June 29, 2017

Tobacco Valley Solar

Petition for a Declaratory Ruling

SUBMITTED TO

Conneticut Siting Council

PETITIONER

DWW Solar II LLC

PREPARED IN ASSOCIATION WITH

Pullman & Comley, LLC
Vanasse Hangen Brustlin, Inc.
Heritage Consultants, LLC
Environmental Design & Research | PDC

Tobacco Valley Solar

26.4 MW Solar Photovoltaic Development
Simsbury, Connecticut

PREPARED FOR

DWW Solar II, LLC
56 Exchange Terrace
Suite 300
Providence RI 02903

PREPARED BY

100 Great Meadow Road
Suite 200
Wethersfield, CT 06109

June 29, 2017

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PETITION OF DWW SOLAR II, LLC

FOR A DECLARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF A 26.4 MW-AC SOLAR PHOTOVOLTAIC PROJECT ON HOSKINS ROAD AND COUNTY ROAD IN SIMSBURY, CONNECTICUT

JUNE 29, 2017

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List of Acronyms and Definitions

AC	Alternating Current
ASTM	American Society for Testing and Materials
ATV	All-terrain vehicle
BDP	Best Development Practices
BFE	Base Flood Elevations
CECPN	Certificate of Environmental Compatibility and Public Need
CGS	Connecticut General Statutes
CO2	Carbon Dioxide
COC	Contaminants of Concern
CT ESA	Connecticut Endangered Species Act
CT DEEP	Connecticut Department of Energy and Environmental Protection
CLEAR	Center for Land Use Education and Research
CRP	Conservation Reserve Program
CWAP	Connecticut Wildlife Action Plan
dB	decibels
dB(A)	A weighted decibels
DWW	DWW Solar II, LLC
DEEP	Department of Energy and Environmental Protection
EDR	Environmental Design & Research PDC
EMF	Electric and Magnetic Fields
ESA	federal Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FCA	Forward Capacity Auction
FCM	Forward Capacity Market
GCN	Greatest Conservation Need
GWh	Gigawatt Hour
GZA	GZA GeoEnvironmental Inc.
IWWA	Inland Wetlands and Watercourses Agency
IPaC	Information for Planning and Conservation
ISO-NE	Independent System Operator of New England
IWWC	Inland Wetlands and Watercourse Commission
kV	kilovolt
LLC	Limited Liability Company
MW	Megawatt
MWh	Megawatt Hour
MT	Metric Tons
NAAQS	National Ambient Air Quality Standards

NAVD 88	North American Vertical Datum of 1988
NDDB	Natural Diversity Data Base
NEMA	National Electrical Manufacturers Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NLEB	Northern Long-Eared Bat
NRCS	Natural Resource Conservation Service
O&M	Operation and Maintenance
PPA	Power Purchase Agreement
POCD	Plan of Conservation and Development
ppb	Parts Per Billion
PVP	Potential Vernal Pool
RCSA	Regulations of Connecticut State Agencies
REC	Recognized Environmental Condition
RFP	Request for Proposals
ROW	Right of way
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SOM	Soil Organic Matter
URA	Upland Review Area
US EPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Services
VHB	Vanasse Hangen Brustlin, Inc.
WAP	Wildlife Action Plan
XLPE	Cross-linked polyethylene

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Introduction

This is a Petition for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need (CECPN) is not needed for the construction, operation and maintenance of the Tobacco Valley Solar Project (the Project) proposed by DWW Solar II, LLC (the Petitioner) in the Town of Simsbury, Connecticut. The Project includes the development of a 26.4 megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic system on five separate parcels of land totaling approximately 289 acres off Hopmeadow Street (US 202/CT 10), Hoskins Road and County Road in Simsbury.

Pursuant to Section 16-50k(a) and Section 4-176(a) of the Connecticut General Statutes (CGS) and Section 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies (RCSA), the Petitioner hereby petitions the Connecticut Siting Council (the Siting Council) for a declaratory ruling that a CECPN is not required for the Project.

CGS § 16-50k(a) provides, in relevant 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 … the construction or location of any … gridside 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 Environmental Protection

As described more fully below, the construction, operation and maintenance of the proposed Project satisfies the criteria of CGS § 16-50k(a) and will not have a substantial adverse environmental effect.

This Report has been prepared by Vanasse Hangen Brustlin, Inc. (VHB) under the direction of the Petitioner. The description of the affected natural and social environments, and impact analyses were prepared by VHB and other consultants to the Petitioner including Heritage Consultants, Inc. (Heritage) for cultural resources and Environmental Design & Research, P.D.C. (EDR) for visual resources.

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Petitioner

DWW Solar II, LLC (DWW Solar or the Petitioner) is a Delaware limited liability company headquartered at 56 Exchange Terrace, Providence, Rhode Island 02903. DWW Solar's owner Deepwater Wind is a leading developer of renewable energy projects. The company is led by a veteran management team with extensive experience in developing renewable energy projects throughout the United States. Its Block Island Wind Farm, which began commercial operations late last year, is America's first and only offshore wind farm. Company qualifications and resumes are provided as Exhibit A to the Petition.

Correspondence and/or communications regarding this petition should be addressed to:

Aileen Kenney
Deepwater Wind, LLC
VP, Permitting and Environmental Affairs
56 Exchange Terrace, Suite 300
Providence, RI 02903
(401) 648-0607 (office)
akenney@dwwind.com

A copy of all such correspondence or communications should also be sent to the Petitioner's attorney:

Lee D. Hoffman
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702
(860) 424-4315 (office)
(860) 424-4370 (fax)
lhoffman@pullcom.com

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Proposed Project

3.1 Project History

DWW Solar II LLC proposed the Tobacco Valley Solar Farm (TVS) in response to the New England Clean Energy Request for Proposals (RFP) solicited by the Connecticut Department of Energy and Environmental Protection (CT DEEP), and regulatory agencies and utility companies in Massachusetts and Rhode Island. In October 2016 DWW Solar's Project was selected as one of the bidders to enter final contract negotiations with Eversource. The TVS Project is a new solar power generating facility located on 156 acres of a 289-acre parcel which is zoned as residential and industrial land and is currently managed for agricultural use in Simsbury, adjacent to existing the Eversource 115 kV North Simsbury substation. Refer to Figure: USGS Project Location Map provided at Exhibit B.

3.2 Project Purpose and Need

The purpose of TVS is to respond to the New England region's need for new sources of electric generating capacity and renewable energy as established the Procurement Statutes described below and a growing need for capacity generally in New England.

The Need for New Sources of Electric Generating Capacity

ISO New England (ISO-NE) estimates that up to 8,300 MW of non-gas-fired generation is "at risk" for retirement by 2020 (28 older oil and coal units). Of the 8,300 MW at risk, over 3,000 MW of non-gas resources have announced their intention to retire in the next five years. If all retire, ISO-NE estimates that 6,300 MW of new or repowered capacity will be needed to maintain reliability in the region.

ISO-NE acquires new sources of electric generating capacity for reliability via the Forward Capacity Market (FCM) capacity procurement mechanism, approved by the Federal Regulatory Commission (FERC) in 2006. As members of ISO-NE, Connecticut load-serving entities rely upon ISO-NE's FCM capacity procurement mechanism to meet projected peak electricity demand plus a target amount of reserves (i.e., extra capacity ISO-NE determines the reliability-driven need for new capacity resources like TVS using the FCM.

Under the FCM, system-wide and localized needs for both existing and new capacity are determined through competitive declining auction processes called Forward Capacity Auctions (FCAs). Prior to the auction, ISO-NE identifies zones within ISO-NE based on a variety of factors including transmission constraints and participating capacity resources. Capacity resources that clear the FCA in their zone become ISO-NE system-wide capacity resources and zonal capacity resources, for the period covered by the FCA. Therefore, capacity resources that clear the FCA are, by definition, needed for reliability.

TVS is required to participate every FCA over the term of its PPA, and is expected to clear each year. If TVS clears in any FCA, then ISO-NE (and, by proxy because TVS will be in a zone that includes Connecticut, Connecticut load-serving entities that are participants in ISO-NE) will have determined TVS to be needed for the reliability of Connecticut and the wider New England market.

The Need for New Sources of Renewable Energy

The States of Connecticut, Massachusetts and Rhode Island have each enacted legislatively-established goals for procuring new source of renewable energy described below (collectively, the "Procurement Statutes").

In Connecticut, the Commissioner of the CT DEEP is authorized to procure renewable energy subject to the following statutes:

- Sections 6 and 7 of Connecticut Public Act 13-303, An Act Concerning Connecticut's Clean Energy Goals (as amended by Sections 32 and 33 of Public Act 14-94, An Act Concerning Connecticut's Recycling and Materials Management Strategy, The Underground Damage Prevention Program and Revisions to Energy and Environmental Statutes),
- Section 1(c) of Public Act 15-107, An Act Concerning Affordable and Reliable Energy; and
- the Commissioner's authority under Connecticut General Statutes Section 16a-14.

Pursuant to the above, the authorized procurement levels were:

- 2,750 GWh per year of Qualified Clean Energy under Section 1(c) of Public Act 15-107;
- 1,375 GWh per year of Qualified Clean Energy under Section 7 of Public Act 13-303; and

- 125 GWh per year of Class I Qualified Clean Energy under Section 6 of Public Act 13-303

In Massachusetts, the electric distribution companies are authorized to procure clean energy pursuant to Sections 83A and 83D of Chapter 169 of the Acts of 2008 (the "Green Communities Act"), as amended by chapter 209 of the Acts of 2012, An Act relative to competitively priced electricity in the Commonwealth and by chapter 188 of the Acts of 2016, An Act to Promote Energy Diversity (the "Energy Diversity Act").

Pursuant to the above, the authorized procurement levels were:

- 817 GWh per year of Class I Qualified Clean Energy under Section 83(a)
- 9,450 GWh per year of Qualified Clean Energy under Section 83(d)

Further, the electric distribution companies in Rhode Island are authorized to procure renewable energy pursuant to Chapter 31 of Title 39 of the General Laws of Rhode Island, the Affordable Clean Energy Security Act ("Chapter 39-31").

TVS was selected to supply power to the Massachusetts electric distribution companies under a solicitation authorized by the above Procurement Statutes. Having been selected to supply clean energy under the Procurement Statutes, TVS has been determined to partially satisfy the need for new sources of energy and capacity.

Consistency with State Long Range Plan

As part of Connecticut's 2014 Integrated Resources Plan (IRP), CT DEEP has proposed several electric generating capacity and renewable resource procurement strategies that it believes will help the State of Connecticut reach the goal of achieving a reliable, clean, and cost-effective pool of energy supply. The development of TVS supports these strategies. Not only would TVS add approximately 26.4 MW of electricity generation to Connecticut, but also it would do so with a renewable energy resource that does not generate any carbon emissions. Thus, such energy generation will assist Connecticut in meeting its 80 percent greenhouse gas reduction goal by the year 2050.

3.3 Site Selection

DWW Solar conducted a review of reasonably available properties within Rhode Island, Massachusetts and Connecticut to that would be able site a utility scale solar project, and did so over a 2-year period preceding the selection of the Project Site. As the Siting Council is well aware, land to be used for a commercial-scale solar project needs to have the following characteristics: large size tract, no- or readily avoidable environmental constraints (e.g. wetlands, rare species, etc.), generally level topography, compatible land use regulation, and proximity to a transmission or distribution voltage substation. In addition, the site in question must have a landowner that is willing to sell the site or enter into a long term lease with a solar developer. Several sites were assessed during that time and abandoned from further

consideration for lack of one or more of the listed characteristics. Other sites investigated included but were not limited to:

- Litchfield – 158-acre site abandoned due to wetland constraints
- Griswold – 25-acre site abandoned due to access limitations and wetlands
- Killingly – 158-acre site abandoned due to rare species and potential soil contamination issues.

