Solar One is an affiliate of Verogy LLC ("Verogy"). Verogy is a professional renewable energy business with decades of experience in the solar industry; the core of its business is developing, financing, constructing, managing, and operating solar projects. The management team at Verogy has constructed over 250 megawatts of solar projects across the United States.

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Correspondence and other communications concerning the Project are to be addressed to, and notices, orders and other papers may be served upon, the following:

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All three individuals consent to electronic mailings of all Council and Petition-related correspondence.

III. Description of Proposed Project

A. Property Description and Site Selection

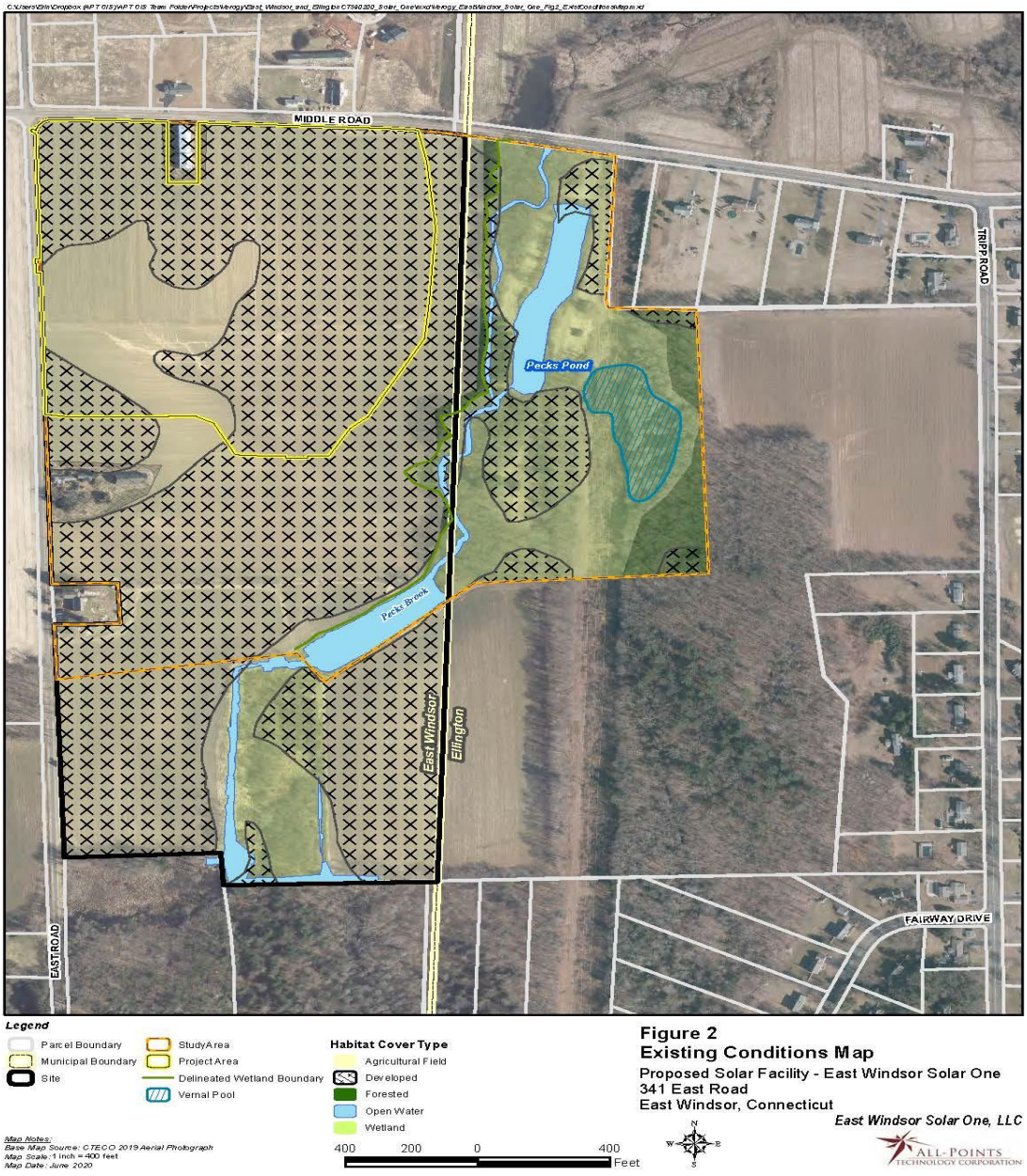
The Property is a 147.81-acre parcel that straddles the Towns of East Windsor and Ellington, respectively. The surrounding land use is characterized primarily by a mix of undeveloped wooded and agricultural land, with residential development across Middle Road to the north of the Property. Additional residential development becomes more prevalent farther southeast and southwest of the Property.

The proposed location for the Project falls entirely within the East Windsor Parcel (the "Project Site"; or "Site"). The Project Site is located east of East Road, south of Middle Road, and bounded to the west by the Ellington municipal boundary. A small section of the southern extent of the Site is wooded; Pecks Brook enters the Site from the east and continues south before exiting. The Site's existing topography slopes gently from north to south, with ground elevations ranging from approximately 205 feet above mean sea level ("AMSL") in the north, to 185 feet AMSL to the southwest.

The Project's solar electric energy generating facility (the "Facility") will be sited within an existing agricultural field that comprises the northern portion of the Site (the "Project Area"). The Facility will occupy approximately 24.0 acres, with an additional 5.1 ± acres of existing cleared

land to be used and maintained beyond the fenced Facility limits, for a total Project Area of approximately 29.1 acres.

Figure 2, *Existing Conditions Map*, depicts current conditions on the Site.



The Petitioner selected the Site due to the anticipated minimal impact(s) the Project will have on the existing environmental conditions of the area. More specifically, the Project will be sited on land that is pre-cleared and not within core forest—thereby minimizing the amount of tree-clearing required. Furthermore, the Facility itself will not impact any wetlands, and appropriate setbacks from neighboring properties have been incorporated into the Project's site design. The Site is located in close proximity to the existing electrical grid, which further limits construction- and/or operational-related impacts. Lastly, the Project will only occupy an estimated 30 acres out of a total 147.81 acres—thereby leaving approximately 80% of the Property undeveloped and available for other uses, including agriculture and open space.

B. Proposed Project Description

Provided below is pertinent Project information—including, (i) the contemplated Facility/Project equipment; (ii) the expected service life and capacity factor of the Facility; (iii) how the Site will be accessed; (iv) the proposed electrical interconnection plans for the Project; (v) the Petitioner's preliminary construction and phasing schedule(s) for the Project; (vi) anticipated maintenance plans for the Project; and (vii) the decommissioning thereof.

1. Solar Panels and Related Ground Equipment

As presently designed, the Facility will consist of 19,344 photovoltaic modules ("panels")—specifically, 15,990 being Trina TSM-DE15MC 395W panels and 3,354 being Risen RSM144-6 380W panels; 39 Solectria Solar's XGI 1500-125/125 inverters; one (1) Chint CPS SCH100KTL-DO/US-600 inverter; three (3) pad mounted switchgears; three (3) transformers;[6] and, one (1) service interconnection line. A ground-mounted racking system will be used to secure the panel arrays.

Once constructed, the leading edge of the panels will be approximately thirty-six (36) inches above the existing ground surface, which will provide adequate room for any accumulating

[6] The proposed transformers are one (1) 250 kVA, one (1) 1,000 kVA and one (1) 2,000 kVA.

snow to "sheet" off. Any production degradation due to snow build-up has already been modeled into the annual system output and performance calculations for the Project. It is not anticipated that the panels will require any cleaning or snow clearing.

An eight (8)-foot tall chain-link security fence, equipped with privacy slats, will be installed along the northern portion of the Facility, adjacent to Middle Road. Remaining sections of the Facility will be enclosed by a six (6)-foot tall chain-link security fence (without privacy slats). The proposed electrical interconnection for the Project will extend overhead, via the installation of approximately four (4) new utility poles, to an existing distribution pole located to the northwest of the Site along East Road, south of its intersection with Middle Road.

Proposed development drawings are provided in Appendix A of the Environmental Assessment ("EA"). The EA is included in Exhibit B

2. Service Life and Capacity Factor

The Facility's panels and inverters have an anticipated service life of thirty-five (35) years. Solar PV has an expected net AC capacity factor of approximately 21.9 (%) percent.

