Petition of Bristol 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 3.25 +/- MW AC Solar Photovoltaic Electric Generating Facility Located at 399 Hill Street, Bristol, Connecticut

Prepared for the Connecticut Siting Council

Bristol Solar One, LLC

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July 20 , 2020

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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.*, Bristol Solar One, LLC (the "Petitioner"; or "Bristol Solar One") respectfully requests that the Connecticut Siting Council (the "Council") approve, by declaratory ruling, the Petitioner's proposed installation and development of a 3.25 +/- megawatt (MW) solar-based electric generating facility (the "Project") located at 399 Hill Street, Bristol, Connecticut (the "Project Site"; or the "Site").

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

> *Notwithstanding the provisions of this chapter or title 16a, 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 Conn. Gen. Stat. § 16-50k(a), the Petitioner respectfully requests that the Council approve this Project by declaratory ruling. As demonstrated by the information included herein, the proposed Project will result in no air emissions, has been designed to minimize natural resource impact(s), and complies with the applicable air and water quality standards of the CTDEEP. In addition, the Project will not have a substantial adverse environmental effect in the State of Connecticut, and will help support the State's ambitious clean, renewable energy goals.

B. Project Overview/Key Project Elements

The Project was selected and awarded a 15-year contract to participate in the State'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

[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.

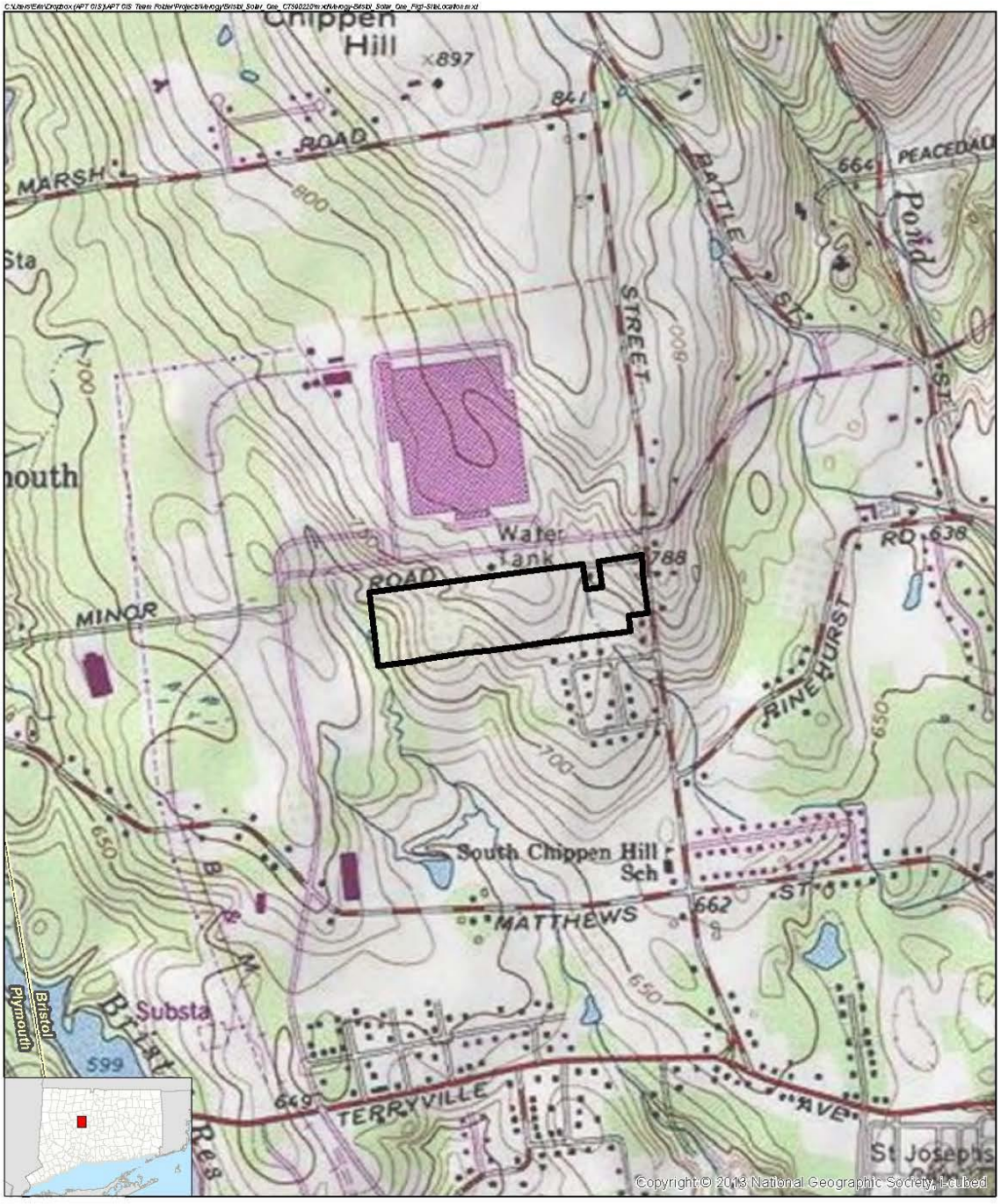
standards and Governor Lamont's aggressive GHG reduction goals.[2] Energy produced by the Project will be sold to Eversource at market rates specified in the applicable utility tariff with Eversource for any self-generation facility. Alternatively, in the event that virtual net metering capacity becomes 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 399 Hill Street, in Bristol, Connecticut (the "Site" or "Project Site"). The Site is a roughly rectangularly shaped parcel that consists of approximately 26.9 acres. The Site is mostly undeveloped agricultural land, with a farmhouse and several farm buildings located within the northeast corner of the parcel. A small portion of the western extent of the Site is wooded. The Site is privately-owned and zoned Residential (R-25).

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

[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.



Legend

Site

Figure 1
Site Location Map

Proposed Solar Facility - Bristol Solar One
399 Hill Street
Bristol, Connecticut

Bristol Solar One, LLC

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps: Bristol (1984), CT
Map Scale: 1 inch = 1,000 feet
Map Date: March 2020

1,000 500 0 1,000 Feet

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2. Electrical Connection

The Project's proposed electrical interconnection will be to an existing distribution pole located along the Eversource right-of-way near the proposed entrance to the Site and will follow an extended gravel access road from Minor Street. 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 keeping members of the Bristol community informed about the Project and has been proactive in fostering positive relations with same. By way of example, the Petitioner has:

1. Developed a Project Fact Sheet, included hereto in Appendix A, that contains pertinent Project information, including, *inter alia*, a proposed Project calendar/schedule, expected Project benefits, and information regarding the Petitioner and its respective business operations. The Petitioner has distributed the Fact Sheet to the nearby residences of the Project Site;
2. Created a Project-specific website, accessible at, www.verogy.com/bristol-solar-one. Therein, interested stakeholders can learn more about the Project, and can submit Project-related inquiries and comments directly to the Petitioner;
3. Engaged in regular discussions with local officials and residents about the Project; and
4. Notified all abutters of this pending Siting Council Petition via certified mail on May 26, 2020. A copy of the abutters' list is also included in Appendix A.

Further, while local land use requirements do not apply to the Project, the Petitioner has, designed the Project to meet, to the extent feasible, the intent of the City's land use regulations, including Bristol's 2018 Plan of Conservation and Development.[3]

[3] Importantly, the Project also complies with Section 4.3.3 (3) of the City's 2018 Plan of Conservation and Development which seeks to" *…encourage energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation…."*

II. Legal Name and Address of Petitioner and Contact Information

The legal name of the Petitioner is Bristol Solar One, LLC ("Bristol Solar One"). Bristol Solar One is a Connecticut limited liability company with its principal place of business in Hartford, Connecticut. Bristol Solar One is in 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.