Once the Project Site was selected, DWW Solar embarked upon a detailed due diligence analysis of the feasibility of developing a solar project on this property. Ultimately the Project Site was determined to be feasible for development and DWW Solar submitted an application to the CT DEEP, Eversource, Unitil, and National Grid for consideration under the 2016 Tri-State Clean Energy RFP. DWW Solar was notified in October 2016 that the Simsbury Project had been selected as a finalist under the RFP review process.

3.4 Property Description

The Project Site consists of five separate parcels of land totaling approximately 289 acres off Hopmeadow Street (US 202/CT 10), Hoskins Road and County Road in Simsbury. Refer to Figure: Site Location Map provided at Exhibit B.

Parcel ID	Acreage[1]	Zoning Designation
G03-403-032	138	R-40
G03-403-012	30	R-40
G03-403-026-32H	54	I-1
G03-403-014	14	I-1
H05-103-024	53	R-40

The Project Site contains areas of agricultural fields, woodland and wetland areas. Unimproved dirt farm roads interconnect the fields and provide access from public roadways. The Project Site is crossed by the Eversource 1256 Line 115 kilovolt (kV) transmission line right of way (ROW) and two municipal sewer easements.

The Project Site is bounded on the west by residential subdivisions and the Squadron Line School, on the north by open space, on the east by residential land uses, open space and the Eversource substation, and on the south by open space.

3.5 Project Description

The Project includes the construction of solar photovoltaic arrays across the five parcels. Consistent with the terms of the Power Purchase Agreement, the proposed Project is anticipated to have a 25-year operational life. The Project will connect into the Eversource North Simsbury Substation.

1 Acreage according to VHB property boundary survey.

The solar panels will be mounted on fixed metal framework or "racking". The racks will be arranged in rows facing due south and will be supported on pile foundations arranged in rows spaced approximately 13 feet apart to enable access by pickup truck or ATV. The panels are fixed at a tilt of approximately 25 percent and will be approximately 3 feet above grade at the low end and approximately 10 feet above grade at the highest point. The photovoltaic panels are composed of crystalline silica cells supported in anodized aluminum frames. The panels are designed to have low irradiance (reflectance), and are approximately 97 percent efficient, meaning that very little light is reflected off the surface. The proposed array system is designed to absorb energy directly from the sun and should not be confused with the reflector-concentrator type systems that have been constructed in the western United States. The panels will be connected with direct buried cross-linked polyethylene (XLPE) cable which connect the panel arrays to electrical equipment pads. Fourteen concrete equipment pads spaced throughout the Project footprint will contain transformers, inverters and electrical panels. This equipment is anticipated to have a height above adjacent grade of approximately 10 feet. The solar array will connect to the Eversource North Simsbury Substation described above via a buried XLPE electrical cable. All cabling for the Project will be buried underground.

The facility will be surrounded by a 20-foot-wide gravel perimeter roadway for safety and a 7-foot-high chain link fence for security. The chain-link fence is required to be posted with safety signage providing the warning that high voltage equipment is stored inside the fence. The National Electric Safety Code (NESC) dictates the height of the fence and the signage. The NESC also dictates the distance between the fence and electrified equipment to minimize arcing, as well as grounding requirements for the fence itself for the safety of those potentially contacting the fence. The security fence is not an electric fence. Outside the fence, an approximately 100-foot-wide zone around the east, west and south sides will be cleared of vegetation and managed as meadow for the lifetime of the facility operation.

Generally, the Project will conform to existing surface grades. Within the fence line, where steep slopes are present, grading will be required to achieve maximum slopes of 15 percent. Limited grading will be necessary around the Project perimeter to meet existing grades. Proposed array foundations will be driven piles, either steel H-piles or pre-drilled concrete. 20 foot by 20 foot pads concrete pads will be cast in place. Footings for the pads will extend 4 to 5 feet below grade. Direct buried XPLE cable will be trenched in approximately 3 to 4 feet below grade.

Operational phase access to the Site will be provided off Hoskins Road and County Road. The 20-foot-wide gravel perimeter roadway will connect to the public roadway at these locations. A gate will be installed at the County Road entrance to discourage driving along the access roads by unauthorized individuals. Signage identifying the facility will be provided at each of these locations and will include contact information for DWW personnel and/or a designated operator in charge of managing the facility. These signs will be designed with consideration of the extensive signage guidance provided in the Town of Simsbury Zoning Regulations.

Visual screening for the Project will include a combination of landscape plantings, architectural fencing and meadow or grass seeding. Proposed screening is described in Section 7.6.

The Project layout is depicted on Figure: Project Layout Map provided at Exhibit B and the Site Plans are provided at Exhibit C.

Construction of the Project is expected to take 6-8 months and is expected to occur in 2018. Refer to Section 7.10 for information on construction work hours.

Interconnection Alternatives

The Project includes 3 alternative configurations for connecting into the North Simsbury Substation, depicted on Figure: Project Layout Map provided at Exhibit B.

- Northern Cable Route. This alternative incorporates the proposed switchgear into the Project layout within Lot G03-403-012. Collection cables bringing power from the southern portions of the Project will connect into the switchgear via a cable located in the farm road. From the switchgear heading east, the cable will likely be constructed using a cut and cover a/k/a direct trenching) construction method under the Project perimeter roadway and joining an existing gravel path that heads east over the wooded knoll south of Howard Street to a point due north of the Eversource Substation. From there, it is anticipated that the cable will be installed using a jack and bore construction method. Despite an increase in cost, DWW Solar concluded that it would be more environmentally sound to jack and bore in this location since it will avoid the need for an overhead cable down the steep slope and limit tree clearing.
- Southern Cable Route. This alternative incorporates the switchgear into the Project layout within lot G03-403-014. Collection cables bringing power from the northern portions of the Project will connect into the switchgear via a cable located in the farm road. From the switchgear, the cable would be constructed along Casterbridge Crossing east to the substation. Due to the presence of utilities and culverts under Casterbridge Crossing, the cable will likely be installed using a combination of cut and cover and jack and bore construction methods.
- Potential Modifications to Cable Route. For both the northern and southern cable routes, the connection into the substation will be dictated by Eversource and will be subject to various design standards such as the NESC, etc. Therefore, the routes may be refined prior to construction.

3.6 Electrical Interconnection

DWW Solar consulted with ISO-NE regarding interconnection of the Project in August of 2016. ISO-NE advised that, because the Project was expected to be interconnected with the Eversource 23kV distribution system, and because that portion of the distribution system did not contain any other generation, the interconnection of the TVS Project would not be subject to ISO-NE jurisdiction.

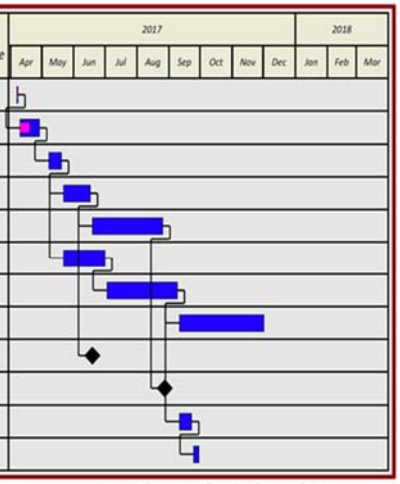
DWW Solar consulted with Eversource, as the Connecting Transmission Owner, throughout late 2016 and early 2017 and submitted a Large Generator Interconnection Request on February 13, 2017. The interconnection request included a one-line diagram consisting of 14 power inverter and transformer packages distributed throughout the Project. These inverter and transformer packages were shown to be connected in series on two collector cables, each of which connects to a switchgear to combine power from the northern and southern parts of the Project into one interconnect cable for delivery to the point of interconnect at the Eversource Northeast Simsbury Substation.

On April 19, 2017 Eversource and DWW Solar executed a System Impact Study Agreement. The agreement establishes that the TVS Project's interconnection design will be performed in accordance with the Eversource Guidelines for Generator Interconnection and ISO-NE requirements.

On May 24, 2017 Eversource held a "Customer Kick-off" scoping meeting with DWW Solar for the TVS Project. At the time of this petition, the System Impact Study is underway. Eversource has provided DWW Solar with the milestone schedule shown in Figure: Interconnection Schedule below, which anticipates execution of an Interconnection Agreement in September, 2017.

Figure: Interconnection Schedule

ID	Task Name	Resource Names	Start	Finish	Duration	% Complete
1	Impact Study Agreement	Eversource	04/07/2017	04/07/2017	1d	100%
2	Execute Agreement & payment	DWW	04/10/2017	04/28/2017	3w	50%
3	Kick Off meeting / resolve action items	Eversource / DWW	05/08/2017	05/19/2017	2w	0%
4	Civil Work Review & ID routing	Eversource	05/22/2017	06/16/2017	4w	0%
5	Impact Study Distribution	Eversource	06/19/2017	08/25/2017	10w	0%
6	Scope of Transmission study	Eversource / TRC	05/22/2017	06/30/2017	6w	0%
7	Transmission Impact Study	TRC	07/03/2017	09/08/2017	10w	0%
8	ISO-NE RC approval	Eversource	09/11/2017	12/01/2017	12w	0%
9	Facility Study Substation design Phase 1	Eversource	06/19/2017	06/19/2017	0w	0%
10	Facility Study Line work Phase 2	Eversource	08/28/2017	08/28/2017	0w	0%
11	Eversource Internal Project Approvals	Eversource	09/11/2017	09/22/2017	2w	0%
12	Interconnection Agreement	Eversource	09/25/2017	09/29/2017	1w	0%



DWW Solar II, LLC dba Simsbury Solar Farm
Preliminary Project Schedule April 26, 2017

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Project Benefits

Pursuant to CGS § 16-50p(c)(1), a project provides a public benefit if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." The Project will generate the bulk of its power during the summer electrical peak, thereby providing peaking resources when the New England grid has its greatest need. Moreover, the Project will help foster the state's goal of developing "renewable energy resources, such as solar and wind energy, to the maximum practicable extent" pursuant to CGS § 16a-35k.

The Project will provide substantial additional benefits to the State of Connecticut and the Town of Simsbury, including:

- Generation of 100 percent renewable energy;
- Energy generation without any air emissions, including greenhouse gas emissions;
- Energy generation without any water consumption or pollution;
- Preservation of 133 acres of forest, wetlands and open space on parcels totaling 289 acres in size;
- Enhance existing farmland soils by use of long-term cover crops such as cool season grasses that sequester atmospheric carbon in the soil and improve soil health.
- Maintain soil fertility by including species such as alfalfa and white clover that fix atmospheric nitrogen into forms available to grasses in the seed mix;
- Enhancement of pollinator habitat in two ways: 1) include flowering species such as white clover and alfalfa that attract pollinators in grass seed mixes, and 2) use of pilot wildflower plantings along certain perimeter fences to attract pollinators
- Retaining and maintaining two historic tobacco shed structures;
- Developing walking paths for use by the citizens of the Town of Simsbury;

- Potential displacement of older fossil fuel generation, either in totality or through offsetting when such fossil fuel generation will place electricity into the grid;
- Increased distribution of generation resources in the state;
- Decreased reliance on the importation of fossil fuels;
- A reliable source of energy that diversifies the State's generation portfolio mix and contributes Class I renewable energy as articulated in the State's renewable portfolio standards;
- Numerous economic benefits to the Town and the area, including significant tax revenue to the Town of Simsbury[2]; and
- The creation of jobs. Approximately 100 construction jobs and 5 permanent will be created.