3. Site Access

The Facility will be accessed from the west, off of East Road (East Windsor). Because there are no existing interior roads within the proposed boundaries of the Project Area, the Petitioner will need to construct approximately 2,340 feet of gravel road(s) to accommodate both the construction of the Facility and to provide service/maintenance vehicles access/egress within and around same.[7]

4. Interconnection

[7] The development of the access roads will require minimal grading and the installation of gravel surfacing.

The proposed electrical interconnection for the Project will extend overhead to an existing distribution pole that is located to the northwest of the Site along East Road, south of its intersection with Middle Road. To effect said interconnection, approximately four (4) new utility poles will need to be installed.

The interconnection will be performed in accordance with Eversource's technical standards and State of Connecticut, ISO-New England ("ISO-NE"), and Federal Energy Regulatory Commission ("FERC") requirements.

5. Construction Schedule and Phasing

The Petitioner anticipates that construction of the Project will begin no earlier than November of 2020 and will take approximately six (6) months. Construction activities within the Project Area will include: grading to incorporate the Project's proposed stormwater management features, erosion and sedimentation ("E&S") control measures, plantings for visual screening, and racking and module(s) electrical trenching; the installation of four (4) utility poles; and, new access road(s) development. Existing grades throughout the Project Area will remain, except in areas where the Project's stormwater management features are proposed. For those areas, some manipulation (i.e., cuts/fills) and regrading will be required.

The Petitioner's preliminary construction plans are as follows:

Phase 1:

1. Remove existing impediments as necessary and provide minimal clearing and grubbing to install the required construction entrances;
2. Install perimeter erosion control; and
3. Install temporary sediment basin TSB-1.

Upon completion of the installation and stabilization of the basin, Phase 2 work upgradient can proceed.

Phase 2:

1. Upon completion of the installation of the temporary sediment basin, remove and dispose of demolition debris off-site in accordance with applicable laws;
2. Temporarily seed disturbed areas not under construction for thirty (30) days or more;
3. Install gravel access road, equipment pad, and electrical conduit;
4. Install racking posts for ground mounted solar panels;
5. Install ground mounted solar panels and complete electrical installation;
6. After substantial completion of the installation of the solar panels, complete remaining site work, including any required landscape screening, and stabilize all disturbed areas;
7. Convert the temporary sediment basin into the final stormwater basin, as needed;
8. Fine grade, rake, seed, and mulch all remaining disturbed areas; and
9. After the Site is stabilized, remove perimeter erosion and sedimentation controls.

6. Project Maintenance

Required maintenance of the Project will be minimal; the Petitioner anticipates that the Site will require mowing and routine maintenance of the electrical equipment one (1) time per year, which will typically involve two (2) technicians. Within the fenced Facility limits, the Petitioner will utilize sheep-grazing for vegetation maintenance purposes. The Petitioner does not expect that any snow-removal operations will be necessary for the Project, given that the selective positioning of the Facility's panels allows for any accumulating snow to "sheet" off. Repairs to the Facility will be made on an as-needed basis.

7. Project Decommissioning

At the end of its lifespan, the Project will be fully decommissioned and removed from the Property. Once the Project is removed, the Petitioner will restore the Site to its original condition.[8]

IV. Project Benefits

If approved, the Project will provide a range of environmental and economic benefits to the State of Connecticut and the Town of East Windsor, respectively, including:

- Once operational, the Project will generate approximately 9,362 MWh per year. This is enough renewable energy to power 1,154 homes for an entire year and would effectively offset 6,620 metric tons of carbon dioxide annually—the same amount as 109,469 tree seedlings grown for ten (10) years, or 16,186,669 miles driven by an average passenger vehicle;
- Reduction in energy demand during peak usage will decrease energy costs for ratepayers Statewide;
- The creation of twenty-four (24) construction jobs and two (2) new full-time jobs in the region;
- The Project will effectively Increase new annual municipal tax revenues for East Windsor with no additional burden on town services;
- The Project will provide Infrastructure upgrades that will improve the reliability of East Windsor's electrical grid; and
- The Project will only occupy an estimated 30 acres out of a total 147.81 acres—thereby leaving approximately 80% of the Property undeveloped and available for other uses, including agriculture and open space.

[8] The Petitioner notes, however, that the property owner may decide to retain the access roads.

V. Potential Environmental Effects

As will be demonstrated below, the Project, if approved, will not pose any material public health or safety concerns, nor will it have an undue adverse effect on the existing environment and ecology. No core forest, wetlands, watercourses, or vernal pools will be directly impacted by the development of the Project, nor will the scenic, historic, and recreational resources located within the vicinity of the Project Site be affected thereby.

A. Public Health and Safety

The Project will meet and/or exceed all applicable public health and safety standards and requirements related to electric power generation. Accordingly, in terms of public health, the Facility will neither consume any raw materials, nor produce any by-products and will be unstaffed during normal operating conditions—thereby minimizing the potential for harmful pollutants being emitted on-Site. In addition, no potable water use(s) or sanitary discharges are planned in connection with the operation of the Facility, nor is the use of liquid fuel contemplated. Stormwater generated by the proposed development of the Project will be properly handled and treated in accordance with the 2004 *Connecticut Stormwater Quality Manual* and recent guidance issued by Connecticut DEEP thereby ensuring that the Property and surrounding area will not be affected by same.

With respect to safety, the Facility will be enclosed within a chain-link security fence that ranges in height from six (6) feet—along the east, west and southern perimeters—to eight (8) feet, along the northern perimeter. In addition, the entrance to the Facility will be gated—limiting access to authorized personnel only—and all Town emergency response personnel will be provided access to the Facility via a Knox Pad lock. Importantly, the Petitioner notes that the Facility will be monitored from off-site and will have the ability to remotely de-energize in the event of an emergency.

B. Federal, State, and Local Land Use, Conservation and Development Plans

The Project is consistent with local, state, and federal policies. Connecticut has committed to countering the adverse effects of climate change and the State's reliance on fossil fuels and natural gas. To that end, Connecticut has adopted ambitious goals regarding the deployment of renewable energy resources in the State, including, *inter alia*, eliminating carbon from the power grid by 2040 and an economy-wide reduction in carbon emissions from current levels of 35 percent by 2030, 70 percent by 2040, and carbon neutral by 2050.[9] The Project, if approved, will help support these ambitious efforts by developing a renewable energy resource that does not have a substantially adverse environmental effect.

Moreover, while local land use requirements do not apply to the Project, it has nonetheless been designed to meet, to the extent feasible, the intent of the Town of East Windsor's 2016 Plan of Conservation and Development ("POCD") relating to the promotion of solar power and renewable energy.[10]

C. Ecological, Vegetation, Wildlife Habitat, and Natural Diversity Database and Endangered Species

This section provides an overview of the Site's current environmental conditions and an evaluation of the Project's potential impacts to same. As the following demonstrates, the Project

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[9] *See* Governor Ned Lamont Renewable Energy Plan (July 2018), accessible at, https://www.ctlcv.org/uploads/6/2/0/1/6201942/ned_lamont_energy_plan_10-11-18.pdf