Mailing Address: Bristol Solar One, LLC
150 Trumbull Street, 4th Floor
Hartford, CT 06103

Internet Address(es): https://www.verogy.com/
www.verogy.com/bristol-solar-one

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 proposed Project Site is located at 399 Hill Street, Bristol, Connecticut, and encompasses approximately 26.9 acres. The Site's existing topography drops gently from north to south, with ground elevations ranging from approximately 809 feet AMSL in the north to 673 feet AMSL to the south.

The Facility will occupy approximately thirteen (13) acres of the Site, with an additional ± 5.90 acres of disturbance beyond the fenced Facility limits, for a total of ± 18.90 acres (the "Project Area"). The Project Area will be situated primarily within an existing agricultural field present on the Site; however, a small portion of the western extent of the Project Area lies within a wooded area. While no wetlands are located within the area proposed for development, two (2) wetlands are located in the western and southcentral portions of the Site, respectively, with one (1) additional wetland located off-site to the north. Additionally, two (2) intermittent water courses ("IWC") are present within the Site: one (1) transects the eastern portion of the Site, flowing north to south from the off-Site wetland, while the other flows in a westerly direction in the northwest corner of the Site. Figure 2, *Existing Conditions Map*, depicts current conditions on the Site.

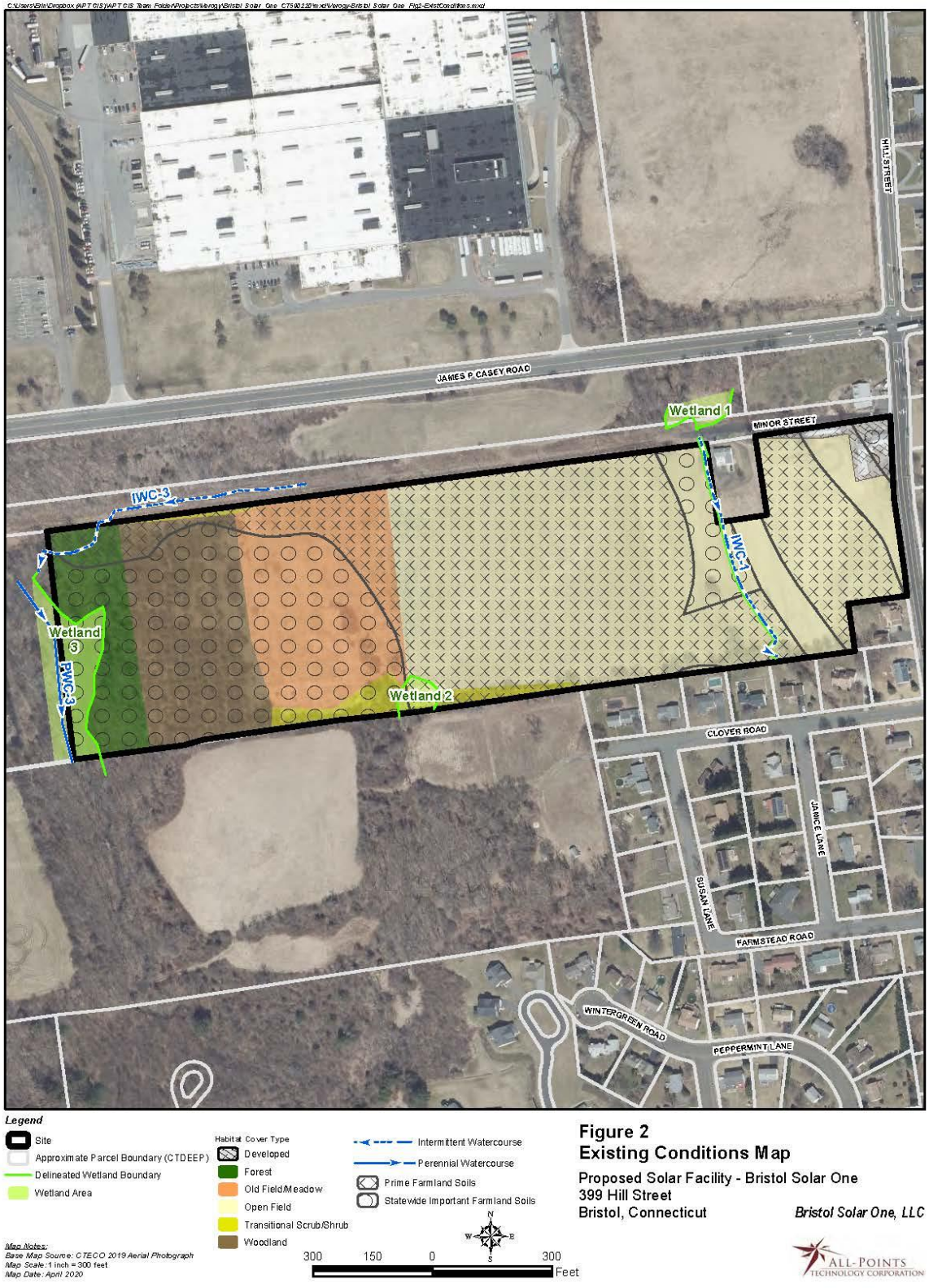

Figure 2
Existing Conditions Map

Proposed Solar Facility - Bristol Solar One
399 Hill Street
Bristol, Connecticut

Bristol Solar One, LLC

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The surrounding land use of the Site is characterized by residential and commercial development—with U.S. Route 6 located to the south, and CT Route 72 to the east, of the Project Site. Undeveloped land becomes more prevalent farther to the northeast of the Site, while more dense urban development becomes more predominant to the east and southeast. More detail can be found in the *Remote Field Review*, which is attached as Appendix B.

The subject Site was selected due to the limited impact(s) the development of the Project will have on the existing environment. More specifically, the Facility itself will (i) be located on land that is pre-cleared; (ii) will result in no impact to core forest or wetlands; and (iii) is in close proximity to Eversource's existing electrical infrastructure. Collectively, these factors minimize the amount of tree-clearing, and grading activities that would otherwise be required for the Project's installation.

Lastly, the Petitioner notes that, while the Project Site contains approximately twenty-eight (28) acres, the Project Area will encompass only +/- 16.5 acres; in turn, this leaves approximately 30% of the parcel undeveloped and available for other uses, such as, agriculture (which Petitioner understands the site owner will continue to undertake) and open space for wildlife.

B. Proposed Project Description

The Project consists of the installation of over 11,000 photovoltaic modules, and associated ground equipment, and three (3) interconnection points. It is anticipated that the Project will have a useful life of thirty-five (35) years. Additional information, including proposed Development Drawings, are provided in Appendix C, *Environmental Assessment and Project Plans*.

1. Solar Panels and Related Ground Equipment

As currently designed,[4] the solar energy generating facility (the "Facility") will consist of approximately 9,386 Trina TSM-DEG15MC.20(II) 400W and 1,872 Risen RSM144-6-380BMDG 380W photovoltaic modules ("panels"); twenty-six (26) Solectria Solar's XGI 1500 inverters; two (2) pad mounted

[4] All materials discussed in this section are indicative of the materials that will be used on the project. The specific brands and configurations of materials will be finalized based on product availability and cost, if the Project is approved by the Council.

switchgears; three (3) transformers;[5] and three (3) service interconnection points. A fixed, ground-mounted racking system will be used to secure the panel arrays. The Facility will be enclosed by a six (6)-foot tall chain-link security fence.

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 snow to "sheet" off. Any production degradation due to snow build-up has already been modeled into the annual system output and performance calculations.