Based on a capacity of approximately 26.4 MW at a capacity factor of nineteen (19) percent, the Project will generate over 40,000 megawatt-hours ("MWh") of Class I renewable energy per year. To put this into perspective, the Project is anticipated to provide sufficient power to supply the electricity needs of approximately 5,000 households. In addition, the Project is anticipated to provide the following reduction of air pollutants when compared to equivalent fossil fueled generation:

- 12,598 (metric tons/yr) total carbon dioxide reduction
- Carbon sequestered by 326,483 tree seedlings grown for 10 years
- Carbon sequestered by 11,925 acres of pine or fir forest

The electricity generated by the Project will provide power without carbon emissions equivalent to the following:

- 2,661 cars taken off the road annually
- 29,116 barrels of oil not combusted for electric generation annually

In summary, the Project is an exciting, state-of-the-art project that offers significant economic, environmental, and societal benefits to the citizens of the Town of Simsbury and the State of Connecticut. The Project will generate 100 percent clean, green, renewable zero-carbon generation adding much needed solar-generated electricity to Connecticut's fuel mix and increased access to renewable electricity in the region.

2 While economic issues are not relevant to the Siting Council's jurisdiction and decision-making criteria, economic benefits associated with the Project are included for illustrative purposes.

5

Local Input and Public Notice

5.1 Public Involvement and Outreach

During the design development of this Project, DWW Solar engaged state and municipal individuals, and the public. The following table presents a listing of the coordination and consultation meetings held prior to the filing of this Petition

Table 1 Public Meetings and Consultation

Date of Meeting	Location	Attendees	Matter discussed
3/2016	Simsbury Town Hall – Town Selectmen's Office	Town of Simsbury: Lisa Heavner-First Selectman, Tom Cooke-Director of Administrative Services, James Rabbit-Town Planner DWW: Aileen Kenney, Clint Plummer	DWW Solar provided an overview of the Project, discussed potential site layout and schedule for Clean Energy RFP and overall Project.
11/10/2016	Simsbury Town Hall – Planning Department	Town of Simsbury: James Rabbit, Mike Glidden-Assistant Planner DWW: Aileen Kenney VHB: Susan Moberg, Paul Vitaliano	DWW Solar provided an overview of the Project, including status of the Clean Energy RFP Award process, general Project details, potential mitigation options for the Town, public access, recreation, potential tax agreements with the Town.
3/23/2017	Simsbury Town Hall – Town	Town of Simsbury: Lisa Heavner, Tom Cooke, Jeff Shea-Town	DWW Solar provided an overview of the Project status relative to the Power Purchase Agreement and the Interconnection

Date of Meeting	Location	Attendees	Matter discussed
	Selectmen's Office	Engineer, Tom Roy-Director of Public Works, James Rabbit, DWW: Aileen Kenney VHB: Sue Moberg Pullman & Comley: Lee D. Hoffman Esq. River Bend Development: Tim Lescalleet	application; VHB provided a detailed description of engineering and environmental studies conducted to date; Lee Hoffman described the Town's role in the Siting Council review process; all parties agreed that an Open Meeting was appropriate. DWW committed to schedule the meeting.
4/27/2017	Simsbury Town – Selectmen's Chamber	Town of Simsbury: Tom Cooke, Jeff Shea, Tom Roy, James Rabbit, Kevin Kowalski-Fire Marshall DWW: Aileen Kenney, Claude Cote, Corey Kelkenberg, Dylan Levings VHB: Sue Moberg, Steve Kochis Pullman & Comley: Lee Hoffman Esq.	DWW provided Project overview, discussion centered around safety and fire access, discussion of interconnection cable in Casterbridge Crossing, outreach to Simsbury Airport and Farmington River Watershed recommended.
5/8/2017	Simsbury Clean Energy Task Force	Clean Energy Task Force: William Butler, Robert Beinstein, Mark W Scully, Susan Van Kleef, Regina Kathleen Pynn, James A Ray Simsbury resident: Susan Masimo DWW: Clint Plummer VHB: Sue Moberg	Description of Project provided, discussion centered around several issues including pollinators, walking paths, school/boy scout involvement, agriculture, invasive species, process for receiving public input, feedback loops.
5/11/2017	Town of Granby	Town of Granby: Bill Smith-Town Manager, Fran Armentano – Community Development DWW: Aileen Kenney VHB: Sue Moberg Pullman & Comley: Lee D. Hoffman, Esq.	General Project discussion. DWW gave basic information about the Project. Officials from Granby were solicited for a meeting because the Project is within 2500 feet of the Town boundary.
5/11/2017	CT State Historic Preservation Office	CT State Historic Preservation Office: Cathy Labadia, Deputy SHPO	Discussed the findings of the Phase 1a Cultural Resources Survey; appropriate level of effort for Phase 1b surveys (shovel testing); appropriate mitigation

Date of Meeting	Location	Attendees	Matter discussed
		DWW: Aileen Kenney VHB: Sue Moberg Heritage Consultants: David George	
5/11/2017	Henry James Memorial School Simsbury	DWW team, Pullman & Comley, VHB, the Public	DWW hosted Open Meeting. DWW provided a description of the Project and responded to questions from the public. See Exhibit D: › Meeting Notice › Abutters Mailing List › First Selectwoman's Report – May 8, 2017
5/22/2017	Simsbury Town – Selectmen's Chamber	Town Officials Members of the Public VHB: Sue Moberg	VHB attended this Board of Selectman meeting. VHB responded to questions of individual residents following the meeting.
6/7/2017	Town of Simsbury Senior Center	Town Officials Members of the Public DWW: Aileen Kenney, VHB: Paul Vitaliano, P.E.	DWW responded to questions from the Town and the Public at this Town-organized meeting.
6/22/2017	Simsbury Town – Selectmen's Chamber	Town of Simsbury: Lisa Heavner, Tom Cooke, Tom Roy, James Rabbit, DWW: Aileen Kenney VHB: Sue Moberg Pullman & Comley: Lee Hoffman Esq., EDR: Gordon Perkins	DWW presented the updates to the Project since the May 11 meeting and provided an update on the schedule for filing the Petition.
6/22/2017	Simsbury High School	DWW, Pullman & Comley, VHB, EDR, the Public	DWW hosted Open Meeting. DWW provided an overview of the Project revisions since the May 11 meeting to address abutter concerns, and responded to questions. See Exhibit D: › Meeting Notice › Abutters Mailing List › Presentation materials

On May 8 2017, DWW Solar established a Project website: http://dwwind.com/project/tobacco-valley-solar-farm/. The website is periodically updated with information regarding the Project.

Prior to the May 11 public meeting, Notice was sent to all Project abutters by U.S. Mail. The meeting was announced on the Town website and referenced in the May 8, 2017 edition of the First Selectwoman's Report. Additionally, the Petitioner arranged for 50 copies of Project informational flyers to be available at each of the following locations:

- Fitzgerald Supermarket
- Simsbury Parks and Recreation
- Simsbury Public Library
- Simsbury Senior Center (Eno Memorial Hall)
- Simsbury Town Hall

At the May 11 meeting, DWW Solar encouraged attendees to sign in and provide their email address. Following the meeting DWW has periodically sent Project notifications and updates by email to those electing to receive them.

Notification of the June 22 Public meeting was published in the Valley Breeze. A copy of the tear sheet is provided at Exhibit D. In addition, prior to the meeting, notice of the meeting was sent to all Project abutters via U.S. Mail and was posted on the Project website. Approximately 200 people were in attendance at the June 22 Public meeting.

Additionally, representatives of the Petitioner met individually with residents of Berkshire Way, Litchfield Drive and Flintlock Ridge Road.

5.2 Notice

As required by RCSA § 16-50j-40(a), the Petitioner provided notice of its intent to file this Petition to: (a) those adjacent property owners listed on Exhibit E and (b) the municipal officials and government agencies listed on Exhibit F. A copy of that notice is also included as part of each Exhibit. In addition, the Petitioner provided a copy of the Petition to the Towns of Simsbury and Granby. The Town of Granby is within 2,500 feet of the Project Site, and consequently must receive notice of this Project. Refer to Figure: Site Radius Map is provided at Exhibit B.

5.3 Response to Resident Concerns

During the May 11 and June 22 meetings, DWW Solar representatives took note of a variety of concerns expressed by abutters and residents. During the June 22 meeting, DWW Solar presented an updated layout which was directly responsive to the concerns raised by residents during the May 11 meeting. Remaining questions posed by residents are addressed in this petition.

Reductions of Project Size

Several abutters living along Litchfield Drive, Berkshire Way, and Hoskins Road voiced specific concerns regarding the Project and its effect on their views as well as effects on property values and vehicle traffic accessing the Project during and after construction. Vehicle access and effects on property values are addressed in Section 7.11 of this narrative.

During the May 11 meeting, in direct response to abutter concerns, DWW committed to preserve existing vegetated buffers along the property boundaries near Berkshire Way and Litchfield Drive. Subsequent to the May 11 meeting, DWW Solar and VHB attended additional meetings with concerned abutters in other areas abutting the Project. Additional commitments were made at these meetings to increase buffers along property lines.

DWW Solar and VHB revisited the Project layout and identified 6 separate locations where the original Project layout could be reduced, which reduction resulted in a substantial increase in the buffer between the Project and these adjacent areas. Half of these reductions resulted in the preservation of existing wooded areas. The other half resulted in the creation of buffer areas that are proposed to be landscaped or screened to reduce or limit views of the Project from adjacent areas.

The results of this analysis were presented at the June 22 Public Meeting and are depicted on Figure: Response to Residents' Concerns and the PowerPoint presentation from the meeting provided at Exhibit B and Exhibit D, respectively. The changes consisted of the following:

Area 1 – Howard Street. The original Project layout included a 6-acre solar array area including 2 equipment pads and a switchgear compound due south of the end of Howard Street. Review of the area following the May 11 meeting confirmed that ground elevations of the area proposed to be developed were significantly higher than surrounding areas. Clearing required for the Project would render this array area highly visible from the neighborhoods to the north, as well as the south. Therefore, that solar array was removed and the switchgear was relocated.

Area 2 – Casterbridge Crossing. DWW Solar and VHB met with Mr. Anthony Giorgio of Keystone Companies to discuss the Project. Mr. Giorgio indicated that he plans to begin construction of the final phases of Dorset Crossing in 2018. This would include replacement of the Casterbridge Crossing culvert over Saxton Brook and the construction of the approved multi-unit housing development on land abutting the Project. DWW Solar agreed to consider leaving a vegetated buffer along this property line. Upon review of this part of the Project, DWW Solar opted to pull the boundary of the Project back from this adjoining property boundary by a minimum of 100 feet, reducing the Project footprint by 5.3 acres in this location.

Area 3 – Berkshire Way. DWW Solar has relocated the Project 300 feet north of the property line along this boundary segment. This change results in the preservation of a 200-foot wooded buffer plus an additional 100-foot open space buffer between

the residences at the end of Berkshire Way and the eastern end of Litchfield Drive. This change resulted in a 3.9-acre reduction of the Project footprint.

Area 4 – Hoskins Road. Residents that travel along Hoskins Road expressed concern that the views along this roadway corridor would be affected by the Project. Consequently, DWW Solar moved the Project limit of development south from the shoulder of Hoskins Road to preserve some existing wooded areas and to allow for the creation of a vegetated buffer along this road frontage. This change resulted in a 1.9-acre reduction of the Project footprint.

Based on feedback from the public, DWW Solar has committed to preserve the two existing tobacco barns on the north side of Hoskins Road. These barns will provide some screening for passersby, and maintain the existing character of the roadway. Additionally, the hedgerow of existing trees along the north side of Hoskins Road will be preserved to the maximum extent possible.