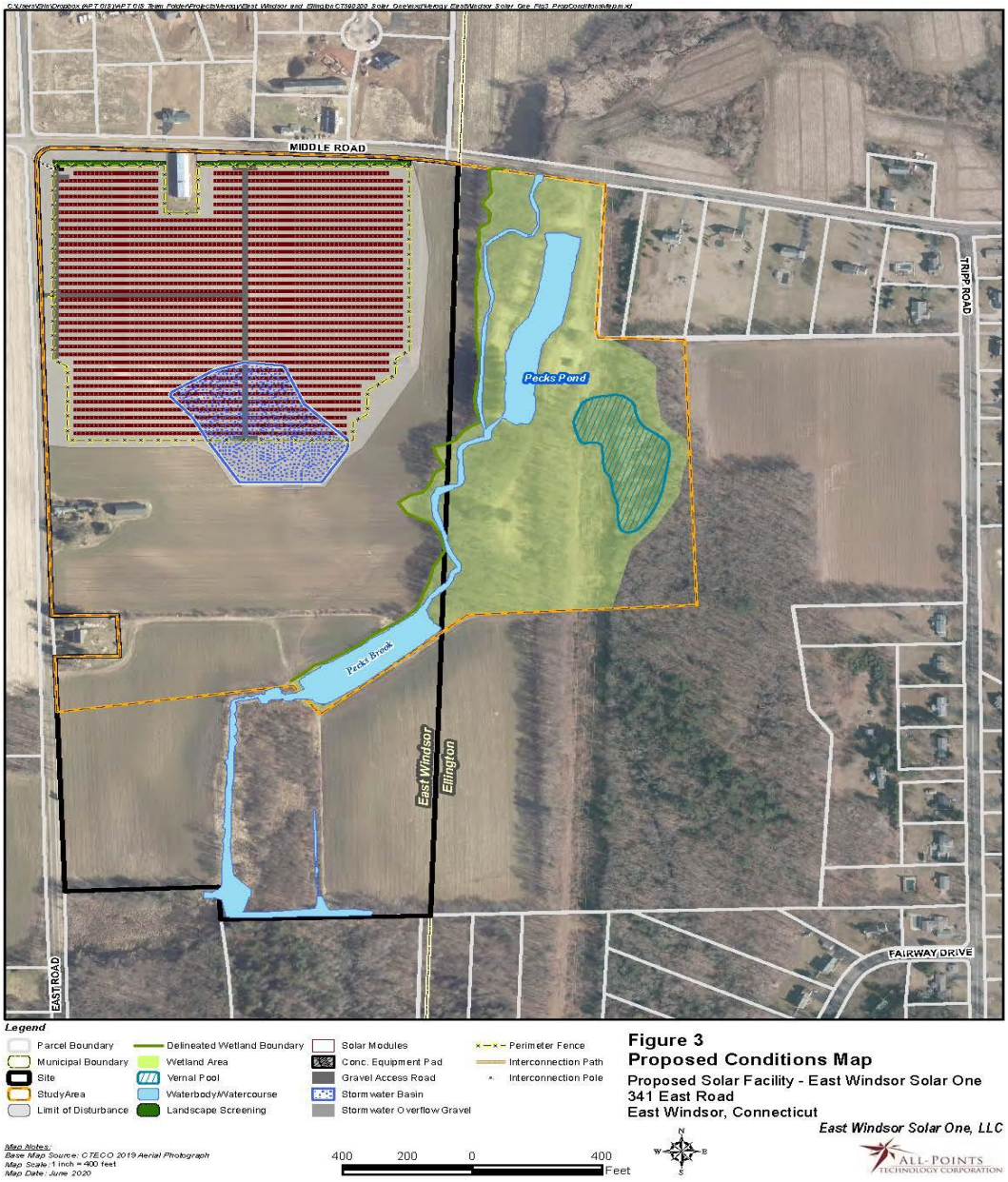
[10] *See* Town of East Windsor Plan of Conservation and Development (2016), p. 94 (providing, in pertinent part, "…Promote Solar Power/Renewable Energy, and reduction of Greenhouse Gas Emissions in the Town… Amend Zoning Regulations with guidelines to be more defined and adaptable for solar uses… Consider allowing Solar Farms as a primary use…").

Note: The Town of Ellington's 2019 POCD does not specifically address the promotion or use of solar power.

will comply with the air and water quality standards of the CTDEEP and will not have an undue adverse effect on the existing environment and ecology of the Site and surrounding area.[11]

Please refer to Figure 3, *Proposed Conditions Map*, for a depiction of the Project and its compatibility with the Site resources discussed herein.

[11] Please note that, for purposes of this evaluation, a ±79-acre portion of the Property was identified as the "Study Area," as depicted in Figure 2, *Existing Conditions Map*. This figure depicts current environmental conditions on the Site, within the Study Area, and several other features discussed herein.



1. Habitats

During field investigations performed on May 21, 2019 and January 2, 2020, respectively, five (5) habitat types (vegetative communities) were identified on-Site and subsequently

assessed: Agricultural Field, Developed, Forested, Open Water, and Wetland.[12] Transitional ecotones separate these distinct habitat types in proximity to the Project Area. The results of these investigations are summarized below.

Agricultural Field

Agricultural Field habitat dominates the majority of the Site, as well as the Project Area. Currently, portions of these cultivated and (historically) harvested fields are planted with cover crops of annual rye (*Lolium multiflorum*) and clover (*Trifolium sp.*). At the time of its inspection, however, the majority of the Field was fallow with exposed soils present.

Potential Project-related impacts to the Agricultural Field include changes in density and/or species composition of cool season grasses and clovers. Importantly, however, the Petitioner does not anticipate that the development of the Project will result in a significant alteration to the Agricultural Field underlying the Facility components. Accordingly, the areas that will be disturbed during Project construction will be reseeded with similar, semi-shade tolerant, grasses and forbs with seeding of species consistent with the grazing of sheep that will occur once the project is constructed. While the Petitioner expects that minor modifications to existing conditions will result from shading beneath the panel arrays, post-construction vegetation maintenance will mimic and/or improve the current management activities within this habitat.

Developed

The Project would have no effect on the developed areas of the Site, which consist of a farmhouse and several farming buildings located beyond the bounds of the Project Area.

Forested

No substantive, forested land occurs on the Project Site; however, a minor incursion of forest extends into the eastern portion of the identified Study Area (in Ellington), southeast of the

[12] Details of these habitat types were assessed within the Study Area via field evaluations, while habitat types identified beyond the Study Area were generally assessed using remote sensing and publicly available datasets.

Project Area. Accordingly, the Ellington Parcel is largely forested and consists of mature, mixed-hardwoods that have been heavily influenced by edge effects (resulting from surrounding agricultural fields to the west (on the Site) and farther east on abutting land, as well as the electrical transmission corridor, which is interior to the wooded area). The tree canopy is dominated by complexes of sugar maple (*Acer saccharum*), red maple (*Acer rubrum)*, white oak (*Quercus alba*), black cherry (*Prunus serotina*), yellow birch (*Betula alleganiensis*), and scattered stands of white pine (*Pinus strobus*). The invasive, non-native, Japanese barberry (*Berberis thunbergii*) dominates the shrub layer; while spicebush (*Lindera benzoin*) and sapling trees comprise the overstory. Asiatic bittersweet (*Celastrus orbiculatus*) and foxgrape (*Vitis labrusca*) also occur throughout this habitat. The herbaceous layer is largely devoid of vegetation due to the dense, closed canopy, with limited occurrences of Canada mayflower (*Maianthemum canadense*), Christmas fern (*Polystichum acrostichoides*) and various forest grasses/sedges.

The Project will not encroach within Forested habitat on the Site, so no tree trimming will be necessary for its construction. As a result, the Project is not expected to have any effect on this habitat.

Open Water

Two (2) Open Water features were identified within the Study Area: a large, open waterbody, identified as "Pecks Pond" and an associated, perennial watercourse, identified as, "Pecks Brook." This habitat type consists of cool water resources located interior to the above-referenced Forested habitat. These features drain south and southwest—generally along the eastern boundary of the Site.

The proposed location for the Project is significantly removed from these resources—and through the proper installation and maintenance of E&S controls during- and post- construction, no impact to the Open Water habitat is anticipated.

Wetland

One (1) wetland area was identified on the Site, which includes an interior perennial watercourse and vernal pool. As this wetland consists of a complex of habitat types, a more detailed discussion of same is provided in the "Wetlands" section below.

Table 1, *Habitat Assessment and Impacts Table*, provides calculations regarding the total on-Site area(s) for each referenced habitat type, as well as the total area(s) proposed to be affected by the Project.

Table 1: Habitat Assessment and Impacts Table		
Habitat Type	Total Area On-Site (+/- ac.)	Area Affected by Project (+/- ac.)
Agricultural Field	66.7	29.1
Developed	1.9	0.0
Forested	3.3	0.0
Wetland	22.6	0.0

2. Wildlife

Although a diversity of habitat is present on the Site, the respective sizes of same—in conjunction with the area's surrounding development—generally creates a limiting factor in terms of their utilization by wildlife. Accordingly, habitat "specialists" that require large, contiguous habitat blocks (e.g., mammals and birds) are not supported by the Site's existing environment. This is credited to the fact that the entire Project Area—as well as the majority of the Project Site—consist(s) of routinely-managed agricultural fields, and consequently do(es) not support any substantive wildlife habitat. Adjacent complexes of upland and wetland forest habitats to the east of the Site, however, may support forest-dwelling and wetland-dependent wildlife populations.