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 north, utilizing an existing gravel road (Minor Street), which originates off of Hill Street and abuts the Site to the north.

Approximately 450 feet of Minor Street will need to be improved to access the Project Area. A new ± 450-foot gravel road will also be constructed to provide access into the Project Area for construction, service, and maintenance vehicles. Both the improvements to Minor Street and the new access road will require minimal grading and will consist primarily of gravel resurfacing. There are no existing interior roads within the boundaries of the Project Area. *See* Figure 3, *Proposed Conditions Map.*

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

Legend

- Site
- Approximate Parcel Boundary (CTDEEP)
- Limit of Disturbance
- Perennial Watercourse
- Intermittent Watercourse
- Delineated Wetland Boundary
- Wetland Area
- Solar Modules
- Concrete Equipment Pad
- Stormwater Basin
- Gravel Access Road
- Stormwater Swale
- Perimeter Fence

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 300 feet
Map Date: April 2020

300 150 0 300 Feet

Figure 3
Proposed Conditions Map

Proposed Solar Facility - Bristol Solar One
399 Hill Street
Bristol, Connecticut

Bristol Solar One, LLC

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4. Interconnection

The Project's proposed electrical interconnection will be to an existing distribution pole located along the Eversource right-of-way near the proposed entrance to the Site and will follow an extended gravel access road from Minor Street. 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

Construction activities within the Project Area will include tree clearing, grading, incorporating stormwater best management practices, installing erosion and sedimentation ("E&S") control measures, grass berm construction, racking and module installation, electrical trenching, landscape screening installation, and new access road development. Tree clearing beyond the fenced area will be required to facilitate construction of the Project. Existing grades throughout the Project Area will remain—except in areas of the stormwater management/E&S features and the grass berms, which will require some manipulation (cuts/fills) and regrading. The Petitioner's preliminary construction plans are as follows:

PHASE 1

1. Remove existing impediments as necessary and perform minimal clearing and grubbing on-site to install the required construction entrance(s).

2. Clear (only as needed) to install the perimeter erosion and sediment control measures; if applicable, implement tree protection measures and ensure all wetland areas are protected before major construction begins on-site.

3. Install perimeter erosion control(s).

4. Install erosion control(s) below proposed equipment area(s) and install concrete equipment pads and conduits that are protected by these controls.

5. Install Temporary Sediment Basin Nos. 1A, 1B, 2 and 3, and associated swales.

PHASE 2:

6. Upon completion of the installation of the Temporary Sediment Basins (mentioned above), clear and grub the remaining area above the basin(s) area(s). Wood and other debris removal.

7. Temporarily seed disturbed areas not under construction for minimum of thirty (30) days.

8. Install remaining electrical conduit.

9. Install racking posts for ground-mounted solar panels.

10. Install ground-mounted solar panels and complete electrical installation.

11. After substantial completion of the installation of the solar panels, complete remaining site work, including any required landscape screening, and stabilize all disturbed areas.

12. Fine grade, rake, seed, and mulch all remaining disturbed areas on-site.

13. After the Project Site is stabilized, and upon receipt of necessary regulatory/local approvals, remove perimeter E&S controls.

6. Project Maintenance

Required maintenance of the Project will be minimal. It is anticipated that the Facility will require routine mechanical and electrical maintenance one (1) time per year. Technicians will conduct visual ground inspections once a month. The majority of vegetative maintenance will be handled through the grazing of sheep, which will be on-site from April/May through October/November of each year. Any other vegetative maintenance would take place three (3) times per year. Annual maintenance will typically involve two (2) technicians for a day. Repairs to the Facility will be made on an as-needed basis.

Further, the Petitioner does not anticipate that any snow-removal operations will be necessary for the Project. As mentioned above, the Facility's panels have been positioned in such a way that any accumulating snow will be able to "sheet" off of same—thereby negating the need for snow removal.

7. Project Decommissioning

In accordance with the terms of the Petitioner's lease with the subject landowner, at the end of the Project's lifespan, the Petitioner will fully decommission and remove the Project from the Site. Once such clearing and removal activities have been completed, the Petitioner will restore the Site to its original condition as nearly as possible.

IV. Project Benefits

As a Class I Renewable Energy Source, the Project will not only help foster the State's goal of developing "renewable energy resources, such as solar and wind energy, to the maximum practicable

extent,"[6] but will also further the goals set forth in Governor Lamont's September 2019 Executive Order No. 3 which provides for a zero-carbon-target for the electricity generation sector by 2040. The Project will also provide a host of environmental and economic benefits to the State of Connecticut and the City of Bristol, including, but not limited to:

- The Project will generate the majority of its power during the summer electrical peak, thereby providing peaking resources when the State has its greatest need for same. *See* Conn. Gen. Stat. § 16-50p(c)(1) (a project provides a public benefit if it is deemed "necessary for the reliability of the electric power supply of the state or for a competitive market for electricity");
- The above-referenced reduction in energy demand during peak usage will, in turn, decrease energy costs for ratepayers statewide;
- New annual municipal tax revenues will flow to the City of Bristol with no additional burden on City services;
- Infrastructure upgrades will improve the reliability of Bristol's electrical grid;
- The creation of nineteen (19) construction jobs and two (2) new full-time jobs in the region;
- Energy generation without any water consumption or pollution;
- Energy generation without any air emissions, including emissions of harmful greenhouse gas;
- The Project, once operational, will offset the equivalent of 4,201 metric tons of CO2 annually—the same amount as 69,468 tree seedlings grown for ten (10) years or 908 cars being taken off the road annually;
- The Project's 3.25 MW system will generate enough electricity to power 733 average homes for a year; and
- The Project is designed to have minimal environmental impacts with no disruption to wetland or core forest habitats.

Accordingly, the Project offers a multitude of economic, environmental, and societal benefits to the City of Bristol and the State of Connecticut.

[6] Conn. Gen. Stat. § 16a-35k.

V. Potential Environmental Effects

The Petitioner takes its commitment to sustainability and the environment very seriously; and the Petitioner has been working with—and will continue to work with—its respective environmental engineers, consultants, and other stakeholders to ensure that the Project's environmental impacts are as limited as possible. With that being said, the Project has been designed to avoid or minimize impact(s) to the existing environment, wildlife, and habitat; and, in accordance with Conn. Gen. Stat. § 16-50g, will not have an adverse effect on scenic, historical, or recreational values.

A. Public Health and Safety

Regarding public health, as a Class I Renewable Energy Source, Bristol Solar One represents a clean and safe method of electricity generation in the State. The Project will generate electricity without emitting harmful pollutants or consuming any raw materials. Indeed, once operational, the Project will offset the equivalent of 4,201 metric tons of CO2 annually—the same amount as 69,468 tree seedlings grown for ten (10) years or 908 cars being taken off the road annually.

In terms of safety, the Project will meet or exceed applicable local, state, national and industry health and safety standards and requirements related to electric power generation, including the National Electrical Safety Code ("NESC"), and those codes and standards promulgated by the National Fire Protection Association ("NFPA"). Collectively, these provisions govern the safe installation and maintenance of electrical systems, including alternations, repairs, replacement(s), equipment, appliances, fixtures, fittings, and appurtenances thereto.

Moreover, the Facility will be enclosed by a six (6)-foot tall chain-link fence, and three (3) secondary gates will be installed along the western and southern fence lines to provide access for maintenance of stormwater management basins. The main entrance to the Facility will be gated, limiting access solely to authorized personnel. All City emergency response personnel will be provided access via a Knox Pad lock. The system will be remotely monitored and will have the ability to remotely de-energize in the event of a fault or other power outage event and/or emergency.