Based on feedback received from abutters at the June 22 meeting, DWW Solar has shifted the temporary construction entrance east along Hoskins Road to access the Project Site between the existing tobacco barns.

Area 5 – Howard/Gordon/Knollwood. DWW Solar moved the limit of development back from the property line an additional 50 feet to increase the area available for screening to 100 feet from the property line. This change resulted in a 0.3-acre reduction of the Project footprint.

Area 6 – Knollwood Circle. DWW Solar moved the limit of development back from the property line an additional 50 feet to increase the area available for screening to 100 feet from the property line. This change resulted in a 0.8-acre reduction of the Project footprint.

Collectively these reductions decrease the Project footprint by approximately 18.2 acres.

Recreation

Concerns were raised at several meetings with Town Officials and members of the public regarding continued access to the Site for recreation. In response to these concerns, DWW Solar has made provisions for the development of several miles of rustic walking paths to be included as a part of the Project. Access onto the Project Site from adjacent parcels will remain un-obstructed. For safety reasons and to comply with the NESC, the Solar arrays and associated electrical equipment will be fenced off from these walking paths.

Aesthetics

DWW Solar and EDR met with several abutters to understand their concerns regarding views from their properties into the Project Site. EDR competed a visual assessment and developed a robust screening plan to mitigate impacts to views

from adjacent properties. The visual analysis is described in detail in Sections 6.6 and 7.6, and attached as Exhibit G.

Agriculture

Town officials and some abutters raised the issue of preservation of the agricultural soils on the Project Site. Retaining the existing agricultural value of the soils has been one of the defining design principles for the Project from the outset of development. Wherever possible, the Project will be constructed directly over the existing soils, leaving the soils intact and undisturbed. In limited areas, earthwork is needed to level the land to ensure access for emergency vehicles or to incorporate stormwater runoff controls. The area of the Project proposed on agricultural fields is approximately 126 acres. The area of the Project requiring grading of those fields is about 9 acres, or about 7 percent of the field area proposed for construction. Some areas of existing field fall within the nominal 100 foot no-shade zone, where vegetation needs to be maintained at a minimum level to avoid shading the solar panels. These field areas will not be affected by the Project other than annual mowing. A more detailed description of vegetation management is provided at Section 7.1.

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Affected Environment

DWW Solar performed an assessment of existing environmental and social resources in the vicinity of the Project Site. In accordance with the Siting Council guidance document Petition for a Declaratory Ruling for Renewable Energy Facility (August 2016), environmental considerations evaluated included air emissions, water consumption and discharge, floodplains, aquifers, and groundwater classification, Federal Aviation Administration (FAA) air hazard determination, trees and tree clearing, state and federal regulated rare, threatened and endangered species, wetlands and watercourses, vernal pools, carbon sequestration, and visual impacts. Based upon the input received from the public during the various meetings documented in Section 5.0 above, DWW Solar has included in this Petition additional information regarding wildlife and habitat, stormwater runoff, cultural resources, acoustical analyses, public health and safety, and land use.

The following sections provide the results of the affected environment evaluations.

6.1 General Site Description

The Project Site consists of five separate parcels of land totaling approximately 289 acres off Hopmeadow Street (US 202/CT 10), Hoskins Road and County Road in the Town of Simsbury.

The Project Site contains agricultural fields, woodland and wetland areas. Dirt farm roads interconnect the fields and provide access to public roadways. The Site is crossed by the Eversource 1256 Line transmission line ROW and a municipal sewer easement.

The Project Site is bounded on the west by residential subdivisions and the Squadron Line School, on the north by open space, on the east by residential land uses, open space and the Eversource substation, and on the south by open space.

6.2 Wetlands

A delineation of inland wetlands and watercourses as regulated under the Connecticut Inland Wetlands and Watercourse Act (Sections 22a-36 through 22a-45 of the CGS) was completed within the Project Site between December 2016 and April 2017. This delineation determined that there are nine wetland systems within the Project Site including three perennial watercourses and four farm ponds. Refer to Figure: Wetland Delineation Map provided at Exhibit B. A Soil Scientists Report is provided at Exhibit H.

Wetland 1

Wetland 1 consists of forested wetlands associated with Munnisunk Brook, a perennial watercourse. Munnisunk Brook enters the Project Site at a culvert under County Road. Here the stream gradient is high and the brook is confined to a narrow, incised channel with steep banks. An unimproved farm road parallels the eastern bank of the brook behind Litchfield Drive at a higher elevation and provides access to farm fields north of County Road. The baseline flow in Munnisunk Brook receives hydrologic support from groundwater discharge in its headwaters and the outwash deposits it flows through. This flow is supplemented by surface runoff during storm events. The brook flows northerly into the Site to a farm pond created by an earthen berm constructed across the brook. The outlet structure for this pond is a drop inlet that restricts fish and wildlife passage. An unnamed intermittent tributary stream flows into the pond from the south.

Downstream of the farm pond, Wetland 1 and Munnisunk Brook continue north and then east, generally circumscribing the property boundary, until the stream and wetland corridor veer northeastward between Old Simsbury Road and Brettonwood Drive. Munnisunk Brook eventually joins the Farmington River east of the Simsbury Airport.

Vegetation within Wetland 1 includes red maple (*Acer rubrum*), American elm (*Ulmus americana*), eastern hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*), and white pine (*Pinus strobus*) in the tree canopy; highbush blueberry (*Vaccinium corymbosum*), arrowwood (*Viburnum recognitum*), and Winterberry (*Ilex verticillata*) in the shrub strata; cinnamon fern (*Osmundastrum cinnamomeum*), skunk cabbage (*Symplocarpus foetidus*), sensitive fern (*Onoclea sensibilis*), jewelweed (*Impatiens capensis*) and evergreen wood fern (*Dryopteris intermedia*) in the herbaceous layer.

Soils examined in Wetland 1 included sloping phases of the Walpole sandy loam, a red parent material variant of the Walpole series, and very poorly drained soils similar to the Scarboro series. Small areas of recent alluvium are also present along Munnisunk Brook. The delineation included phases of poorly and very poorly drained soils that have been partially buried by sediment washed down the slopes of the high outwash terraces.

Wetland 2

Wetland 2 is a sloping wetland that receives runoff and sediment from the agricultural fields to its south. The surface outlet for this wetland is obscured by developments along Knollwood Circle. No standing water was observed in this wetland when it was delineated in January 2017. The southern finger of this wetland receives runoff from the agricultural fields.

Vegetation within the wetland included red maple, American elm, white pine, yellow birch, highbush blueberry, arrowwood, winterberry, cinnamon fern, sensitive fern, skunk cabbage, and poison ivy (*Toxicodendron radicans*).

Soil series observed at Wetland 2 include the very poorly drained Scarboro muck and poorly drained Walpole sandy loam.

Wetland 3

Wetland 3 is a very small wetland depression that appears to have been created by an excavation close to the property boundary proximate to Knollwood Circle. Vegetation and soils observed are comparable to Wetland 2.

Wetland 4

Wetland 4 is a farm pond that was likely excavated in uplands. Spoils spread along the south and eastern sides of the pond and are now wooded. The very poorly drained Scarboro soil unit mapped south of the pond is broken by a topographic saddle which separates two wetland units. The pond has no visible inlet or outlet structures; however, water can be pumped into this pond from the impoundment on Munnisunk Brook (Wetland 1) and water can also be pumped from this pond to irrigate crops.

Vegetation present in the narrow fringe around the pond includes red maple, arrowwood, buttonbush (*Cephalanthus occidentalis*), multiflora rose (*Rosa multiflora*), poison ivy, sensitive fern and reed canary-grass (*Phalaris arundiacea*).

Wetland 5

Wetland 5 is a forested wetland proximate to the cul-de-sac of Berkshire Way and Wetland 4. The portion of Wetland 5 delineated on the Project Site extends from a larger system that continues offsite. Based on the examination of aerial photographs and evidence observed from within the property, Wetland 5 appears to be separate from Wetland 6. This conclusion was not able to be verified in the field since it required accessing private properties outside of the boundary of the Project Site.

Vegetation present within Wetland 5 includes red maple, eastern hemlock, white pine, arrowwood, winterberry, poison ivy, and sensitive fern.

Soils mapped by the Natural Resources Conservations Service were confirmed in the field and including the Walpole sandy loam and Scarboro muck.

Wetland 6

Wetland 6 and the headwaters of Saxton Brook begin off the Project Site in woodlands near the intersection of Saxton Brook Drive with County Road. From that location, the wetland continues north within wooded areas bounded on the west by the Saxton Brook Drive residential neighborhood and on the east by the Project Site. Saxton Brook crosses out of and back into the Project Site three times. Saxton Brook is culverted under a roadway with a sanitary sewer interceptor. Downstream of this sewer crossing Saxton Brook is impounded by an earth berm where excavation and earth berm construction were used to create a farm pond. The outlet structure for this pond apparently failed and flow out of the pond is through a breach in the berm. This pond has been used as a source of irrigation water. Baseline flow in Saxton Brook and hydrologic support of this wetland is driven by groundwater discharge from the outwash terrace forming the adjacent uplands supplemented by runoff during storm events. Downstream segments of Saxton Brook cross under Casterbridge Crossing via two 24-inch corrugated polyethylene pipes. Ultimately, the perennial Saxton Brook discharges to the Farmington River east of Hopmeadow Street.

Wetland 6 is a forested wetland dominated by red maple, American elm, white pine, yellow birch, and eastern hemlock in the tree canopy. Common shrubs and herbs include highbush blueberry, arrowwood, winterberry, multiflora rose, spicebush (*Lindera benzoin*), poison ivy, skunk cabbage, jewelweed, cinnamon fern and sensitive fern.

Soil series present in Wetland 6 include Scarboro muck and Walpole sandy loam. Smaller areas of poorly drained alluvial soils are also present, but are similar to the Walpole series.

Wetland 7

This small wetland depression is impounded by a fill used to construct an abandoned access road constructed along the Project Site property boundary across the south side of this wetland unit. A small diameter pipe was installed across this road but does not drain the lowest part of the wetland. Soils are very cobbly to stony and have a mantle of sediment washed off the proximate farm fields.

Wetlands were delineated where the mantle of sediment was less than 12 inches thick and the underlying soil was determined to be poorly drained. The wetland is a partially buried phase of the Walpole sandy loam. Red maple and spicebush common in this small wetland.

Wetland 8

Wetland 8 includes the perennial Bissell Brook, a forested discharge slope, an excavated/impounded farm pond, and smaller intermittent tributaries which join Bissell Brook. The wetland is situated along the southernmost extents of the Project

Site south of Hoskins Road. Baseline flow in Bissell Brook and hydrologic support of this wetland is driven by groundwater discharge in the headwaters of Bissell Brook supplement by the discharge from the outwash terrace north of the wetland and by runoff during storm events. East of the farm pond, some of the delineated wetland apparently developed in pond spoils spread on the slope. Portions of the wetland near Bissell Brook were ditched in the past. The confluence of Bissell Brook with the Farmington River occurs south of Tariffville Road.

Soils mapped in this wetland include Scarboro muck, Walpole sandy loam, Fluvaquents-Udifluvents complex, frequently flooded (alluvial soils). In addition to the Walpole series, some of the soils on the wetland slopes are a variant of this series formed in red parent material. Some of the poorly drained soils formed in red parent material do not have low chroma matrices typical of wetland soils. Despite the mapped complex, most of the alluvial soils examined along Bissell Brook were poorly drained (Fluvaquents). The Udifluvent component of the complex may be more prevalent downstream of the Project Site.