Despite their relatively small size(s), the complexity of habitats on and adjacent to the Property may provide higher quality habitat for "generalist" wildlife species—meaning, those species that are more tolerant of human disturbance, habitat fragmentation, and "edge" effects. These include several song birds and mammals—such as, raccoon (*Procyon lotor*), striped skunk

(*Mephitis mephitis*), grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphus virginiana*), and eastern chipmunk (*Tamias striatus*). As such, any of these species could be expected to use these areas.

Although portions of the existing Agricultural Field habitat will be affected by the Project, similar Agricultural Field habitat occurs both on and adjacent to the Site. Notwithstanding, because the Project development occurs entirely within the Agricultural Field habitat—which, as explained above, currently only offers limited wildlife habitat value—the Project is not expected to significantly impact wildlife that may be using this habitat.

3. Core Forest

All Points Technology ("APT")—through utilization of two (2) publicly available GIS-based datasets designed to assess impacts to core forest habitat—evaluated the size and extent of the contiguous interior forest block (or "core forest") present within and adjacent to the Site. In addition, APT performed an independent evaluation of the Site (based on GIS analysis of 2016 leaf-off aerial photography, field observations, and professional experience). As described in further detail below, these evaluations revealed that the Site does not contain any forested habitats identified as "core forest."

The first dataset, the CTDEEP's *Forestland Habitat Impact Mapping,* [13] revealed that the Site is not included within an area mapped as "core forest." APT also reviewed UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA"),[14] which similarly revealed that the Site does not contain any forested habitat identified as "core forest." These findings were consistent with APT's independent analysis of the Site.

That said, while limited, forested habitat does exist on the eastern side of the Property, it is entirely influenced by "edge" effects and is therefore not considered "core forest" habitat.

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[13] Source: http://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=7b81844bab634281b544c20bf2d7bfb8: This spatial screening layer identifies prime contiguous and connected core forestland blocks. If the project intersects with the Forestland Habitat Impact Map there is a potential for material effects to core forest.

[14] CLEAR's FFA: http://clear.uconn.edu/projects/landscape/forestfrag/forestfrag_public%20summary.pdf

Notwithstanding this fact, the Project Area will be located entirely within an existing agricultural field, and as such, no tree clearing is proposed. Therefore, the Project will not impact any of the forested resources identified at the Site.

Importantly, in accordance with Conn. Gen. Stat. § 16-50k(a), the Petitioner provided the CTDEEP Forestry Division ("Forestry") with certain information and materials that demonstrate that the Project will not materially affect core forest. On May 21, 2020, the Petitioner received confirmation from Forestry that the Project will not "…have a material impact" to the State's core forest resources. *See Exhibit C*, Forestry Correspondence.

4. Soils and Geology

Soils

Surficial materials within the Site are classified as deposits of sand and thin deposits of glacial till; soils located on and within the vicinity of the Site are identified as Enfield silt loam, Manchester gravelly sandy loam, and Tisbury silt loam.

Enfield silt loam is a well-drained, coarse-silty eolian over sandy, and gravelly glaciofluvial deposited soil that is derived from granite, schist, and/or gneiss parent material. Manchester gravelly sandy loam is an excessively-drained, sandy, and gravelly glaciofluvial deposited soil that is derived from sandstone and shale and/or basalt parent material. Tisbury silt loam is a moderately well-drained, coarse-silty eolian over sandy, and gravelly glaciofluvial deposited soil that is derived from granite, schist, and/or gneiss parent material.

Construction of the proposed gravel access roads and the grass-lined infiltration basin will require minimal grading and will generate some material that will be subsequently redistributed within the Site. The re-use of this material will result in approximately zero (0) cubic yards net cut/fill for the Site. Prior to the removal or placement of the excavated material, the topsoil will be segregated and reused within the Project Area. All exposed soils resulting from construction activities will be properly and promptly treated in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

Bedrock

Bedrock geology beneath the Site is identified as Portland Arkose. Portland Arkose is described as a reddish-brown to maroon, micaceous arkose and siltstone, and red-to-black, fissile, silty shale that grades eastward into coarse conglomerate (fanglomerate). The Petitioner does not, however, anticipate encountering bedrock during Project development.

5. Prime Farmland Soils

In accordance with the Code of Federal Regulations, CFR Title 7, part 657, farmland soils include land that is defined as "prime", "unique", or "farmlands of statewide or local importance," based on soil type. Farmland soils are regarded as the most suitable land in terms of producing food, feed, fiber, forage, and oilseed crops.

According to the Connecticut Environmental Conditions Online Resource Guide,[15] the Site contains "Prime Farmland Soils" within the proposed Project Area. *See* Figure 2, *Existing Conditions Map*. However, for the reasons delineated below, the Petitioner does not expect that the Project will have a material impact to same.

As a preliminary matter, over the past century, the Site has been used primarily as agricultural land. These agricultural activities have, in turn, subjected the majority of the Project Area to routine disturbances associated with plowing and cultivation--and more recently, compaction resulting from equipment and vehicles that have been used for haying this area. Moreover, the Petitioner has proposed using minimally intrusive methods for the construction of the Facility to avoid potential, further impact. By way of example, the proposed utilization of pile-driven mounts for installation of the solar panels and associated equipment minimizes the need for substantial grading on the Site.

[15] Connecticut Environmental Conditions Online (CTECO) Resource Guide, accessible at, www.cteco.uconn.edu.

While the construction of the Project's stormwater basin, swales, access roads, and equipment pads will require excavations within areas mapped as "Prime Farmland Soils," any topsoil removed during said construction will be segregated and either stockpiled for reuse or spread elsewhere (as top dressing for re-establishing vegetation). No topsoil will leave the Site, however. After its useful life, the Facility will be decommissioned and all disturbed areas will be returned to pre-development conditions (with the exception of the access roads which the present owner may decide to keep). The proposed implementation of these design strategies demonstrates that the Project will not materially affect the Prime Farmland Soils on the Site.

Lastly, in accordance with Conn. Gen. Stat. § 16-50k(a), in May of 2020, the Petitioner initiated consultation with the Connecticut Department of Agriculture ("DOA") to present the Project and discuss the presence of Prime Farmland Soils at the Site. As a result of said consultation, the Petitioner intends to implement a grazing program for vegetation maintenance within the fenced perimeter of the Project. More specifically, a company that specializes in such services will provide the Petitioner with a flock of sheep each year (from April/May to October/November) which will be maintained on the Site under the care of a local farmer. The area proposed for such grazing activities will be seeded with low-growing grasses and forbs that are suitable for sheep as well as pollinator-friendly species. In addition, the remaining portions of the Site will be retained for agricultural uses. The Petitioner is currently awaiting a written response from the DOA regarding this proposal.

The *Farmland Soils Assessment and Impacts Table*, below, details the amount of Prime Farmland Soil that is present within the Site and the Project Area.

Farmland Soils Assessment and Impacts Table

Farmland Soils Assessment and Impacts Table		
Farmland Soil Classification	Total Area On-Site (+/- ac.)	Area within Project Limits (+/- ac.)
Prime Farmland Soil Area	67.9	21.3

6. State-Listed/ Threatened Species

APT reviewed publicly-available information to determine the potential presence of state/federally-listed species and critical habitats on or proximate to the Site. The results of said review are provided below.

NDDB Consultation

By way of background, the CTDEEP Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact(s) of proposed development projects on state-listed species and to help landowners conserve the state's biodiversity. In furtherance of this endeavor, the CTDEEP also developed maps to serve as a pre-screening tool to help applicants, such as the Petitioner, determine if there is the potential for project-related impact to state-listed species.

The NDDB maps represent approximate locations of (i) endangered, threatened and special concern species and, (ii) significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CTDEEP staff, scientists, conservation groups, and landowners. In some cases, an occurrence represents a location derived from literature, museum records, and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as "shaded" (or cross-hatched) areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

That said, APT reviewed the most recent CTDEEP NDDB mapping (June 2020) to determine if any such species or habitats occur on or within 0.25-mile of the Project Site. The NDDB mapping reveals that the Site is located within an area potentially containing Threatened, Endangered, or Special Concern species and/or critical habitats. As such, pursuant to CTDEEP and Council requirements, on February 24, 2020, APT submitted a review request to the NDDB with respect to the Project. On March 5, 2020, the CTDEEP responded to APT's request and indicated

that it does "not anticipate negative impacts to State listed species" resulting from the proposed Project activities. Copies of APT's submission and CTDEEP's response are provided in Appendix B of Exhibit B, entitled, *DEEP NDDB Correspondence.*

USFWS Consultation

The northern long-eared bat ("NLEB"; *Myotis septentrionalis*) is a federally-listed[16] threatened species also known to occur in the vicinity of the Site. The NLEB's range encompasses the entire State of Connecticut and suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three (3) inches or greater.