In sum, the Project will meet or exceed all applicable health and safety requirements relating to electric power generation.

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

The Project is consistent with all applicable local and federal policies and will support the State's energy goals by developing a renewable energy resource that will not have a substantial adverse environmental effect. In addition, the Project will benefit the local community by improving electrical service for existing and future development in the City of Bristol through the availability of enhanced local generating capacity that does not rely on the congested regional electrical transmission networks.

Although local land use requirements do not apply to the Project, it has, to the extent(s) feasible, been designed to meet the intent of the City's land use regulations and its Plan of Conservation and Development. *See* City of Bristol 2018 Plan of Conservation and Development (Section 4.3.3(3) "*…encourage energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation….*").

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

1. Habitats

The attached Environmental Assessment ("EA"), prepared by All-Points Technology Corporation, P.C ("APT"), describes, in detail, the existing habitat at the Property. *See* Appendix C. The EA indicates that six (6) habitat types (vegetative communities) are present on the Site: Forested, Woodland, Old Field/Meadow, Open Field, Transitional Scrub/Shrub, and Developed. As the following demonstrates, the Project's expected impacts to same are minimal.

Forested

Forested habitat, located in the far western extent of the Project Site, is generally composed of a complex of upland and wetland forested habitats. Collectively, this habitat type accounts for 2.44 acres of the Site.

Upland forest on the Site is dominated by red maple (*Acer rubrum*), multiflora rose (*Rosa multiflora*), honeysuckle (*Lonicera morowii*), silky dogwood (*Cornus amomum*), and Asiatic bittersweet (*Celastrus orbiculatus*). This habitat largely consists of even-aged forest with diameters ranging from 12 to 16 inches. The canopy is generally closed with pockets of openings that consist of a denser scrub/shrub understory.

Project development will include the clearing of mature vegetation along the eastern extent of the existing "edge" upland forest habitat to avoid shading of the Facility. The effect of this clearing, however, will have only a marginal impact. Therefore, the Project is not expected to result in a significant negative impact to the Forested Habitat present on-site.

Woodland

This habitat type is located in the western portion of the parcel—immediately east of the Forested uplands (discussed above)—and occupies approximately 3.82 acres of the Site. This area consists of lightly forested habitat, with less than fifty (50%) percent canopy closure and a dense understory. The woodland habitat represents a transitional zone between early succession/old field and more mature forested habitats. Due to a dominance of understory invasive species, however, native understory reinitiating has been stunted. Mature trees were observed, with diameters ranging from eight (8) to sixteen (16) inches.

Dominant plants in the understory include the invasive, non-native, species multiflora rose, Japanese barberry (*Berberis thunbergii*), and honeysuckle. Dominant species in the overstory include red maple and suppressed codominant species—such as, black cherry (*Prunus serotina*) and red oak (*Quercus rubrum*).

This habitat will be entirely removed to construct the Project. However, this conversion is not considered a significant impact, because the existing woodland habitat is heavily dominated by non-native species and is too small to support key habitat-specialist species.

Old Field/Meadow

This habitat type encompasses approximately 4.37 acres of the parcel; it occurs within the west-central portion of the Site as a transitional ecotone between woodland habitats to the west and maintained open field areas to the east of the property. This habitat type has developed as a successional trend—similar to the open field areas to the east that have been allowed to naturally revegetate with dense herbaceous vegetation and sporadic scrub/shrub species. Dominant species within this habitat type include cool season grasses, red clover (*Rifolium pratense*), goldenrod (*Solidago spp.*), multiflora rose, and honeysuckle.

A majority of this habitat type will be impacted by the Project. However, as this habitat type is predominantly herbaceous open field vegetation that will subsist in between the proposed arrays—and, to a lesser degree, under the panels—impacts to this habitat type will be minimized.

Open Field

This habitat comprises approximately 14.76 acres within the central and eastern portions of the Project Site. This habitat type is dominated by cool season grasses and red clover. Open Field habitat on the Site consists of hayfields that are mowed on an annual basis. The routine maintenance of these hayfields has maintained this habitat type by suppressing other herbaceous and shrub species.

A majority of the Project-related construction activities, and corresponding impacts, are proposed within the Site's Open Field habitat. This area is entirely comprised of cool season grasses that has been maintained through routine mowing; as such, development of the Project should not result in a significant impact to this habitat. In addition, post-construction vegetation maintenance on the Site would be similar to the existing management of this habitat (with some areas slightly affected by shading from the panel arrays).

Transitional Scrub/Shrub

This habitat occurs on the southcentral and northwest borders of the property and occupies approximately 0.97 acres of the Project Site. It provides ecotype transitions between the open field/old field areas and the unimproved Minor Street extension. This habitat type is characterized by dense scrub/shrub vegetation. The area is heavily dominated by invasive species that have been historically or periodically cleared—thereby preventing the establishment of more mature vegetation therein.

Dominant plant species in these vegetated areas include typical colonizers of disturbed habitat—e.g., the invasive, non-native multiflora rose and honeysuckle—and sparse native shrub species, such as, grey dogwood (*Carunus racemosa*) and staghorn sumac (*Rhus typhina*).

Approximately half of this habitat is proposed for removal. Project-related impacts to the transitional scrub/shrub habitat, however, will not likely result in a significant negative impact to Site resources. While loss of this habitat will occur, similar "edge" and transitional habitats will be established in those areas where forest/woodland clearing is proposed.

Developed Areas

The Project would have no substantive adverse impact(s) to the developed areas present on the Site, which consists of four (4) existing buildings and paved parking areas.

2. Wildlife

While a diversity of habitat is present on the Site, in general, the size of these habitats, coupled with the surrounding development characteristics, creates a "limiting factor" in terms of its utilization by wildlife. For example, habitat specialists that require large contiguous habitat blocks (e.g., mammals and birds) are not supported by the existing environment on the Site. This is credited to the fact that, with the exception of the Open Field habitat, each of the respective habitat blocks are less than five (5) acres in size. The Open Field habitat, although nearly fifteen (15) acres, is mechanically managed through the haying operations that take place on the site.

Despite their relatively small size, the complexities of the habitats present on-site do provide higher quality habitat for those species that are more tolerant of human disturbance, habitat fragmentation, and "edge" effects. As such, generalist wildlife species—which includes 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*)—could be expected to use these areas on the Site. However, because of the small and isolated nature of the habitat blocks, and because the habitat types being lost or converted as a result of the Project also occur elsewhere (either on or adjacent to the Site), the Project will likely not significantly impact the wildlife species utilizing them.

3. Core Forest

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, an independent evaluation of the Site was performed (based on GIS analysis of 2016 leaf-off aerial photography, field observations, and professional experience). As described in further detail below, the 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,* [7] does not include the Site within an area mapped as "core forest." The second dataset, UConn's Center for Land Use Education and

[7]Source: http://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=7b81844bab634281b544c20bf2d7bfb8: This spatial screening layer identifies prime contiguous and connected core forestland blocks.

Research's ("CLEAR") Forest Fragmentation Analysis ("FFA")[8] study, designates "core forest" as greater than 300 feet from non-forested habitat. This 300-foot zone is referred to as the "edge width," and represents sub-optimal breeding habitat for forest-interior birds due to decreased forest quality, increased levels of disturbance, and increased rates of nest predation and brood parasitism within this transitional forest edge ("edge effect").

The FFA study identifies three (3) categories of core forest: small (< 250 acres); medium (250-500 acres); and large (>500 acres). Based on the FFA criteria, the Site does not contain any forested habitats identified as "core" forest. This is consistent with the results of the independent analysis performed by APT, which revealed that no interior forest block is located on-site. While limited forested habitat does exist on the western side of the Site, this forested habitat is entirely influenced by "edge" effects; therefore, it is not considered "core forest" habitat.