Wetland 8 is a forested wetland characterized by red maple, white pine, yellow birch, and eastern hemlock in the tree canopy. Spicebush, highbush blueberry, arrowwood, winterberry, sweet pepperbush (*Clethra alnifolia*), and multiflora rose are common shrubs. Skunk cabbage, marsh blue violet (*Viola cucullata*), jewelweed, golden ragwort (*Packera aurea*), cinnamon fern and sensitive fern are common herbaceous species.

Wetland 9

This small seasonal hillside seep does not have an inlet or outlet. This wetland is difficult to differentiate from the surrounding woods, and was separated by close examination of the limits of poorly drained soils.

The forested wetland contains red maple, white pine, eastern hemlock, highbush blueberry, arrowwood, sweet pepperbush and cinnamon fern.

Soils consist of a red variant of the poorly drained Walpole sandy loam.

6.3 Wildlife and Habitat

VHB performed a wildlife evaluation of the Project Site. Wildlife resources were characterized through a series of surveys, including bird surveys, vernal pool surveys, mammal and reptile observations, and searches for host-plant species for State-listed Lepidoptera. These field efforts were conducted between January and early June 2017. A detailed description of investigation methods and findings is provided in Exhibit I.

Vegetation Cover Types

The existing cover types within the Project Area were evaluated to develop an understanding of the wildlife habitat function provided. The cover types were then used to identify anticipated species likely to be found in the available habitat types.

Approximately 131 acres of the Project Site consists of agricultural fields. During recent rotations, squash has been planted in hill and furrow design using plastic mulch and drip irrigation. Corn was planted in the field south of Hoskins Road during the 2016 growing season. The field was fall-seeded with annual rye grass which resulted in dense, tall grass cover during the spring of 2017.

The agricultural field cover type corresponds to the Manmade designation of Key Habitat 10, Sub-habitat Agricultural Lands described in the 2015 Connecticut Wildlife Action Plan (CWAP; CTDEEP, 2015). The agricultural fields provide foraging grounds for species such as mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), common grackle (*Quiscalus quiscula*), Canada goose (*Branta canadensis*) and small mammals such as southern red-backed vole (*Myodes gapperi*), white-footed mouse (*Peromyscus leucopus*) and Virginia opossum (*Didelphis virginiana*). Disturbance associated with agricultural operations precludes utilization by most grassland birds because of the lack of suitable habitat and/or nest failure that may occur from the agricultural operation regime. Song sparrow (*Melospiza melodia*), chipping sparrow (*Spizella passerina*), and house sparrow (*Passer domesticus*) were observed foraging in fallow fields. Despite the ongoing agricultural operations, killdeer (*Charadrius vociferous*) appear to nest on the exposed soils between the hills of squash.

Most of the Project Site, approximately 151 acres, is comprised of forest and woodland. The forests can be generally classified as:

- upland broad-leaved deciduous, approximately 81 acres,
- upland coniferous evergreen, approximately 36 acres, and
- forested wetland, approximately 34 acres.

Farm trails pass through these forests to access the agricultural fields. The forests provide habitat for several year-round resident and neo-tropical migrant songbirds and corresponds to the Upland Forest Key Habitat and includes the Oak Forest and Coniferous Forest Sub-habitats listed in the CWAP. Tables included in Exhibit I list the species observed in the Upland Forest Key Habitat.

A scrub-shrub cover type is maintained in the Eversource electric transmission ROW by removing species that could grow to a height that would interfere with the overhead powerlines. This cover type also is part of the CWAP Key Habitat 10, Sub-habitat Public Utility Transmission Corridors. The early successional vegetation managed in the corridor provides habitat for species such as indigo bunting (*Passerina cyanea*), prairie warbler (*Setophaga discolor*), and eastern cottontail (*Sylvilagus floridanus*).

There are four farm ponds that were constructed to provide irrigation for agricultural operations. These ponds provide habitat for obligate aquatic species and attract birds and wildlife that include open water in the habitats that they utilize. Some observations include herpetofauna such as painted turtle (*Chrysemys picta*), American toad (*Anaxyrus americanus*), and wading birds such as great blue heron (*Ardea herodias*). Each of the four pond supports fish populations. The two ponds constructed on streams contain golden shiner (*Notemigonus crysoleucas*) and all ponds are inhabited by species of centrarchids (bass and sunfish). Other notable bird species observed at the ponds include belted kingfisher (*Megaceryle alcyon*), hooded merganser (*Lophodytes cucullatus*), green heron (*Butorides virescens*), and wood duck (*Aix sponsa*).

Rare Threatened and Endangered Species

The Connecticut Endangered Species Act (CT ESA), passed in 1989, was enacted to protect Connecticut's rare plant and animal species from threats that could lead to their extirpation. The goal of the CT ESA is to conserve, protect, restore and enhance endangered or threatened species and their essential habitats. Under the CT ESA, species are listed according to their level of risk for extirpation. Their status is reviewed every five years by CT DEEP. Species are listed in one of three designations:

"Endangered Species" *means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act (ESA).*

"Threatened Species" *means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the ESA, except for such species determined to be endangered by the Commissioner of the CTDEEP in accordance with section 4 of the CT ESA*.

"Species of Special Concern" *means any native plant species or any native non-harvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state*.

VHB initiated consultation with the CT DEEP Natural Diversity Data Base (NDDB) in December 2015 (refer to NDDB Correspondence provided at Exhibit J.) The CT DEEP NDDB species record information for the Project Site lists 23 State-listed species that have the potential to occur within the Project Site. The CT DEEP NDDB performs environmental reviews as part of the CT ESA to determine the impacts of proposed development projects on State-listed species to help conserve Connecticut's biodiversity.

Table 2 State-listed species that have the potential to occur within or adjacent to the Project Site

Species Common Name	Scientific Name	State-Listed Status	Habitat Type(s)[1]
BIRD SPECIES			
Eastern meadowlark	*Sturnella magna*	Threatened	Large, grassy fields such as hayfields and pastures
Horned lark	*Eremophila alpestris*	Endangered	Beaches and open areas along the coast as well as open grassland and fallow agricultural fields
Brown thrasher	*Toxostoma rufum*	Special concern	Suburban and rural areas, particularly in thickets, brushy hillsides and woodland edges; open areas with patches of bare ground
Savannah sparrow	*Passerculus sandwichensis*	Special concern	Grassy fields with damp soils and upland areas bordering on salt marshes
Vesper sparrow	*Pooecetes gramineus*	Endangered	Dry upland portions of pastureland, sandy fields, hayfields, brushy edges of farms fields, and extensive openings in pine woodland
Grasshopper sparrow	*Ammodramus savannarum*	Endangered	Moderately dry grasslands, typically with bunch grasses and areas of open ground
Whip-poor-will	*Caprimulgus vociferus*	Special concern	Scrubby immature woods or areas of regrowth following disturbance in mature forests. Prefers sites with relatively dry, sandy soils.
HERPETOFAUNA			
Eastern box turtles	*Terrapene carolina*	Special concern	Old field and forested habitat, including power lines and logged woodlands; often found near small ponds and streams
Wood turtles	*Clemmys insculpta*	Special concern	Riparian habitats bordered by floodplain, woodland, or meadow
Hognose snakes	*Heterodon platirhinos*	Special concern	Sandy soil in fields and forest edges

Species Common Name	Scientific Name	State-Listed Status	Habitat Type(s)[1]
Northern leopard frog	*Rana pipiens*	Special concern	Prefers grassy habitats and meadows with forbs
MAMMALS			
Red bat	*Lasiurus borealis*	Special Concern	Branches of deciduous or coniferous trees or in woodpecker cavities in snags
Silver-haired bat	*Lasionycteris noctivagans*	Special Concern	Coniferous and deciduous forests and forage near bodies of water
Hoary bat	*Lasiurus cinereus*	Special Concern	Forest and small open areas that provide edges
INVERTEBRATES			
Rapids clubtail	*Gomphus quadricolor*	State-Threatened	High and moderate gradient coldwater habitats associated with brooks and streams with strong currents over clean gravel, cobbles or bedrock
Big sand tiger beetle	(*Cicindela formosa generosa*)	Special Concern	Exposed sandy substrates
Spinose flower moth	*Schinia spinosae*	Special Concern	Associated with xeric, open sand plains where its host plant, coastal jointed knotweed (*Polygonum articulatum)* is found
scribbled sallow moth	*Sympistis perscripta*	Special Concern	associated with infertile, droughty, open habitats
FRESHWATER MUSSELS			
Dwarf wedgemussel	*Alasmidonta heterodon*	Endangered	Creek and river areas with a slow to moderate current and a sand, gravel, or muddy bottom
Eastern pearlshell mussel	*Margaritifera margaritifera*	Special Concern	Most often found in streams and small rivers that support trout or salmon populations (cold water fishery)
Eastern pondmussel	Alasmidonta heterodon	Special Concern	Variety of habitats such as coastal ponds, streams, and rivers

VASCULAR PLANTS			
Tall swamp rosette-panic grass	*Dichanthelium scabriusculum*	Endangered	found along dry sandy roadsides, grasslands, and open ROWs also mesic to hydric, rocky or boggy soils next to streams
Davis' sedge	*Carex davisii*	Threatened	associated with floodplains and appear to require some habitat disturbance from flooding or anthropogenic origin
Starry campion	*Silene stellate*	Threatened	found in deciduous woodlands, rocky forests, riverbanks, and roadsides
Dillenius' tick trefoil	*Desmodium glabellum*	Special Concern	inhabits dry sandy woods

1 Habitat types based on descriptions from Bevier, ed. 1994, The Atlas of Breeding Birds of Connecticut

VHB developed a Conservation Measures Plan and submitted it to NDDB on April 25, 2017 (Refer to Exhibit J.) VHB has performed a series of surveys for the State-listed species and reported findings to NDDB.

The Official Species List generated by the USFWS IPaC tool indicates the that the federally-threatened northern long-eared bat (*Myotis septentrionalis*) has the potential to occur in the Project Site.

Breeding Bird Inventory & Surveys

An inventory of potential breeding birds was developed based on information from field observations, the Atlas of Breeding Birds of Connecticut (Bevier ed. 1994) and New England Wildlife (DeGraaf and Yamasaki 2001), and NDDB data. Line transect surveys using call back surveys for State-listed species savannah sparrow (*Passerculus sandwichensis*), vesper sparrow (*Pooecetes gramineus*), grasshopper sparrow (*Ammodramus savannarum*) were conducted by VHB biologists on March 29, May 11, and June 8, 2017. Nighttime surveys for eastern Whip-poor-will (*Caprimulgus vociferous*) were conducted on May 11 and June 12, 2017.

As a result of the daytime and nighttime surveys, a total of 62 bird species were identified in the Project Site and 24 of these species appear in the Connecticut Wildlife Action Plan (CT DEEP, 2015) as species of Greatest Conservation Need (GCN). No state-listed species were observed. Detailed results of the surveys are provided at Exhibit I.

Vernal Pool Survey

VHB biologists conducted vernal pools surveys of the entire Project Site. The only potential vernal pools identified were four farm ponds created to provide irrigation for agricultural operations. VHB investigated the ponds on April 3, April 19, and May

11, 2017 to attempt to detect obligate vernal pool species. Each of the ponds were found to contain fish populations and therefore do not meet the criteria for vernal pool designation. Further details concerning the vernal pool surveys are provided in a separate memo dated June 16, 2017 provided at Exhibit K.

Mammals

VHB biologists documented observations of mammals during the several field investigations performed within the Project Site between January 2017 and early June 2017. Direct and indirect observations, along with species that may utilize the Project Site, are documented in Exhibit I. Notable field observations include black bear (*Ursus americanus*) footprints along a farm field perimeter road, Virginia opossum, raccoon (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*). Black bear is a GCN species listed in the CWAP.