To determine the locations of any known maternity roost trees or hibernaculum in the State, APT reviewed *The Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance map* (February 1, 2016). This map reveals that there are currently no known NLEB maternity roost trees in Connecticut; the nearest NLEB habitat resource to the Site is located in East Granby, approximately 11.3 miles to the northwest thereof. Because no tree-removal operations are contemplated in connection with the instant Project, the NLEB habitat will not be impacted thereby.

In addition, APT completed a US Fish and Wildlife Service ("USFWS") "Determination of Compliance" with Section 7 of the Endangered Species Act of 1973 for the Project. Pursuant thereto, the Project will likely not result in an adverse effect or incidental take[17] of NLEB habitat; therefore, a permit from USFWS is not required. On February 3, 2020, the Petitioner received a letter from the USFWS confirming compliance; as such, no further consultation with the USFWS respecting the Project is required. A full review of the *Endangered Species Act (ESA) Compliance*

[16] Listing under the federal Endangered Species Act

[17] The Endangered Species Act "Incidental take" is defined by as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

Determination is provided in Appendix C of Exhibit B entitled, *USFWS and NDDB Compliance Statement*.

D. Wetlands and Vernal Pools

On May 21, 2019, an APT Registered Soil Scientist conducted a field inspection and wetland delineation at the Site; said inspection revealed the presence of one (1) wetland, equipped with an interior perennial watercourse and vernal pool. The results of the field delineation are summarized below, and the respective locations of these resources are also depicted on Figure 2, *Existing Conditions Map*.

1. Identified Wetland(s)

Wetland 1 consists of a complex of bordering vegetated wetlands to Pecks Brook, an interior perennial watercourse, and two (2) manmade agricultural ponds. This stream/wetland system generally drains south—initially on the Ellington Parcel, and generally paralleling the open agricultural field—before turning slightly west onto the Site and draining into a relatively large farm pond located on the Property.

While the majority of this resource is comprised of bordering "edge" forest, it contains pockets of interior flooding that is dominated by emergent and scrub/shrub vegetation. The wetland's interior perennial watercourse is well-defined as a result of historic alteration and channelization to same. At the west end of the pond, a shallow earthen berm and farm road has resulted in impoundment of the stream flows.

A secondary farm pond has been formed in the northeastern extents of Wetland 1. Therein, it appears as though there is a partially clogged drop structure that conveys outlet flows from the pond; however, it is evident that during "peak flow" events, water drains west over the berm and across the farm road. A complex of "cryptic"-style vernal pool habitat was also observed interior to Wetland 1 on the adjacent Ellington Parcel.

2. Impact(s) to Wetlands

No direct impacts to wetlands or watercourses are anticipated in connection with the development of the Facility. The nearest construction activity to the identified wetland resources—consisting of fencing, solar modules, and stormwater features installation—is proposed to occur approximately 145 feet away from same. The *Wetlands Impacts Table* summarizes the respective Project proximity to the wetland resources identified on-Site.

Wetland Impacts		
Direct Impacts to Wetland 1 (ac.)	0	
Total Direct Impacts to Wetlands (ac.)	0	
Project Proximity to Wetlands (from limit of disturbance)	Distance (+/- ft.)	Direction (of wetland from LOD)
Project Proximity to Wetland 1	145	East

To further promote the protection of wetlands and watercourses during Project construction, and to avoid unintentional impacts to same, the Petitioner has proposed certain safeguards—including, *inter alia*, the development of a Project-specific protection plan, and the installation and maintenance of E&S controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control. See* Appendix D of Exhibit B entitled, *Resources Protection Plan*. By implementing these management techniques throughout the duration of Project construction, potential adverse impacts to the wetland resources identified on or within the vicinity of the Site will be greatly mitigated.

Potential, long-term, secondary impacts to wetland resources associated with the operation of this Facility will similarly be minimized by several factors. Accordingly, the Facility, once operational, will be unstaffed—as such, potential disturbance(s) resulting from vehicles, cars, and the like will be limited. In addition, the majority of the ground underlying the Facility's solar arrays will be treated with native grass/vegetation plantings—which, in turn, will provide ample opportunity for surface water to infiltrate or slow prior to its discharge to surrounding

resources. As such, it is unlikely that the Project will adversely impact the wetland resources identified on or within the vicinity of the Site.

3. Identified Vernal Pools

During the above-referenced field inspection, APT assessed Wetland 1 for indications of vernal pool resources; based on evidence of seasonally-flooded areas observed on that date, a formal vernal pool assessment was subsequently conducted.[18] Said assessment revealed the presence of a vernal pool, characterized as a large, cryptic pool embedded within an extensive wetland system that extends around the pool in all directions. The nearest edge of the vernal pool to the Project Area is approximately 515 feet to the east thereof.

Two (2) cover types are present within the pool: scrub-shrub and forested. The scrub-shrub habitat is located within the western portions of the pool in the maintained transmission line ROW. Its vegetation is dominated by buttonbush (*Cephalanthus occidentalis*), silky dogwood (*Cornus amomum*), highbush blueberry (*Vaccinium corymbosum*) and winterberry (*Ilex verticillata*). The eastern portions of the pool are forested, with a tree canopy dominated by pin oak (*Quercus palustris*), swamp white oak (*Quercus bicolor*), and red maple. The pool's hydrology appears to be semi-permanently flooded. The maximum observed depth was approximately two (2) feet.

To identify species richness and the abundance of indicator species within the vernal pool, a series of vernal pool surveys were conducted. Survey methods included: visual surveys to identify adults; larvae and egg masses; audial surveys to record breeding choruses; and, dip-net surveys to identify amphibian larvae.

The presence of two (2) vernal pool indicator species were subsequently confirmed: the spotted salamander (*Ambystoma maculatum*) and wood frog (*Lithobates sylvaticus*). A total of 53 spotted salamander egg masses and 127 wood frog egg masses were observed. While the

[18] The formal vernal pool assessment was conducted on March 22nd and April 10th of 2020.

spotted salamander egg masses were scattered throughout the pool, they occurred predominantly within the pool's forested portions (where two (2) concentrations of masses were observed). Wood frog egg masses were similarly scattered throughout the pool; however, they largely occurred within two (2) communal masses located within both the forested and scrub-shrub portions of the pool. Deposition of wood frog eggs occurred over several weeks as indicated by the variation in the development stage noted between egg mass clusters. Embryo mortality due to ice damage from the pool refreezing after egg deposition was also noted.

The potential presence of an additional vernal pool indicator species, the blue spotted salamander complex (*Ambystoma laterale*), was also considered.[19] Within eastern Connecticut, populations of these species are known to occur within Glacial Lake Hitchcock and Glacial Lake Ellington in the Scantic River Drainage Basin. The Property lies within the Scantic River Basin, and the subject vernal pool represents suitable breeding habitat for blue-spotted salamander complex. Although the Site is located outside of a glacial lakebed (roughly between the eastern limits of Glacial Lake Hitchcock and the western limits of Glacial Lake Ellington), new populations/occurrences of the blue-spotted salamander complex continue to be discovered in the State. Late winter trapping(s) of breeding adults is the primary survey method used for the blue-spotted salamander complex; however, that level of survey was deemed unwarranted/unnecessary for the Project, due to the Facility's distance from the vernal pool and the determined lack of Project-related habitat impacts/loss for the terrestrial *Ambystomid* salamander habitat.

With respect to the presence of vernal pool facultative species (or, other wetland-dependent species), the cold temperatures experienced during the subject survey period limited surficial activity. This is particularly true for reptiles—commonly known to remain largely

[19] The distribution of the blue-spotted salamander complex in Connecticut is strongly correlated with Pleistocene-era glacial lake deposits.

dormant and inactive during late March and early April.[20] The only other species noted were the painted turtle (*Chrysemys picta*) and the spring peeper (*Pseudacris crucifer*). An additional species that could potentially be present (based on suitable habitat) is the spotted turtle (*Clemmys guttata*); however, same was not observed by APT during the referenced visits.