Moreover, 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 core forest...*". *See* Appendix D, *Forestry Correspondence*. The Petitioner was also notified on May 21, 2020, that the Council was in receipt of said Forestry confirmation, as well as the subject filing.

4. Soils and Geology

Once vegetative clearing activities are completed at the Site, grading for the proposed stormwater management basins and swales will occur. The construction of the stormwater management basins will generate a considerable amount of material that will be re-used to construct two grass berms along the southern property line of the Project Site. The re-use of this material will result in approximately zero (0) cubic yards net cut/fill for the Site and will also reduce the amount of truck traffic leaving the Site. The

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If the project intersects with the Forestland Habitat Impact Map there is a potential for material effects to core forest.

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

grass berms will assist in directing stormwater to the proposed swales. For the locations of the proposed berms please see Appendix C.

Once the proposed stormwater best management practices are installed, minimal grading will be required for the remainder of Project construction. Some minor grading activities, however, may be required in connection with the installation of the proposed gravel access road and concrete equipment pads. See Appendix C.

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*.

Surficial materials on and within the vicinity of the Site are comprised of thin and thick deposits of glacial till, while soils located on and within the vicinity of the Site are respectively identified as Leicester fine sandy loam, Woodbridge fine sandy loam, Paxton and Montauk fine sandy loams, and Ridgebury, Leicester, and Whitman soils. Leicester fine sandy loam is a poorly drained, coarse-loamy, melt-out till soil derived from granite and/or schist and/or gneiss parent material. Woodbridge fine sandy loam is a moderately well drained, coarse-loamy lodgment till derived soil from gneiss, granite, and/or schist parent material. Paxton and Montauk fine sandy loams are well drained, coarse-loamy lodgment till derived soils from gneiss, granite, and/or schist parent material. Ridgebury, Leicester, and Whitman soils are poorly drained, coarse-loamy lodgment till derived soils from gneiss, granite, and/or schist parent material.

Bedrock geology beneath the Site is identified as Bristol Gneiss. Bristol Gneiss is described as a light, medium-grained, massive to well-layered gneiss, composed of plagioclase, quartz, and biotite, also muscovite and garnet in many layers, interlayered in places with dark amphibolite. The Petitioner does not 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.” Farmland soils are regarded as the most suitable land for producing food, feed, fiber, forage, and oilseed crops. According to the *Connecticut Environmental Conditions Online Resource Guide*,[9] the Site contains Prime Farmland

[9] Connecticut Environmental Conditions Online (CTECO) Resource Guide www.cteco.uconn.edu.

Soils located primarily within the eastern portion of the Project Area. *See* Figure 2, *Existing Conditions Map*), as well as the table below for further information.

Farmland Soils Assessment and Impacts Table		
Farmland Soil Classification	Total Area On-Site (+/- ac.)	Area within Project Limits (+/- ac.)
Prime Farmland Soil Area	14.8	11.2

The majority of the Project Area has remained undeveloped and has been used as agricultural land for over thirty (30) years. While portions of the western extent of the Project Area have been allowed to transition into Scrub/Shrub and Woodland Habitat, the central and eastern portions of the Project Area remain to be used for agricultural activities. Said activities have subjected the majority of the Project Area to compaction (resulting from the use of equipment and vehicles thereon). However, it is not evident whether plowing or crop rotation has occurred there for several decades.

Recognizing that the Project has a fixed useful life (and could, therefore, be considered temporary in nature), the Petitioner has proposed using minimally intrusive methods for the construction of the Facility. The use of a ground-mounted racking system for the installation of the solar panels and associated equipment, for example, minimizes the need for substantive grading. Beyond the Facility's fence line, the construction of a stormwater management basin in the southeast corner of the Project Area, and the installation of the drainage swale (along the eastern extent of the Project Area), will require some excavation(s) within an area mapped as "Prime Farmland Soils." These stormwater management controls, however, are necessary so to allow the Project to conform to the CTDEEP's Appendix I. Topsoil removed from these areas will be segregated from underlying horizons and will be either stockpiled or spread elsewhere as "top dressing" for reestablishing vegetation. No topsoil will leave the Site. The proposed implementation of these design strategies demonstrates that the Project will not materially affect Prime Farmland Soils.

Based on the foregoing, and in accordance with Conn. Gen. Stat. § 16-50k(a), the Petitioner initiated consultation with the Connecticut Department of Agriculture ("DOA") to present the Project and discuss the on-site presence of Prime Farmland Soils. Based on these discussions, the Petitioner informed the DOA that it would locate an agricultural co-use of grazing sheep to handle vegetation at the site. The Petitioner would seed the site with low growing vegetation that would provide grasses and forbs for the grazing sheep as well as species favored by pollinators. The sheep would graze at the Facility from

April/May through October/November. The Petitioner has discussed this approach with representatives of the DOA and has received favorable feedback. The Petitioner anticipates that written concurrence will be sent directly from the DOA to the Siting Council.

4. State-Listed/Threatened Species

NATURAL DIVERSITY DATA BASE

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

The NDDB maps represent approximate locations of (i) endangered, threatened and special concern species, as well as (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 a landowner's rights whenever species occur on private property.

With that being said, APT reviewed the most recent CTDEEP NDDB mapping (December 2019) 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, in accordance with CTDEEP and Council requirements, APT subsequently submitted a review request to the NDDB on February 24, 2020. On March 27, 2020, the CTDEEP responded to APT's request, and indicated that their records reveal that known extant populations of two (2) State-listed Special Concern species exist in the vicinity of the Site: the Eastern box turtle (*Terrapene carolina carolina*) and Bobolink (*Dolichonyx oryzivorus*). Copies of APT's submission and CTDEEP's response are contained within the Environmental Assessment, in the appendix labled *DEEP NDDB Correspondence.*

Eastern Box Turtle

The CTDEEP recommended that the Petitioner implement a series of construction-related protection strategies, including: (i) providing awareness/identification training to contractors/workers prior to initiating construction activities on-site; (ii) establishing so-called "exclusion zones" to prevent unintentional mortality to migrating eastern box turtles; and (iii), monitoring compliance with these protective measures. The Petitioner's Resources Protection Plan for the Site incorporates these measures. A copy of the Resources Protection Plan is included in the Environmental Assessment.

The Petitioner has committed to these protections and has also committed to the implementation of additional wildlife management strategies—such as designing the bottom of the proposed security fence six (6) inches above final grade. This gap will allow for unimpeded turtle (and any other small wildlife) migration across the Site.

Bobolink

Bobolinks are grassland birds that require open grassy areas to forage, breed, and nest. The breeding season for this species usually occurs between May and August, and they are known to breed in grasslands as small as five (5) acres. However, the regular maintenance of the hayfield on this Site has likely precluded successful breeding by Bobolinks in the past. The CTDEEP recommended that the Petitioner restrict Project-related construction activities between May 20th and August 20th to minimize potential impacts to the species. The Petitioner has agreed to start Project construction after August 20th to minimize potential impacts to Bobolinks; and protection measures for same have also been incorporated into the Petitioner's Resources Protection Plan. In the event that the Project's construction schedule changes, however, additional and/or alternative strategies will be implemented by the Petitioner (and are similarly accounted for/detailed in the Petitioner's Resources Protection Plan).

USFWS CONSULTATION

The northern long-eared bat ("NLEB"; *Myotis septentrionalis*) is a federally-listed 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.

APT reviewed the *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* map (February, 2016 version) to determine the location(s) of any known maternity roost trees or hibernaculum in the State. 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 Litchfield (approximately 8.3 miles to the northwest of the Project Site).