Plant Community Resources

Simsbury is situated in the Lower Connecticut River Valley subsection of the Laurentian Mixed Forest Provence (Keys et al., 1995). The property has two principle cover types, open agricultural lands and forest lands. Forest types include stands dominated by mixed deciduous hardwoods, evergreen coniferous trees, and mixed stands containing coniferous and broad-leaved deciduous trees. Refer to Exhibit I for a detailed evaluation of plant communities.

According to the classification system prepared by Metzler and Barrett (2006), the dominant upland forest type belongs to the northern red oak/black oak (*Quercus rubra/velutina*) and Blue Ridge blueberry (*Vaccinium pallidium*), and a variant of this community with white pine (*Pinus strobus*) present as a codominant. Witch hazel (*Hamamelis virginiana*), maple-leaved viburnum (*Viburnum acerifolium*), and American hazelnut (*Corylus americana*) are common shrubs in these forests. Common herbaceous species include hay-scented fern (*Dennstaedtia punctilobula*), wintergreen (*Gaultheria procumbens*), wild sarsaparilla (*Aralia nudicaulis*), and white wood aster (*Eurybia divaricate*).

A smaller area of the Sugar maple (*Acer saccharum*), White ash (*Fraxinus americana*) / New York fern (*Thelypteris noveboracensis*) community occurs on the south facing seepage slopes above Bissell Brook near the southern limits of the Project Site. Along with the named species in this community oaks, eastern hemlock, yellow poplar, and white pine occupy the tree canopy. Witch hazel and spicebush (*Lindera benzoin*) are common shrubs and nightcaps (*Anemone quinquefolia*) is a very common spring flower on the forest floor.

The forested wetlands on the property belong to two different classifications of red maple (*Acer rubrum*) dominated forest. The most common is the red maple/northern spicebush community which occurs streamside along Bissell Brook, Saxton Brook, Munnisunk Brook and on seepage slopes above these streams. The red maple/highbush blueberry (*Vaccinium corymbosum*) community is less common and occurs in wetland depressions such as the wetland southwest of Knollwood

Drive (Wetland 2). Other common shrubs in these wetlands include winterberry (*Ilex verticillata*), northern arrowwood (*Viburnum dentatum*), and maleberry (*Lyonia ligustrina*). Herbaceous species commonly found in these wetlands include skunk cabbage (*Symplocarpus foetidus*), cinnamon fern (*Osmundastrum cinnamomeum*), jewelweed (*Impatiens capensis*), and fowl mana grass (*Glyceria striata*).

Portions of the steeper ravine slopes and bottoms along Munnisunk Brook and to a lesser extent Bissell and Saxton Brooks host an Eastern hemlock (*Tsuga canadensis*) forest cover type. This hemlock dominated forest straddles upland and wetland soil types and transitions to areas dominated by red maple, red oak, or white pine.

6.4 Surface and Groundwater Resources

Surface Water and Floodplain

Three principal surface waters are present in the vicinity of the Project Site: Munnisunk Brook, Saxton Brook and Bissell Brook. Each of these surfaces waters generally flow from west to east, having their headwaters within or proximate to the Project Site, and discharging ultimately to the Farmington River east of the Site. Additionally, there are 4 farm ponds within the Site boundaries. Two of these ponds occur as impoundments, one on Munnisunk Brook and the other on Saxton Brook. The other two ponds were created by excavation into the groundwater table.

Refer to Figure: Floodplain, Surface & Groundwater Resources Map provided at Exhibit B.

Munnisunk Brook

Munnisunk Brook enters the Project Site via a culvert under County Road near the northwest corner of the Site. Munnisunk Brook flows easterly around the perimeter of the northern Project parcel through woods and wetlands. The brook receives groundwater discharge to baseflow and surface runoff from the Project Site.

Munnisunk Brook is identified as a Class A Surface Water by the CT DEEP in the Connecticut Water Quality Standards (RCSA 22a-426-1 et seq.) The designated uses for Class A waters are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Town of Simsbury (Panel 09003C0191F, effective date September 26, 2008) identifies a Zone AE Special Flood Hazard Area (SFHA) along Munnisunk Brook. Zone AE is defined as areas inundated by the 1% annual chance flood where base flood elevations (BFE) have been determined. Flood elevations along this stream gradient range from 276 feet above the North American Vertical Datum of 1988 (NAVD 88) adjacent to County Road to approximately 210 feet where the brook leaves the Project Site north of Knollwood Circle.

Floodway is also mapped associated with the Brook. FEMA defines Floodway as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height."

Saxton Brook

The headwaters of Saxton Brook begin off the Project Site in woodlands near the intersection of Saxton Brook Drive with County Road. From that location, the brook continues north within wooded areas bounded on the west by the Saxton Brook Drive residential neighborhood and on the east by the Project Site. The brook continues east across the Site, and continuing through Town-open space before crossing under Casterbridge Crossing. CT DEEP classifies this perennial watercourse as a Class A Surface Water.

FEMA has mapped Zone A SFHA associated with Saxton Brook. SFHA Zone A is defined as areas inundated by the 1% annual chance flooding, for which no BFEs have been determined.

Bissell Brook

The perennial Bissell Brook is situated along the southernmost extents of the Project Site south of Hoskins Road. Baseline flow in Bissell Brook is driven by groundwater discharge in the headwaters of Bissell Brook supplement by the outwash terrace north of the wetland and by runoff during storm events. Bissell Brook joins the Farmington River south of Tariffville Road.

CT DEEP classifies this perennial watercourse as a Class A Surface Water. FEMA has mapped Zone A SFHA associated with the brook.

Groundwater Resources and Aquifer Protection

The Simsbury Zoning Regulations (effective January 10, 2016), define an aquifer as *land having coarse grained stratified drift deposits bearing water and capable of sustaining a public and private water supply*. The CTDEEP provides a broader definition including *any soil or rock formation that is capable of yielding usable amounts of water to a water supply well*.

In general, eastern portions of the Project Site are included in the Town's Aquifer Protection Area. This designation is consistent with the surficial geology of the area which is mostly glacial outwash.

The Zoning Regulations stipulate general design requirements for uses in an Aquifer Protection Zone. Site stormwater drainage should be designed for maximum aquifer recharge in compliance with the Town of Simsbury regulations. The Zoning Ordinance stipulates that should there be any hazardous materials used or stored at the Project, a hazardous materials management plan must be developed and submitted to the Town.

6.5 Stormwater

VHB performed an analysis of surface water runoff conditions in accordance with the Connecticut Stormwater Quality Manual (CT Department of Environmental Protection, 2004) (the Stormwater Manual). The Stormwater Manual defines stormwater runoff as "surface flow from precipitation that accumulates in and flows through natural or man-made conveyance systems during and immediately after a storm event or upon snowmelt." In some situations, runoff is a cause for concern because it may convey pollutants from a source, such as a parking lot, to sensitive receiving areas such as streams and wetlands. In other cases, runoff may cause soil erosion if the runoff flow rate is very high or the runoff flows over disturbed areas. Eroded soil would be transported downslope and deposited in the same sensitive streams and wetlands.

The Stormwater Manual outlines the process for modelling existing and future runoff characteristics by evaluating such parameters as surface topography, vegetation, soil properties, surficial geology, drainage patterns and area. Taking these characteristics into account, the model can be used to determine existing runoff flow rates and volumes discharging from a site into receiving waters or "design points". A similar process is undertaken for the proposed future conditions to determine future runoff rates and volumes.

The Stormwater Manual requires that changes to runoff rates, volumes or patterns cannot be caused by any proposed developments, and consequently, if the analysis described above identifies a change to drainage patterns or an increase in the rate of stormwater runoff, project developers are required to mitigate these alterations. Mitigation alternatives include detention basins, infiltration systems, swales, etc.

The Project Site is mostly managed in agriculture operations or as forest with little existing impervious surface, beyond the five tobacco barns and unimproved packed dirt farm roads. The soils within the Project Site are mostly derived from outwash and have high internal permeability rates. Under existing conditions precipitation can infiltrate into the ground or flow overland as runoff.

In agricultural fields, the rate and volume of runoff are influenced by conditions in the soil and by the cover on the soil. Runoff rates would be highest when the soil is frozen or thoroughly saturated and there is little vegetative cover or stubble in the fields protecting the soil surface. Storm events during such periods would lead to accelerated soil erosion rates with the higher levels of suspended solids in stormwater runoff. In addition to fine soil separates, runoff from agricultural fields may contain higher levels of plant nutrients and other pollutants associated with crop management.

In forested areas, the tree canopy intercepts precipitation and the litter layer protects the mineral soil surface from the forces of rain drop impact. Forested parts of the Project Site with near level or gentle slopes favor infiltration. Runoff from forested areas is generally considered to be of higher quality as there is little opportunity for soil erosion and sediment transport in runoff.

VHB's analysis of existing conditions determined that untreated stormwater runoff from most the Project Site flows overland towards the wetland systems associated with Munnisunk Brook, Saxton Brook, Bissell Brook, or neighboring properties. A small portion of runoff in the northeastern part of the Project Site flows overland to residential properties on Knollwood Circle and Howard Street where it is ultimately captured and discharged to an unnamed brook. The Project Site is generally at a higher elevation throughout the agricultural fields and slopes down in all directions to the adjacent wetlands systems. The Project Site is characterized by steep slopes in many areas between the agricultural fields and the wetlands systems. The Project Site contains 10 subwatershed areas that drain to 5 existing design points.

The results of the existing conditions analysis are provided in the Stormwater Report Exhibit L.

6.6 Scenic Values

DWW Solar has engaged EDR, a firm with 38 years of experience providing visualization, visibility assessment, and visual impact analysis services. EDR has conducted an extensive assessment of the Project site and abutting areas to:

- Describe the visible components of the proposed Project.
- Evaluate the potential visibility of the Project within the study area.
- Identify key views for visual assessment.
- Assess the potential visibility of the proposed Project.
- Identify potential mitigation measures to minimize Project visibility.

In order to conduct this analysis, EDR defined a visual study area of 0.5-mile buffer around the Project Site. Within that area, the existing visual character and the general land use were documented. The existing visual character of this area can be defined by gently rolling topography, mature woodlots interspersed with suburban residential lots fed by winding local roads which stem from the main feeder streets such as County and Hoskins Road. Land use within the visual study area consists of primarily of medium density residential development with some commercial development, and active agricultural crop fields scattered throughout. Additionally, there are several high density residential complexes centered on or around Hopmeadow Road to the east of the Project.

These characteristics were used as the baseline conditions for the study area for use in the proposed conditions analysis. The proposed conditions analysis is discussed in Section 7.6. The Visual Impact Analysis is provided at Exhibit G.

6.7 Cultural Resources

DWW Solar retained Heritage Consultants LLC to conduct a Phase IA Cultural Resources Assessment (the Heritage survey) of the Project Site. The Heritage survey was prepared by conducting a contextual overview of the area's prehistory, history,

and natural setting; literature search to identify and discuss previously completed cultural resources surveys and previously recorded cultural resources in the region encompassing the study area; a review of readily available historic maps and aerial imagery depicting the study area in order to identify potential historic resources and/or areas of past disturbance; a pedestrian survey and photo-documentation of the Project Site in order to determine its archaeological sensitivity; and preparation of the survey report. The Phase 1a Cultural Resource Survey report is provided at Exhibit M.