4. Impacts to Vernal Pool(s)

Construction and subsequent operation of the Facility will not result in direct physical impact(s) to the identified vernal pool, nor the species that reside therein. It is widely documented that vernal pool-dependent amphibians are not solely reliant upon the actual vernal pool habitat for breeding (i.e., egg and larval development); they also, require surrounding upland forest habitat for most of their adult lives. Accepted studies recommend protection of adjacent habitat up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.[21]

Calhoun and Klemens (2002) Methodology[22] was used to evaluate potential impacts to the Site's vernal pools (and surrounding upland habitat). This methodology assesses vernal pool ecological significance on two (2) parameters: (1) biological value of the vernal pool, and (2) conditions of the critical terrestrial habitat. The biological rating/value is based on the presence of State-listed species and the abundance/diversity of vernal pool indicator species. The condition of the terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool's edge; "VPE") and the critical terrestrial habitat (within 100-750 feet of the pool's edge; "CTH").

To determine the existing and proposed quality of the terrestrial (non-breeding) habitat(s), the landscape condition of the identified vernal pool was evaluated. Pools with

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[20] During both visits, the temperature remained below average, ranging from the high 30s to low 40s. On the initial visit, a thin film ice was present in the pool.

[21] Calhoun, A.J.K. and M.W. Klemens. 2002. "Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States," WCS/MCA Technical Paper No. 5.

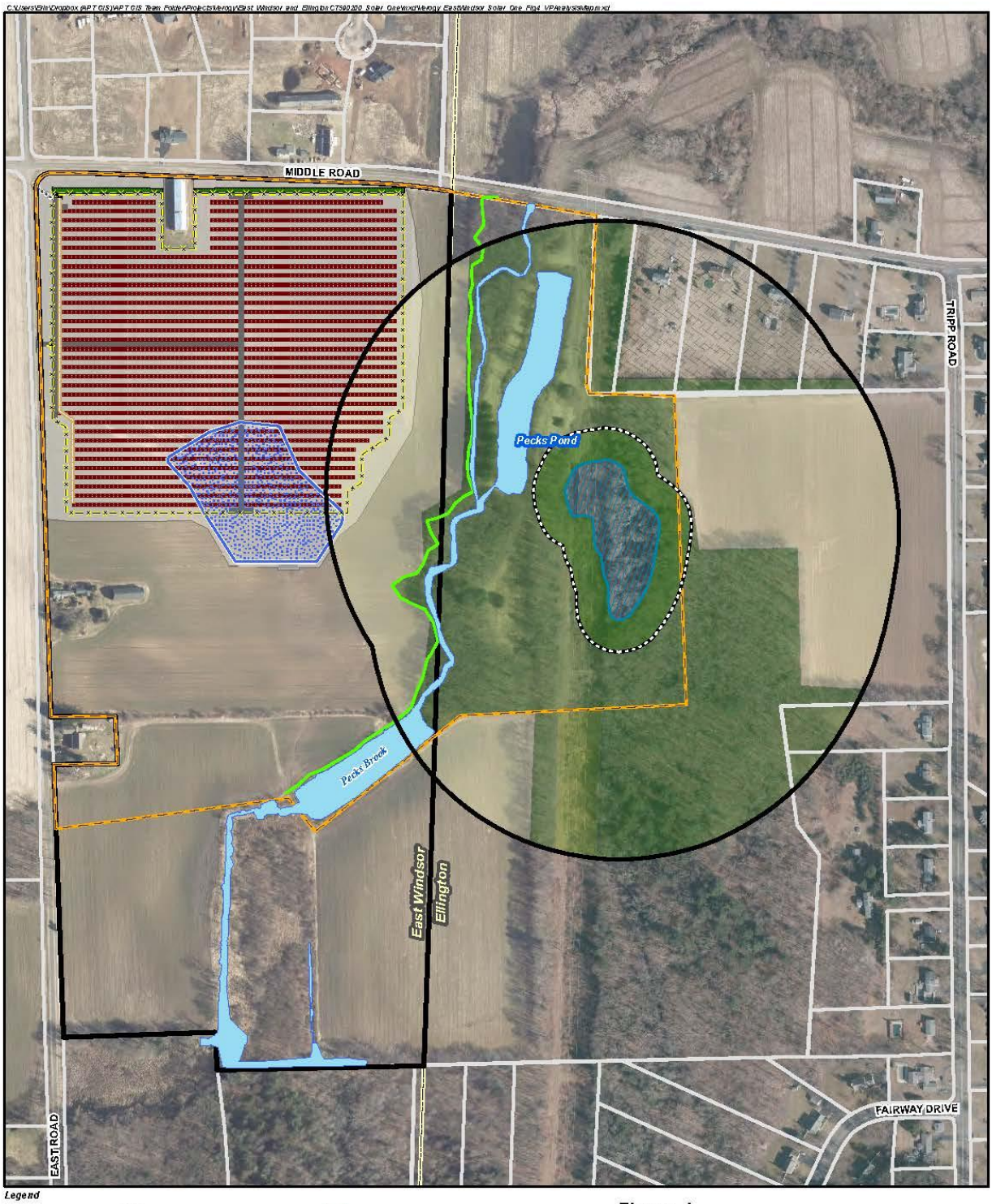
[22] *Ibid*.

twenty-five (25%) percent or less developed areas in the CTH are characterized as having "high priority" for maintaining this development percentage (including site clearing, grading, and construction). Based on the results of the landscape analysis, the existing area of development within the CTH of all three (3) vernal pools is less than the twenty-five (25%) percent threshold.

Importantly, the Project will not impact the VPE associated with the identified vernal pool. While the Project is expected to increase development within the CTH of the vernal pool, this increase in the developed condition will not exceed the twenty-five percent (25%) conservation threshold. Further, because the proposed Project development will occur entirely within sub-optimal Agricultural Field habitat, which will be converted and established with grassland/open field species by the Petitioner, similar or improved cover habitat will be available for migratory herpetofauna. Accordingly, because anticipated Project-related impacts within the CTH will occur entirely within sub-optimal habitat and will not result in exceeding the twenty-five percent (25%), the Project will likely not result in an adverse impact to this vernal pool.

Although of minimal concern (because of the Project's distance and sub-optimal habitat of the agricultural field that comprises the Project Area), potential, short-term impacts to the herpetofauna associated with nearby vernal pool habitats are possible, should migrating individuals enter the Project Area during construction. Any short-term impacts associated with the proposed development within the vernal pool's CTH, however, will be minimized/avoided by proper installation and maintenance of the proposed E&S controls, as well as the implementation of the proposed *Resource Protection Plan* provided in *Appendix D of Exhibit B*.

Results of the vernal pool impact analysis are graphically depicted in Figure 4*, Vernal Pool Analysis Map*. A table summarizing the impact analysis, comparing existing conditions and proposed impact calculations within the CTH is also provided below in the *Vernal Pool Impact Analysis Table*.



Legend

- Parcel Boundary
- Municipal Boundary
- Site
- StudyArea
- Limit of Disturbance
- 100' Vernal Pool Envelope (VPE)
- 100'-750' Critical Terrestrial Habitat (CTH)
- Vernal Pool
- Delineated Wetland Boundary
- Waterbody/Watercourse
- Landscape Screening
- Interconnection Pole
- Solar Modules
- Conc. Equipment Pad
- Gravel Access Road
- Stormwater Basin
- Stormwater Overflow Gravel
- Perimeter Fence
- Interconnection Path

Habitat Cover Type

- Agricultural Field
- Developed
- Early Successional
- Forested
- Open Water

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 400 feet
Map Date: June 2020

400 200 0 400 Feet

N W E S

Figure 4
Vernal Pool Analysis Map
Proposed Solar Facility - East Windsor Solar One
341 East Road
East Windsor, Connecticut

East Windsor Solar One, LLC

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Vernal Pool Impact Analysis Table		
Vernal Pool Area: +/- 1.88 ac.		
Total Vernal Pool Envelope (VPE) Area: +/- 3.66 ac. Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: +/-58.5 ac. Project Area Within CTH Area: +/- 2.88 ac.		
Existing VPE Areas: (+/- ac.) (no proposed habitat changes to VPE Areas)		
Forested	3.66	100%
Existing CTH Areas: (+/- ac.)		
Agricultural Field	20.9	36%
Developed	5.4	9%
Early Successional	1.4	2%
Forested	28.5	49%
Open Water	2.3	4%
Proposed CTH Areas: (+/- ac.)		
Agricultural Field	18.0	31%
Developed	8.3	14%
Early Successional	1.4	2%
Forested	28.5	49%
Open Water	2.3	4%

E. Water Resources and Stormwater Management

1. Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") for both the Study Area and the Project Area. By way of background, a FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The majority of the Study Area, and the entirety of the Project Area, is depicted on FIRM PANEL #09003C 0245 F, dated September 26, 2008; the eastern extent of the Study Area is depicted on FIRM PANEL #0901580015C, dated February 5, 1997.