Because tree removal activities will be performed on the Project Site—and said removal can potentially impact NLEB habitat—APT completed, in accordance with the US Fish and Wildlife Service ("USFWS") criteria for assessing NLEB, a "Determination of Compliance" with Section 7 of the Endangered Species Act of 1973. The results of same revealed that the Project will likely not result in an adverse effect to, or incidental take[10] of, NLEB. Thus, it was determined that further consultation with the USFWS is not required, nor is a permit.[11] A full review of the *Endangered Species Act (ESA) Compliance Determination* is provided in the Petitioner's Environmental Assessment.

E. Wetlands and Vernal Pools

1. Identified Wetlands

During a November 8, 2019 field inspection and wetland delineation at the Site, APT Registered Soil Scientist Matthew Gustafson identified portions of three (3) wetlands, comprising approximately 0.89 acres, on, or proximate to, the Site. The results of the field delineation are summarized below, and additional information is provided in the Environmental Assessment in the section entitled *Wetland Inspection Report*. The locations of these resources are also depicted on Figure 2, *Existing Conditions Map*.

Wetland 1 is located off-site and consists of a complex of hillside seep wetlands, an interior emergent swamp, and an associated intermittent watercourse. Wetland 1 receives road drainage from James P. Casey Road, and drains south through a 36-inch reinforced concrete pipe that conveys flows under Minor Street. A well-confined intermittent watercourse (IWC 1) is formed from this point- discharge-outfall and continues through the eastern end of the Site, before reaching the southern property boundary and

[10] "Incidental take" is defined by the Endangered Species Act 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.

[11] A letter confirming compliance was received by USFWS on January 9, 2020.

continuing farther south off of the Site. Hydrological patterns associated with this wetland consist of an altered seep system confined by an existing access road that results in a mix of seasonal saturation from seepage, artificial flooding due to a restricted outfall, and intermittent flooding from stormwater inputs. As a result of historic alterations to this resource, vegetation classes range from interior emergent vegetation to edge scrub/shrub and forested vegetation. The intermittent watercourse consists of an unnamed south-flowing stream with a three (3)- to five (5)-foot wide, well-confined channel, and sandy bottom. Banks bordering the intermittent watercourse generally consist of open field with sparse areas of scrub/shrub growth. Evidence of seasonal flooding or ponding water was noted during the subject field inspection.

Wetland 2 consists of a headwater wetland seep system located at a topographic low-point at the southwestern edge of the existing Open Field habitat. This system drains south ultimately off of the Site. Portions of this wetland are dominated by emergent vegetation and edge scrub/shrub micro-habitats resulting from historic edge-clearing associated with adjacent agricultural fields.

Wetland 3 is located in the western extent of the Site, and is a complex of hillside seep wetlands, an interior perennial watercourse (PWC 3), and a secondary, feeder intermittent watercourse (IWC 3). This latter feature was historically formed as part of a drainage swale along the unimproved western portion of Minor Street and drains into Wetland 3 from the east. The interior perennial watercourse drains from north to south along the Site's western boundary. Bordering areas to the interior perennial watercourse consist of broad forested floodplain wetlands with complexes of edge hillside seep systems.

Wetland 3 contains a complex of hydrological conditions—ranging from seasonal saturation (hillside seeps), seasonal flooding (bordering areas to the perennial watercourse) and artificial flooding (areas associated with the drainage swale). These conditions, in conjunction with historic and regular vegetation maintenance at the Site, have created vegetation classes ranging from interior and edge emergent areas with transitional scrub/shrub habitats to forested wetland habitat.

No direct conveyances were noted between the two (2) watercourses. The perennial watercourse is characterized by an approximately six (6)-foot-wide channel with sandy/cobble bottom and flows ranging from two (2) to four (4)-inches deep at the time of inspection. The intermittent watercourse is characterized by a two (2) to three (3)-foot-wide channel that is formed in sandy/gravelly material. During the inspection, a hard-bottom crossing was noted where Minor Street crosses the drainage swale. The

defined bank and channel of the intermittent stream diminishes and is lost as it discharges into bordering wetlands associated with the perennial watercourse.

2. Impacts to Wetlands

No wetlands or watercourses will be directly impacted by the Project. Portions of the Project Area will require minimal grading proximate to these resources, including access road improvements and the installation of stormwater and landscape screening features. All clearing and grading limits for the Facility's infrastructure (e.g., solar arrays, associated equipment and fencing) will maintain a minimum setback of ± 50 feet to the wetlands. There are, however, certain Project-related exceptions to this 50-foot minimum setback, including the following:

1. Limited grading associated with improvements to Minor Street will be located close to the southeast border of Wetland 1. These proposed activities would occur within existing developed and disturbed areas.
2. Stormwater features will be located less than 50 feet to IWC 1 and IWC 2. Upland areas adjacent to IWC 1 generally consist of well-maintained hayfield with no bordering vegetated wetlands; therefore, the installation of a minor stormwater drainage swale will not likely result in a significant impact to the resource and would actually protect this resource from potential erosion or discharge of sediment. Proposed clearing activities in proximity to the intermittent watercourse (man-made drainage swale identified as IWC 3) that drains into Wetland 3 would not impact its principal function, which is conveyance of surface flows from the roadbed.
3. Landscape screening features, consisting of the installation of 41 ten-(10)-foot-tall emerald green arborvitaes, will be installed along a portion of the southern property line to soften views from abutting properties to the southeast of the Facility. The eastern extent of these plantings will be located less than 50 feet to IWC 1. Upland areas adjacent to this portion of IWC 1 generally consist of well-maintained hayfield with no bordering vegetated wetlands; therefore, the plantings will likely not result in a significant impact to the resource and would provide additional habitat for a wide variety of wildlife.

To promote protection of wetlands and watercourses during construction, safeguards have been developed to avoid unintentional impacts to same, including, *inter alia*, a Project-specific Resources 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 C, *Resources Protection Plan*. By implementing these management techniques throughout the duration of Project construction, potential adverse impacts to wetland resources will be greatly mitigated.

Moreover, potential long-term, secondary impacts to wetland resources associated with the operation of this Facility are minimized by several factors, including:

1. The development will be unstaffed (generating negligible traffic);
2. Utilization of an existing gravel/dirt access drive (reducing the creation of impervious surfaces); and,
3. Treating the majority of the ground beneath the solar arrays with native grass/vegetation (providing ample opportunity for surface water to infiltrate or slow prior to discharge to surrounding resources). As such, the Project will likely not have an adverse impact to the wetland resources identified.

The *Wetlands Impacts Table,* below*,* details all direct impacts to the identified wetlands, and the respective distances to wetland resources.

Wetland Impacts Table		
Direct Impacts to Wetland 1 (ac.)	0	
Direct Impacts to Wetland 2 (ac.)	0	
Direct Impacts to Wetland 3 (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	8	Northeast
Project Proximity to Wetland 2	50	South
Project Proximity to Wetland 3	50	West
Project Proximity to IWC-1	18	East
Project Proximity to PWC-3	110	West
Project Proximity to IWC-3	5	Northwest

3. Vernal Pools

During its field inspection, APT assessed all three (3) wetland resource areas identified at, or within the vicinity of, the Project Site for indications of vernal pool resources. Based on a lack of evidence of seasonally flooded areas observed on that date, it does not appear that any potential vernal pool breeding habitat presently exists on the Site. Therefore, the Project will not result in any impacts to vernal pool resources.