The Heritage survey identified several potentially historically significant above ground structures at the Project Site and abutting areas: 5 Tobacco Sheds, 45 Hoskins Road, 85 Hoskins Road, 100 Hoskins Road, and 10 County Road. Additionally, Heritage identified two archaeological sites: Site 128-52 which had been previously documented, and Locus 1 which was identified during the Heritage survey. Lastly, Heritage used combined data from the historic map and aerial image investigations, chain of title research, and the pedestrian survey to stratify the proposed study area into zones of no/low, moderate, and high archaeological sensitivity. These results are presented on Figure: Phase 1a Cultural Resource Survey.

Heritage recommended a combination of further investigation into the low moderate and high sensitivity areas and the two archaeological sites, avoidance of the tobacco barns, and screening to mitigate views from the historic structures.

6.8 Aeronautical Facilities

There are two public airports in the vicinity of the Project Site: Simsbury Airport in Simsbury Connecticut, and Bradley International Airport in Windsor Locks Connecticut. The airports are located in the FAA New England Region, and are subject to FAA regulation. Refer to the Aeronautical Resources Figure provided at Exhibit B.

Simsbury Airport (4B9) is located approximately 4,400 feet (0.8 miles) northeast of the Project Location. The airport has two runways (Runway 3/21), approximately 2,205 feet in length. The airport is privately owned and operated by the Simsbury Flying Club, and supports 13 based aircraft. Simsbury Airport does not have an Air Traffic Control Tower (ACTC) and is used for general aviation purposes.

Bradley International Airport (BDL) is located approximately 25,500 feet (4.8 miles) northeast of the Project Site. The airport has three runways (Runway 6/24, Runway 15/33, and Runway 1/19), approximately 9,510 feet, 6,847 feet, and 4,268 feet in length respectively. The airport is publicly-owned and operated by the Connecticut Airport Authority, and supports 64 based aircraft. Bradley International Airport is operated with an ATCT and is used for commercial, military, and general aviation purposes.

6.9 Air Quality

The National Ambient Air Quality Standards (NAAQS) are established by the United States Environmental Protection Agency (US EPA) for pollutants considered harmful to public health and the environment. Under the NAAQS, six principal pollutants, also called "criteria pollutants", are required to be monitored by the CT DEEP on yearly, daily and hourly intervals dependent on the pollutant. The six principal pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

The US EPA 2012 Annual Report on Air Quality in New England identifies Connecticut as and ozone 8-hour non-attainment zone. The 2012 EPA report includes monitoring data at the East Hartford monitoring station that showed exceedances of the 75 parts per billion (ppb) ozone standard. The EPA report indicated compliance with standards for the remaining criteria pollutants.

6.10 Noise

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, communication, work, or recreation. How people perceive sound depends on several measurable physical characteristics, which include the following:

- Intensity – Sound intensity is often equated to loudness.
- Frequency – Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in Hertz. Pure tones have all their energy concentrated in a narrow frequency range.

Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (zero dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels creates a 3 dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:

- A 3 dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person.
- A 10 dB increase is a tenfold increase in acoustic energy but is perceived as a doubling in loudness to the average person.

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A weighted [dB(A)] is used to evaluate environmental noise levels.

VHB conducted an Acoustical Study for the Project which involved measuring existing condition sound levels at sensitive receptor locations surrounding the Project Site and calculating Project-generated sound levels using manufacturer's

sound data and the principles of acoustical propagation of sound over distance. The Acoustical Study is provided at Exhibit N. The sound levels were compared to the CT DEEP noise control regulations (RCSA, Title 22a, Section 22a-69-1 to 22a 69-7).

A monitoring program was developed to measure existing ambient sound levels. The existing sound levels were measured using a Type 1 sound analyzers (Larson Davis SoundExpert LxT and 831). Measurements were conducted for a 24-hour period from approximately 12:00 PM on March 9, 2017 to approximately 12:00 PM on March 10, 2017. During the daytime period, the measured sound levels data under existing conditions were composed of noise from vehicles on local roadways in the vicinity of the monitoring locations. The existing measured sound level data are presented in Table 3.

Table 3 Existing Ambient Sound Levels, DB(A)

	CTDEEP Residential Zone Noise Standard		Measured L90[3] Sound Levels	
Monitoring Location[1]	**Daytime[2]**	**Nighttime[3]**	**Daytime**	**Nighttime**
M1 – Howard/Gordon St	55	45	26-44	20-29
M2 – Knollwood Cir	55	45	27-48	22-30
M3 – Berkshire Way/Litchfield Dr.	55	45	24-40	19-28
M4 – Existing Substation	55	45	40-46	40-42
M5 – County Rd	55	45	33-46	20-39
M6 – Flintlock Ridge	55	45	30-42	24-33

1 Daytime is from 7:00 AM to 10:00 PM.
2 Nighttime is from 10:00 PM to 7:00 AM.

The L90 sound levels range from 24 dB(A) to 48 dB(A) during the daytime period and from 19 dB(A) to 42 dB(A) during the nighttime period. The result of the monitoring program indicates that the daytime and nighttime sound levels within the study area are currently below the CT DEEP's daytime and nighttime standard of 55 dB(A) and 45 dB(A), respectively.

6.11 Public Health & Safety

Under current conditions, there is generally unrestricted access to the Project Site. Public accessing the property are exposed to various hazards such as uneven terrain, wind-borne dust, trip hazards associated with irrigation equipment, etc. and natural hazards such as surfaces waters, insects and natural toxins such as poison ivy. Much of the property is remote and not readily accessed by emergency vehicles. Additionally, the 5 tobacco barns present on the Site are in various states of disrepair and represent an attractive nuisance for vandals and arsonists. A cellar

3 L90 is the A-weighted sound level, which is exceeded for 90 percent of the time during the time period. The L90 is generally considered to be the background sound level. It should be noted that the L90 eliminates the highest 10 percent of the sound levels that occur in the study area.

hole remaining from one barn that burned down within the past decade provides evidence of fire hazard. Lack of suitable roads creates serious difficulties for emergency personnel tasked with responding to fire and health emergencies.

6.12 Land Use

Municipal Zoning

A review of the Zoning Ordinance for Simsbury, Connecticut (2016) was performed to identify and understand the Town's intended use for the Project Site parcels.

The following table identifies the zoning district for each parcel in the Project:

Table 4 Parcel Zoning Designations

Parcel	Zoning Designation
G03-403-032	R-40
G03-403-012	R-40
G03-403-026-32H	I-1
G03-403-014	I-1
H05-103-024	R-40

Zoning designations are depicted on Figure: Site Location Map provided at Exhibit B.

Zone R-40 is defined in the Zoning Ordinance as a Single Family Residence Zone where the minimum lot size is 40,000 square feet, or slightly less than 1 acre.

Zone I-1 is defined as a Restricted Industrial Zone. The following uses are permitted in Zone I-1:

- Office buildings.
- Research laboratories.
- Warehouses and the manufacture, processing, or assembly of goods.

Per Article 7 of the Town of Simsbury's Zoning Regulations, "Public utility installations needed for the public convenience and necessity" are allowed as a Special Exception in any zone.

A conceptual "as-of-right" development of the Project Site is depicted in Figure: As-of-Right Conceptual Project provided at Exhibit B. As-of-right development of the Project Site could include more than 100 new house lots and 400,000 square feet of new industrial buildings with additional associated paved parking and Site driveways.

Future Land Use

VHB reviewed the Town of Simsbury Plan of Conservation and Development (2007) (POCD) to identify the Town's future land use plans for the Project Site and vicinity. Highlights of the POCD entitled "How We Want to Grow" include:

- A Future By Design
- Special Areas
- Economic Development
- Housing

For Economic Development, the POCD indicates that Town recognizes the importance of an "economic balance" and proposes to 1) develop an understanding of the net economic impact of each type of development; 2) recruit businesses that will have the most positive and sustainable net economic impact for the Town; 3) encourage business expansion by existing and new entities; 4) implement programs to assist with economic development (establish incentives, streamline the application process, consider establishing a development agency).

The POCD is organized around a number of planning elements. Key highlights of some of these elements are:

- The *Vehicular Transportation Plan* element of the POCD identifies a new collector roadway crossing the Project Site. The new collector roadway would connect Hopmeadow Road at Wolcott Road with the intersection of Hoskins Road and County Road.
- The *Special Areas Reference Map* identifies a new village center in the vicinity of the Project Site. The "Northern Gateway at Historic Hoskins Crossing" includes 100+ acres of existing industrial land that could reinforce and create a new full-scale village center.
- The *Economic Development Plan* element identifies the Project Site and vicinity as the North End economic development zone. Portions of the Site are targeted for industrial development, consistent with current zoning.
- The *Future Land Use Plan* element of the POCD identifies the Project Site as currently zoned and includes the new village center concept area. The Project Site is identified as a "growth area."
- The POCD *Agricultural Resources* element identifies the Town's goal to "Support farms and preserve farmland to help retain the rural characteristics of the community." The Project Site is not listed as an agricultural resource that is to be preserved, according to this section of the POCD.
- The *Scenic Resources* element of the POCD states the Town's goal as "Preserve and protect scenic resources in Simsbury." The Project Site is not designated as a scenic resource. Nearby roadways are not identified as scenic roadways.

Phase I Environmental Site Assessment

DWW Solar retained GZA GeoEnvironmental Inc. (GZA) to prepare a Phase I Environmental Site Assessment (the Phase I) of the Project Site. The Phase I was prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Phase I Environmental Site Assessments, E 1527-13 (ASTM 1527-13) which is the standard industry practice. The purpose of the Phase I

was to determine whether surficial or historical evidence indicates the presence of recognized environmental conditions which could result in the presence of hazardous materials in the environment, as defined in the ASTM guidance. ASTM defines recognized environmental condition (REC) as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. A copy of the Phase I report is attached as Exhibit O.

Agriculture

Portions of the Project Site are designated as Prime Farmland. Prime Farmland is defined as *Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses*.[4] Several criteria such as slope, surface stoniness, texture, climate and the availability of irrigation factor into this designation. The Natural Resource Conservation Service (NRCS) assigns Prime Farmland designations to specific map units in the cooperative soil survey. A map unit generally consists of one or more named soil series and unnamed inclusions along with phase modifiers for surface texture and slope.

Approximately 90 acres of Prime Farmland are mapped within the 289-acre Project Site. Approximately 5,783 acres of Prime Farmland are mapped within the Town of Simsbury.

4 Soil Survey Manual, USDA Handbook No. 18, October 1993

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7

Environmental Consequences

Utilizing the Project design data and the results of the Affected Environment analysis, DWW Solar prepared an analysis of the environmental consequences potentially resulting from the Project.

7.1 Tree Clearing and Vegetation Management

Tree Clearing

The Project will cumulatively result in 30 acres of new tree clearing across the entire Project Site.

As required by the Siting Council, VHB performed performing a carbon debt analysis for the Project. The purpose of this analysis was to determine whether the Project can have a net improvement in carbon reduction compared to the loss of 30 acres of trees. Approximately 151 acres of the 289-acre Project Site is forested; proposed tree clearing represents 20 percent of the Project Site's forested areas and 19 percent of the total Project footprint (see Figure: Tree Clearing Plan).

The analysis relied upon a US EPA conversion factor to identify the amount of carbon sequestered in one year by one acre of average U.S. forest: 1.06 metric tons (MT) CO2 (US EPA, 2016). As the Project requires the removal of approximately 30 acres of trees, the associated "carbon debt" is estimated to be 31.8 MT CO2 per year. Over 20 years, this would equate to the sequestration of 636 MT CO2.

The Project is expected to produce approximately 43,500 MWh of energy in its first year of operation. Using an emission factor specific to the Project's eGrid region: NPCC New England (The Climate Registry, 2015), the estimated annual carbon offset of the Project is 12,597.7 MT CO2. Greenhouse gas equivalencies for this estimated offset, could include:

- 2,661 passenger vehicles driven for one year;
- 1,417,538 gallons of gasoline consumed; and
- 1,330 homes' energy use for one year.