Based upon the reviewed FIRM Mapping, the Project Area is located in an area designated as "Zone X," which is characterized as an area of "minimal flooding." Importantly, the Project Area is not located within a 100- and 500-year flood zone; consequently, no special considerations or precautions relative to flooding are required for the Project.

2. Groundwater

CTDEEP has classified the groundwater underlying the Study Area as "GA".[23] This classification indicates that the groundwater within the Study Area is presumed to be suitable for human consumption without treatment.

Based upon a review of available CTDEEP mapping, the Study Area is not located within a CTDEEP-classified Aquifer Protection Area ("APA"). The closest CTDEEP-classified APA is the "Hunt A 42" APA, which is located approximately 1.25 miles west of the Study Area.

Accordingly, the Project is not anticipated to have an adverse environmental effect on ground water quality.

3. Surface Water

According to applicable CTDEEP mapping, the Study Area is located in Major Drainage Basin 4 (Connecticut River), Regional Drainage Basin 42 (Scantic River), Subregional Drainage Basin 4207 (Ketch Brook), and Local Drainage Basin 4207-01 (Pecks Brook at the mouth above Ketch Brook).

Pecks Brook traverses the eastern and southern portions of the Study Area; it is located approximately 150 feet downgradient from the nearest portion of the Project Area. Pecks Brook is classified by the CTDEEP as a "Class A" surface waterbody. Designated uses for "Class A" surface waterbodies include: habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and, water supply for industry and agriculture.

[23] Designated uses in GA classified areas include existing private and potential public or private supplies of drinking water and base flow or hydraulically connected surface water bodies.

The Project will have no adverse effect on surface water quality. Accordingly, sufficient setbacks have been established between the Project and the identified water resources. In addition, E&S controls will be installed and maintained during Project construction in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Lastly, once the Facility is operative, stormwater will be managed in accordance with the *2004 Connecticut Stormwater Quality Manual*. Collectively, these measures ensure that the Project, including the construction thereof, will not impact the quality of surface water.

4. Stormwater Management

As detailed below, stormwater management for the Project has been designed to meet and/or exceed applicable regulation(s) and guidance, including the *2004 Connecticut Stormwater Quality* Manual and the current (January 8, 2020) iteration of the CTDEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects*.

Accordingly, while *Appendix I* requires a reduction of on-site soils Hydrologic Soil Group class by one (1) step, the proposed change to the Project Area's cover—i.e., from agricultural to meadow—exceeds such requirement, resulting in a further offset of any potential increase in stormwater runoff. In addition, the Project contemplates the use of a grass-lined infiltration basin to treat any increase in the water quality volume associated with the gravel access roads. *See* Figure 3, *Proposed Conditions Map.*

Moreover, the portions of the Project Area that will be disturbed during construction will be stabilized with a low growth seed mix, New England semi-shade grass and forbs mix (or equivalent). To further safeguard water resources from potential impacts during construction, the Petitioner is committed to implementing protective measures in the form of a Stormwater Pollution Control Plan ("SWPCP"), which will be finalized and submitted to the Council, pending approval by the CTDEEP Stormwater Management Division. The SWPCP will include monitoring of established E&S controls that will be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. The Petitioner will also apply for a

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from the CTDEEP.

Therefore, with the incorporation of these protective measures, stormwater runoff from the Project will not result in an adverse impact to the water quality associated with nearby surface water bodies. For additional details regarding stormwater management, please refer to the Stormwater Management Report, attached hereto as Exhibit D.

F. Air Quality

Presently, the Site is undeveloped—as such, no air emissions are currently being generated thereon. Respecting the anticipated Project-related impact(s) to air quality, as a solar energy generating facility, the Project will not emit any harmful byproducts during operation. In fact, once operational, the Project will generate 9,362 MWh/year—which is enough renewable energy to power 1,154 homes for an entire year and offset 6,620 metric tons of carbon dioxide annually, the same amount as 109,469 tree seedlings grown for ten (10) years, or 16,186,669 miles driven by an average passenger vehicle. As such, the Project will have no adverse effect(s) on air quality, and actually will act to improve same.

That said, however, the Petitioner does anticipate that some temporary, construction-related mobile source emissions may result from the construction of the Project (e.g., those associated with construction vehicles and equipment). Any potential air quality impacts associated with said construction activities, however, would arguably be *de minimis*. Nonetheless, the Petitioner is committed to ensuring that same will be mitigated through the implementation of the following measures:

- Limiting the idling time(s) of construction equipment;
- The proper maintenance of all on-Site vehicles and equipment; and,
- Watering/spraying equipment to minimize dust and particulate releases.

In addition, the Petitioner will ensure that all on-Site and off-road equipment will meet the latest standards for diesel emissions, as prescribed by the United States Environmental

Protection Agency. The Petitioner also notes that once the Project becomes operative, it will be unstaffed and monitored remotely. As such, throughout the Project's life, the Site will only receive minimal traffic (and correspondingly, minimal pollution caused thereby).

G. Historic and Archaeological Resources

Heritage Consultants LLC ("Heritage Consultants") of Newington, Connecticut, reviewed relevant historic and archaeological information to determine whether the Project Site holds potential cultural resource significance (the "Phase 1A Cultural Resources Assessment Survey"). Their review of historic maps and aerial images of the Site, examination of files maintained by the Connecticut State Historic Preservation Office ("SHPO"), and a pedestrian survey of the Site, revealed that there are no properties or historic standing structures listed, or eligible for listing, on the National Register of Historic Places ("NRHP") located on and/or proximate to the Site.

In terms of archaeological potential, the proposed Project Site is situated in proximity to Pecks Brook and is located in an area that is characterized by low slopes and well-drained soils. Consequently, Heritage Consultants determined that a majority of the Project Area has the potential to contain intact archaeological deposits in the subsoil, and to that end, performed a Phase 1B Cultural Resources Reconnaissance Survey in May of 2020 (the "Phase 1B").

Fieldwork associated with the Phase 1B included the excavation of 112 shovel tests across the Project Area; said survey resulted in the excavation of two (2) shovel tests that yielded several artifacts. Subsequently, however, it was determined that the discovered materials lacked research potential and the "qualities of significance."[24] As such, no additional testing prior to construction of the proposed Project is required.

Importantly, in May of 2020, Heritage Consultants submitted relevant Project/Site information, including copies of the Phase 1A and 1B Surveys, to the SHPO for agency review and

[24] As such term is defined by the NRHP criteria for evaluation. *See* 36 CFR 60.4 [a-d].

comment. Thereafter, on June 2, 2020, the SHPO responded to Heritage Consultants' submission, indicating that it concurred with the findings contained therein, and that "…additional archeological investigations of the project areas are not warranted and that no historic properties will be affected…" by the contemplated Project activities.

Copies of the Phase 1A/1B Cultural Resources Reconnaissance Survey Report(s) and SHPO's response to same are included herein under Appendix E of Exhibit B, under the title: *SHPO Correspondence and Cultural Resources Reconnaissance Survey Report.*

H. Scenic and Recreational Areas

No state- or locally -designated scenic roads or recreational areas will be physically or visually impacted by development of the Project, as none of same are located in close proximity to the proposed Site. The nearest recreational area is the Ellington Ridge Country Club located immediately east of the Property. Please refer to Figure 5, *Surrounding Features Map,* for a visual representation of the resources located within one (1) mile of the Site.