F. Water Resources and Stormwater Management

The Project is not expected to have an adverse impact on the State's water resources; the Facility will be unstaffed; no potable water uses, or sanitary discharges are planned; and no liquid fuels are associated with the operation of the Facility. Regarding potential stormwater issues, and as discussed in greater detail below, the stormwater generated by the proposed development (once operative) will be properly handled and treated in accordance with the *2004 Connecticut Stormwater Quality Manual.*

1. Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Site. 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 respective community. The Project Site is mapped on FIRM PANEL #09003C0455F, dated September 26, 2008. Based upon the reviewed mapping, the Site is classified as an unshaded "Zone X," which is defined as "areas of minimal flooding," typically above the 500-year flood level. The Project is outside the influence of 100- and 500-year floodplains and will have no effect on these resources. As such, no special considerations or precautions relative to flooding are required for the instant Project.

2. Groundwater

Groundwater underlying the Site is classified by the CTDEEP as "GA". This classification indicates that the groundwater within the area is presumed to be suitable for human consumption, without treatment.[12] Based upon a review of available CTDEEP mapping, the Site is not located within a mapped

[12] 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.

preliminary or final Aquifer Protection Area. As such, the Project will have no adverse environmental effect(s) on ground water quality.

3. Surface Water

Based upon a review of available CTDEEP mapping, the majority of the Site is located in Major Drainage Basin 4 (Connecticut River), Regional Basin 43 (Farmington River), and Sub Regional Drainage Basin 4315 (Pequabuck River). The western portion of the Site (including the majority of the Project Area) is located in Local Drainage Basin 4315-03; while the eastern portion of the Site is located in Local Drainage Basin 4315-07.

The CTDEEP mapping revealed that there are three (3) unnamed surface waterbodies located in close proximity to the Site. The first is the perennial stream associated with Wetland 3, which meanders along the western boundary of the Site; the second is IWC 1, which drains from Wetland 1; and, the third is IWC 3, which drains towards Wetland 3. The CTDEEP has classified both unnamed surface waterbodies as "Class A."[13]

The Project will have no adverse environmental effect on surface water quality.

4. Stormwater Management

The Project has been designed to meet the current draft of DEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects*. The Petitioner acknowledges that, as a result of the clearing to be performed on-site, there will be an increase in stormwater runoff within the Project Area. That increase will require mitigation through the installation of stormwater management basins. While the change in proposed post-development drainage characteristics from existing conditions is not considered significant, *Appendix I* requires a reduction of on-Site soils Hydrologic Soil Group class by one step and results in a significant increase to the size of the stormwater management basins.

To mitigate the increased stormwater runoff for the Site, a series of drainage swales and grass-lined stormwater management basins with outflow control devices and overflow weirs are proposed at multiple locations on the edge of the Project Area. *See* Figure 3, *Proposed Conditions Map.* As a further

[13] Designated uses for Class A surface water bodies include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.

mitigative effort, portions of the Project Area that will be cleared and grubbed during construction will be stabilized with a low growth seed mix, New England semi-shade grass and forbs mix (or equivalent). More information regarding stormwater management for the Project is included herein as Appendix E, *Stormwater Management Report.*

Moreover, 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") to be finalized and submitted to the Council, pending approval by the CTDEEP Stormwater Management Division. The SWPCP will include the 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 the CTDEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities*. As such, with the incorporation of adequate protective measures, stormwater runoff associated with Project development will not result in an adverse impact to the water quality of nearby surface water bodies.

G. Air Quality

Due to the nature of solar energy generating facilities, the Project, once operational, will not generate any air emissions on-site. While the Petitioner acknowledges that there is the potential for temporary, mobile source emissions associated with the construction of the Project (resulting from vehicles and related construction equipment), any such potential air quality impacts resulting therefrom are considered *de minimis*.

Nonetheless, the Petitioner will mitigate such construction-related emissions by utilizing a series of protective measures, including, *inter alia*, (i) limiting idling times of equipment; (ii) properly maintaining all vehicles and equipment; and, (iii) watering/spraying construction 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 proscribed by the United States Environmental Protection Agency).

H. Historic and Archaeological Resources

Heritage Consultants LLC ("Heritage Consultants") of Newington, Connecticut, reviewed relevant historic and archaeological information to determine whether the Site holds potential cultural resource

significance. Heritage Consultants' 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 located on, or proximate to, the Site, that are listed, or eligible for listing, on the National Register of Historic Places ("NRHP").

In terms of archaeological potential, the Site is located within an area of low slopes and well-drained soils and is situated in close proximity to the Pequabuck River to the south, and Birge Pond Brook to the east. As a result, it was determined that a majority of the subsoil in the Project Area has the potential to contain intact archaeological deposits. At the request of the Petitioner, Heritage Consultants performed a Phase 1B Professional Cultural Resources Assessment and Reconnaissance Survey in April of 2020.

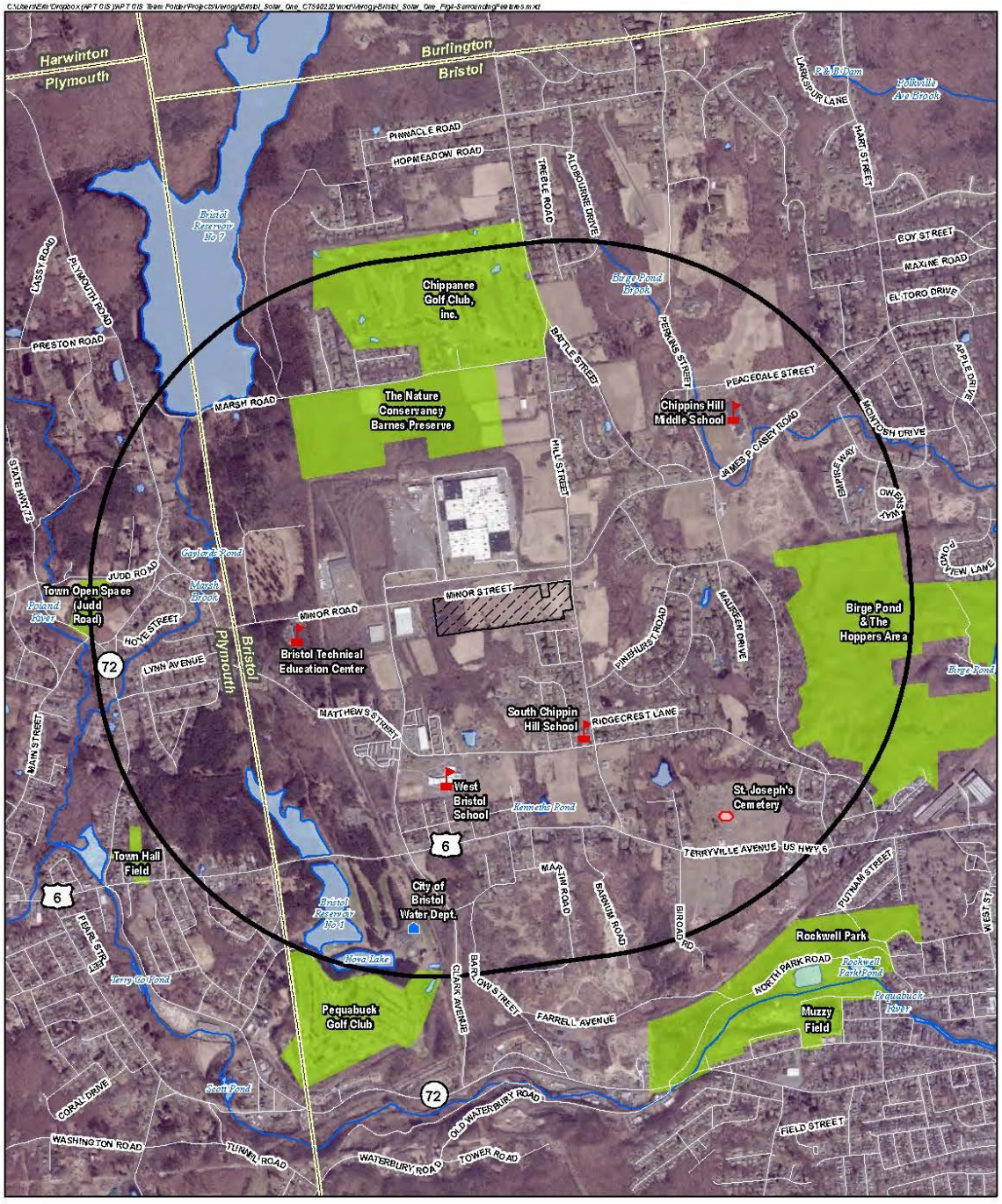
Fieldwork for the Phase 1B assessment included a pedestrian survey, photo-documentation, and the excavation of 198 shovel tests across the Project Area (shovel testing of the southwestern corner of the Project Area, however, was deemed not warranted due to the presence of slopes). The survey resulted in the excavation of a single shovel test that yielded artifacts. Subsequently, it was determined that the yielded artifacts lack both research potential and "qualities of significance," as defined by the NRHP criteria for evaluation (36 CFR 60.4 [a-d]). Therefore, no additional testing is necessary prior to construction of the proposed Project.