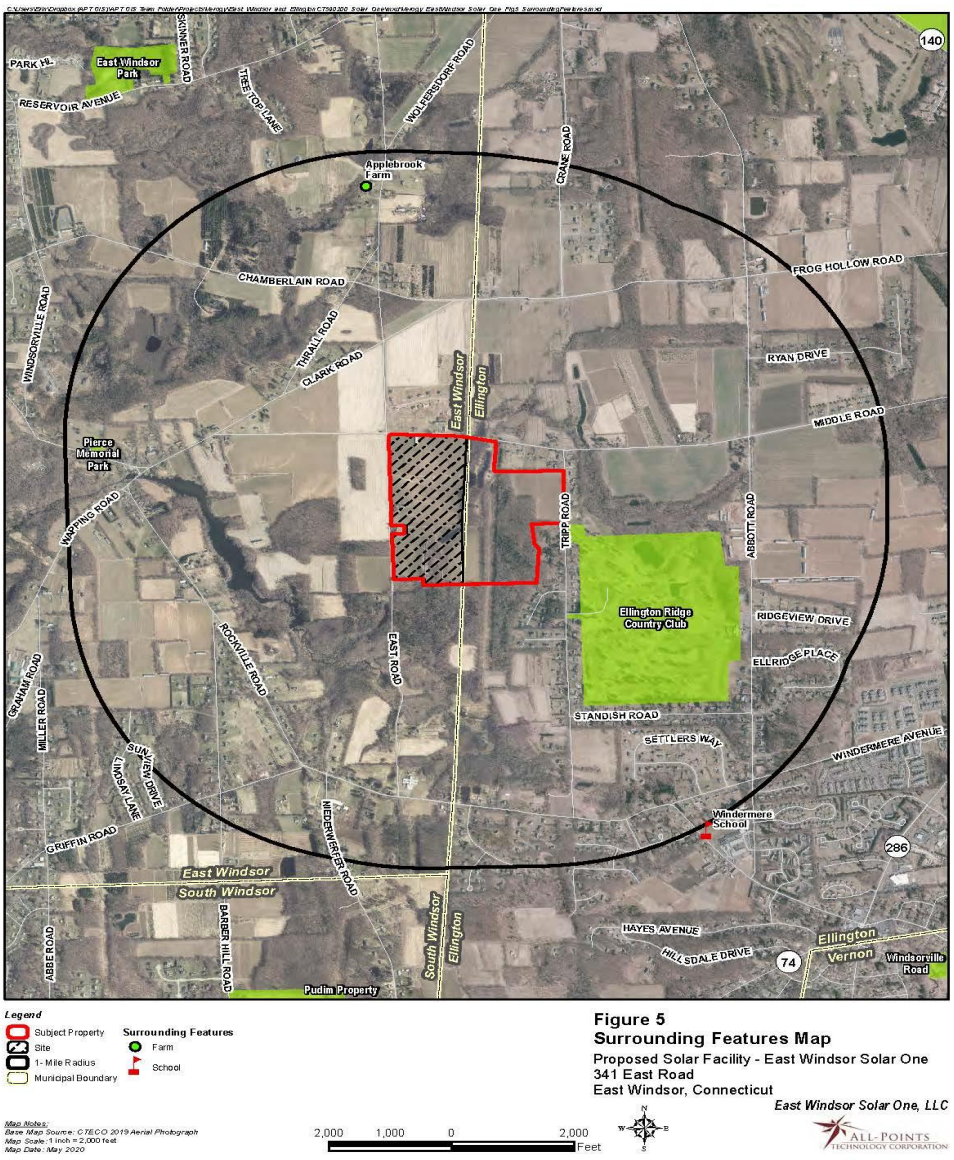

Figure 5
Surrounding Features Map
Proposed Solar Facility - East Windsor Solar One
341 East Road
East Windsor, Connecticut
East Windsor Solar One, LLC

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I. Noise

With the exception of the existing farmhouse and farm buildings, the majority of the Project Site is undeveloped. Accordingly, aside from the noise associated with periodic farming activities conducted thereon, no unusual noise sources presently exist at the Site.

Regarding the anticipated Project impact(s) to same, during development of the Facility, there will likely be a temporary increase in noise resulting from the construction equipment used in connection therewith. In general, the highest noise level from this type of equipment (e.g., backhoe, bulldozer, crane, trucks, etc.) is approximately 88 dBA at the source. That said, however,

construction noise is exempted under Section 8(b) of the Town of East Windsor's Noise Control Ordinance.

Once the Facility is operational, noise from the Project will be minimal and meet applicable East Windsor noise standards.[25] As previously indicated herein, the Facility is located within East Windsor's Residential (R3) Zone. Conservatively, the Facility would be considered an "Industrial noise emitter to Residential receptors." As such, it would be subject to noise limits of 58 dBA during the day and 48 dBA at night.

The only noise generating equipment proposed for the Facility are the inverters and transformers. Based on the most conservative estimates (provided by specified equipment manufacturers), the loudest piece of Project equipment would be the 2,000 kVA transformer, which will generate a maximum sound level of approximately 68 dBA, measured from one (1)-foot away. Sound reduces with distance, however, and the transformers are inactive at night.

The closest property line relative to the nearest piece of noise generating equipment (i.e., the transformer) is 309 East Road—a residentially (R3)- developed parcel that is located approximately 125 feet to the north thereof. APT applied the Inverse Square Law[26] to evaluate the relative sound level of the largest transformer to this property line. Based on these calculations, APT determined that the nearby receptors are of sufficient distance(s) from the proposed Project-related equipment, and noise levels during Facility operation will be below 55 dBA at the surrounding property line(s). For more information regarding same, please refer to the transformer and inverter specification sheet provided in Appendix F of Exhibit B, *Product Information Sheets*.

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[25] Noise standards applicable to Residential Daytime/Nighttime Zones. *See* Town of East Windsor's Noise Control Ordinance Section 5.4 – Noise Levels – Receptor's Zone.

[26] Inverse Square Law states that *the intensity of a force is inversely proportional to the square of the distance from that force*. With respect to sound, this means that any a noise will have a drastic drop-off in volume as it moves away from the source and then shallows out.

J. Lighting

Presently, the Site is undeveloped—as such, no light sources currently exist thereon. No exterior lighting is planned for the Facility. While there will be some small, non-intrusive lighting fixtures within the equipment to aid in Project maintenance, the Petitioner does not anticipate that this will adversely affect nearby residences and/or surroundings.

K. FAA Determination

APT submitted relevant Project information to the Federal Aviation Administration ("FAA") for an aeronautical study to evaluate potential hazards to air navigation. On May 18, 2020, the FAA provided APT with a *Determination of No Hazard to Air Navigation*. *See* Appendix F of Exhibit B, *FAA Determination*. Based on this determination, there is no need to conduct a glare analysis for the Project.

L. Visibility Evaluation

Portions of the Facility will likely be seen from the areas immediately surrounding the Site to the north and west, with the majority of views of the Facility occurring from locations within approximately 0.4 mile of the Site. Views from residentially-developed parcels (directly to the north, along Middle Road), of the Site will, however, be minimized by the use of privacy slats in the fencing, as well as the establishment of an intervening row of arborvitae. Properties to the west of the Site are generally undeveloped, and as such, should not be visually impacted by the Project. Views to the east would be minimized by a combination of the Facility's relatively low height and the presence of intervening vegetation.

Please refer to the Environmental Assessment prepared by APT, which is included as Exhibit B, for more information on the visibility evaluation(s) conducted for the Project. In addition, please refer to Appendix H of Exhibit B, *Viewshed Map* and *Photo-simulations,* for the viewshed analysis map that was developed for the Project, as well as Representative photo-simulations.

VI. Conclusion

As demonstrated by the foregoing, the Project satisfies the standards set forth in C.G.S. § 16-50k(a); specifically, the Project will comply with the CTDEEP air and water quality standards, will not have an undue adverse effect on the existing environment and ecology, and will not affect the scenic, historic, and recreational resources located within the vicinity of the Project Site. Because the Project satisfies the requisite standards, and in light of the numerous benefits this Project will provide to the State of Connecticut and the Town of East Windsor, East Windsor Solar One, LLC respectfully requests that the Siting Council approve this Petition for the Project, as it is currently designed.

Respectfully Submitted,

East Windsor Solar One, LLC

The Petitioner