In April of 2020, Heritage Consultants, on behalf of APT, submitted Project and Site historic/cultural information, as well as copies of the Phase 1A and 1B Cultural Resources Assessment and Reconnaissance Surveys, to the SHPO for agency review and comment. By correspondence dated May 28, 2020, the SHPO alerted the Petitioner that the agency "…concurs with the findings of the report that additional archeological investigations of the project areas are not warranted and that no historic properties will be affected by the proposed activities." Copies of the Phase 1A/1B Cultural Resources Reconnaissance Survey Report are included in Appendix F, *Phase 1A/1B Cultural Resources Reconnaissance Survey Report*; a copy of the SHPO Correspondence is included in Appendix G, *SHPO Correspondence.*

I. Scenic and Recreational Areas

There are no state-designated scenic roads or scenic areas located near the Project Site. The nearest recreational area is the Nature Conservancy Barnes Preserve, which is located approximately 0.5

mile to the north of the Site. As such, no state-designated scenic roads or recreational areas will be physically or visually impacted by development of the Project. See Figure 4, *Surrounding Features Map,* for other resources located within one mile of the Site.



Legend

Site
1 Mile Radius
Open Water
Watercourse
Municipal Boundary

Surrounding Features

School
Municipal
Cemetery
Municipal and Private Open Space Property

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 2,000 feet
Map Date: March 2020

2,000 1,000 0 2,000 Feet

Figure 4
Surrounding Features Map
Proposed Solar Facility - Bristol Solar One
399 Hill Street
Bristol, Connecticut

Bristol Solar One, LLC

ALL-POINTS TECHNOLOGY CORPORATION

J. Noise

With the exception of the existing farmhouse and outbuildings, the majority of the Site is undeveloped, and no unusual noise sources presently exist and/or emit on-site.

Project-related construction noise is exempt under the City's Code of Ordinances. *See* Bristol Code of Ordinances, Chapter 15, Section 15-19 – "Exemptions". During construction of the Facility, the temporary increase in noise will likely raise localized ambient sound levels immediately surrounding the Project Area. Standard types of construction equipment will be used for the Project. 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.

Once operational, noise from the Project will be minimal and will meet applicable City noise standards for a Residential Daytime/Nighttime Zone(s).[14] Because the Site is located within a Residential Zone and is abutted by residential and industrial areas, conservatively, the Facility would be considered an "Industrial noise emitter to Residential receptors." As such, it is subject to noise standards of 55 dBA during the daytime and 45 dBA at night.

The only noise generating equipment planned at the Facility are the inverters and transformers. Based on the most conservative information provided by specified equipment manufacturers, the loudest piece of proposed equipment is a 2,000 kVA transformer that will generate a maximum sound level of approximately 68 dBA. Sound, however, reduces with distance and the inverters and transformers are inactive at night. The closest property line relative to the nearest inverter/transformer is approximately 65 feet to the north, across Minor Street. This parcel[15]--which is zoned Residential (R-25) and is currently undeveloped—abuts Minor Street to the south, James P Casey Road to the north, and Industrial Park zones to the west and north. The nearest residentially-developed parcel is 43 Minor Street, which is located approximately 472 feet to the east of the proposed Facility equipment.

[14] City's Code of Ordinances, Chapter 15, Section 15-21 – Unlawful Noise Levels; Standards.

[15] Based on the City of Bristol Property Listing Report, this parcel is known as James P. Casey Road, Map-Block-Lot 65-2-2+2-1.

APT applied the Inverse Square Law[16] to evaluate the relative sound level(s) of the largest transformer at the nearest property lines (as described above). Based on these calculations, 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 lines.

K. Lighting

The Site is undeveloped, and no light sources currently exist on-site. While no exterior lighting is planned for the Facility, there will be some small, non-intrusive lighting fixtures within the equipment to aid in maintenance.

L. FAA Determination

APT submitted relevant Project information to the Federal Aviation Administration ("FAA") for an aeronautical study to evaluate potential hazards to air navigation resulting from the Project. On April 9, 2020, the FAA provided the Petitioner with a "Determination of No Hazard to Air Navigation." See the section labeled *FAA Determination* contained within the Environmental Assessment. Based on this determination, there is no need to conduct a glare analysis, and the Project is not expected to pose any hazard(s) to air navigation.

M. Visibility Evaluation

The Project is not expected to present any substantive visual/visibility issues. The Facility itself will consist of 11,492 non-reflective solar panels, measuring approximately ten (10) feet above final grade, and will be surrounded by a six (6) foot tall security fence. Additionally, landscape screening features, which will consist of 41 ten-(10)- foot-tall emerald green arborvitaes will be installed along a portion of the southern property line to soften views from abutting properties to the south of the Site, along Clover Road (*See* Figure 3, *Proposed Conditions Map*). Importantly, the Project's proposed electrical interconnection to the existing electrical distribution line located on Minor Street will not require the installation of new utility poles.

[16] The 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.

Year-round visibility of the proposed Facility will be confined to the areas within the immediate vicinity of the Site, primarily from abutting properties to the south along Clover Road, and east on Hill Street. Views from select locations along Clover Road will be minimized by the construction of a ten (10) to fifteen (15)-foot-high grass berm and the installation of landscape screening features along the southeastern portion of the Project Area. Limited seasonal views—i.e., when the leaves are off of the deciduous trees—could extend as far as approximately 0.25 miles in all directions from the Project Site. In general, however, views beyond the immediate area would be minimized by virtue of the relatively low height of the Facility and the presence of intervening vegetation and infrastructure.

Lastly, the selected solar modules are designed to absorb incoming solar radiation and minimize reflectivity—such that only a small percentage of incidental light will be reflected off of the panels. This incidental light is significantly less reflective than common building materials (such as steel, or the surface of smooth water). In addition, the panels will be tilted up toward the southern sky at a fixed angle of thirty (30) degrees—thereby further reducing reflectivity. See the last section of the Environmental Assessment, entitled *Photo-simulations and Viewshed Map,* for visual simulations and a viewshed analysis of the proposed Project.

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 benefits this Project will provide to the State of Connecticut and the City of Bristol, Bristol Solar One, LLC respectfully requests that the Siting Council approve this Petition for the Project, as it is currently designed.

Respectfully Submitted,

BRISTOL SOLAR ONE, LLC

The Petitioner