Anticipating an annual "carbon debt" of 31.8 MT CO2 and a carbon offset of 12,597.7 MT CO2, it would take the Project approximately 2 days to begin to have a net improvement in carbon reduction. It would take just under a month (20 days) to recover 20 years' worth of carbon that the cleared trees would have otherwise sequestered.

The Carbon Debt Analysis is provided at Exhibit P.

Temporary tree clearing may be necessary to complete the jack and bore cable construction into the Eversource Substation. The clearing would be small in size and allowed to revert to woods following construction.

Vegetation Maintenance

Outside of the gravel perimeter road and security fence, the Project requires an approximately 100-foot zone maintained free of tall vegetation so that sunlight reaches the solar panels un-obstructed. Much of this area is already cleared and where necessary, existing trees will be removed as described above. In this buffer area, it is not necessary to remove or "grub" tree stumps. Consequently, DWW is proposing to cut trees so that stumps are nearly level with the ground and leave them in place. This serves a dual function of limiting disturbance of the Prime farmland that may be present in these areas, and limiting disturbance to archaeological resources that may be present. This buffer area will be planted with a combination of grass and meadow seed mixtures to promote soil stabilization and provide some wildlife habitat. This area will be mowed once or twice annually to discourage the establishment of woody species. Refer to the Operations and Maintenance Plan provided at Exhibit Q.

Within the array area inside the perimeter roadway, the ground surface will be stabilized with a permanent grass cover to reduce erosion and promote infiltration. These grassed areas will be mowed periodically to eliminate the establishment of woody vegetation and reduce the accumulation of dry grasses and vines. These actions will minimize the probability of brush fires spontaneously igniting.

A vegetation management plan will be developed for the Project and will outline these prescribed treatments.

7.2 Wetlands

The Project has been designed to avoid all direct impacts to wetlands. The Town of Simsbury Conservation Commission / Inland Wetlands and Watercourses Agency (IWWA) regulates activities with 100 feet of wetlands and watercourses which is referred to in the Simsbury Inland Wetlands Regulations[5] as the "Upland Review Area". The Project avoids impact to the Upland Review Area (URA) to the extent practicable. The Project extends into some URA areas which were previously developed and are currently used for agriculture. Some portions of the Project will result in new development of URA.

Prior to construction, DWW Solar will develop a Resource Protection Plan describing the application of best management practices to avoid and minimize indirect wetland impacts and natural resource impacts during construction. The Resource Protection Plan will likely consist of several components, including:

- Appropriate erosion control measures;
- Temporary crossing guidelines,
- Protective measures for wildlife;
- Contractor and sub-contractor education,
- Construction equipment storage and material staging requirements/restrictions; and
- Periodic monitoring and reporting.

7.3 Wildlife and Habitat

As documented in Section 6.3, existing vegetative cover types were mapped on the Project Site. Cover types are an indicator of the various wildlife habitats provided and are linked to the habitat needs of individual species. VHB analyzed the alteration of vegetative cover types resulting from the Project as an indicator of potential impacts to wildlife utilizing the Project Site. The Wildlife Evaluations Technical Memorandum is provided at Exhibit I.

Approximately 126 acres of the agricultural fields will be converted to solar arrays and associated improvements with a permanent grassland cover type. Grass cover with legumes will be established under the array and along the perimeters of the arrays. The grassland cover will be mown approximately one to two times per year to prevent woody vegetation from overtopping the solar array panels. Additionally, approximately 24 acres of deciduous forest and six acres of coniferous forest will be cleared. These cleared areas will also be planted in grasses and legumes.

A smaller area of scrub-shrub cover type within the existing transmission line ROW will be temporarily disturbed during construction to interconnect the Project to the

5 Town of Simsbury Inland Wetlands and Watercourses Regulations, 2013. http://www.simsbury-ct.gov/conservation-commission-inland-wetlands-agency/links/inland-wetlands-watercourses-regulations.

North Simsbury Substation by underground conduit. Pre-construction wildlife usage patterns are anticipated to resume after the 6-8-month construction period is completed.

Approximately 30 acres of forested upland will be cleared for the Project which will result in some habitat loss for forest-dwelling species. The Center for Land Use Education and Research (CLEAR) produced a study of Forest Fragmentation in Connecticut. The GIS coverage for Simsbury prepared using 2006 aerial imagery indicates that the Project would alter a strip of Core Forest situated along Munnisunk Brook north of the Project. Core Forest is mapped for forest blocks that are greater than 250 acres in area with the Core Forest element at least 300 linear feet from any forest edge (University of Connecticut, 2009). By clearing trees along the edge of the existing agricultural fields and shifting the tree line north, the boundary of the Core Forest is shifted a corresponding amount. Similar review of this same mapping indicates that existing Forest Core units along Bissell Brook and Saxton Brook will be mostly unaffected by the Project as less tree clearing is proposed in these areas.

None of the ponds, streams, or the forested wetland will be impacted by the Project and best management practices will be employed during construction to prevent sedimentation and/or runoff from entering the ponds, streams, or wetlands.

Table 5 Cover Types with Project Parcels: Existing and Proposed Areas (Acres)

Cover Type	Existing Area	Area to be Altered	Area not Altered
Agricultural Fields	131	126	4.3[1]
Deciduous Forest	81	24	57
Coniferous Forest	36	6	30
Forested Wetland	34	0	34
Scrub-Shrub[2]	4.0	0	4.0
Ponds	3.0	0	3.0

1 The acreage supporting the solar array panels will all be managed as cool season grassland. Agricultural fields not occupied by solar arrays will also be converted to grassland or other landscape area.

2 Primarily Public Utility Transmission Corridor.

Aside from habitat conversion, a review of the literature indicated the potential for direct collisions with the solar arrays by birds presumably caused by confusing the panels with water.

Potential Mitigative Actions

To avoid the potential impacts to wildlife during construction, DWW Solar proposes the following measures:

› If construction activities are to occur during the nesting period between early May through mid-August, vegetation removal work (forest tree removal and agricultural clearing) should be cleared before May 1 and after August 15.

- If vegetation removal cannot be completed before May 1 areas to be cleared should first be surveyed to determine if breeding birds would be disturbed. If the survey concludes that breeding birds would be disturbed, then a modified vegetation removal schedule will be implemented.
- Environmental monitoring by qualified personnel will be present during construction in potential State-listed reptile habitats to avoid impacts to these organisms to the extent practicable.
- Entrenched silt fence will be used to isolate the work area from undisturbed areas that may provide habitat for a listed species.
- A contractor awareness program will be developed and implemented to ensure that contractors can identify these reptile and amphibian species and have been instructed on proper care and handling of herpetofauna individuals should one need to be removed from the work area.
- The work area will be examined by construction personnel in a walk-over or sweep prior to work each day.
- To the extent possible, construction vehicles and equipment will be parked along access routes and in active work areas and not in potential habitat.
- Any State-Listed species encounters will be reported to the CTDEEP NDDB.
- To minimize the possibility of "incidental take" of roosting bat species, the Applicant will follow the guidance provided in the USFWS Final 4(d) Rule issued for the northern long-eared bat on January 14, 2016 (USFWS, 2017). The Applicant will not perform any tree removal activities during the bat pupping season between June 1 and July 31 (USFWS, 2017).
- The Project will avoid identified populations of Canada toadflax, host plant for scribbled sallow moth
- Plant surveys for the State-listed plants for which there is suitable habitat within the Project Site will be performed during the blooming period for each plant. Any observed occurrences of the state-listed plant species will be cordoned off with protective flagging to prevent disturbance to these areas during construction. If avoidance is impracticable, additional coordination will be undertaken to comply with the CT ESA.

Pollinator Habitat Enhancement Demonstration Project

DWW Solar has committed to implementing a demonstration scale project aimed at enhancing pollinator habitat within the Project Site. Pollinators are essential for food production. Research has shown that where habitat needs are met, wild native bees contribute substantially to crop pollination (Pollinator Health Task Force, 2016). With the serious decline and difficulty of procuring hives of European honey bees for crop pollination, protecting and restoring habitat for native pollinators has become ever more important. Pollinator habitat includes native flowering plants that support bees, birds, butterflies, bats, and other animals that provide pollination services essential to the survival of flowering plants (Pollinator Health Task Force, 2016).

Today, pollinators face a variety of challenges, including habitat loss due to development, altered land use patterns, and climate change, as well as exposure to pests, pathogens, pesticides, and other stressors (Pollinator Health Task Force, 2016). One of the overarching goals of the Pollinator Partnership Action Plan is the restoration or enhancement of seven million acres of land for pollinators over the next five years (from 2016 through 2021).

To address the challenges facing pollinators, the State of Connecticut passed Bill No. 231: An Act Concerning Pollinator Health on May 6, 2016 (State of Connecticut, 2016). The Act is intended to protect pollinator populations through restrictions on the use of the class of pesticides known as neonicotinoids and the increase and preservation of pollinator habitats.

DWW Solar will plant up to one acre of the Project area with a Native Pollinator seed mix developed for the northeastern United States by the Xerces Society. The demonstration will be implemented generally following procedures outlined in Pollinator Habitat Conservation Reserve Program Job Sheet CP42 (Natural Resource Conservation Service, 2011), for well drained sites.

7.4 Surface and Groundwater Resources

Section J of Article 10 of the Simsbury Zoning Regulations establishes an Aquifer Protection Zone. Portions of the Project will be constructed within an Aquifer Protection Zone. This regulation lists several prohibited uses, however solar facilities are not on the list. No hazardous materials will be used or stored on-Site. The Project will be unstaffed and does not require potable water uses or result in sanitary discharges. Portable sanitary facilities will be required on-Site during construction and will be the responsibility of the Construction Contractor.

The Simsbury Zoning Regulations, Article 7 Section M establishes the Floodplain Zone to promote public health, safety, and general welfare and to minimize losses caused by periodic flooding. While floodplain and floodway both defined in the Zoning Regulations are present along the perennial watercourse that pass through the Project Site; no work or obstruction is proposed to be placed in the Floodplain Zone.

Under the existing agricultural management, water is withdrawn from Munnisunk Brook and Saxton Brook to irrigate croplands. Groundwater withdrawals may also occur when water is pumped from two dug irrigation ponds. The Project will not utilize on-Site water sources, leaving more water available for base flow in streams.

Ground and surface water quality can also be affected by land management. Soil erosion and sedimentation can contribute to the degradation of surface water quality and may become a public nuisance if tracked onto area roadways or allowed to become airborne. Standard best management practices provided in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control will be incorporated in the Stormwater Pollution Control Plan and construction documents. Structural measures such as sediment traps, anti-tracking stone construction exits, erosion

control blankets, hydraulically applied mulch, perimeter and intermediate sediment control silt fence and wattles will be employed during construction. Any sediment that gets past these treatments and is tracked off-Site during construction will be swept at the end of each work day. Disturbed areas associated with construction activities will be graded, covered with topsoil, and permanently stabilized with conservation grasses and legumes.

Long term grass cover will reduce the hazard of wind and water erosion in agricultural fields by eliminating the periods when the soil surface is exposed after cultivation and seed bed preparation. Inputs of fertilizer and pesticides will also be reduced under grassland management. These factors can improve the quality of ground and surface waters.

7.5 Stormwater

The stormwater management system design will adhere to the guidelines provided within the 2004 Connecticut Stormwater Quality Manual. The Project creates little new impervious surface as the solar arrays are elevated above the ground on racking so that permanent grass cover is established beneath the racks. This vegetation not only protects the soil from erosion, but long term management as grassland will increase the organic matter content of the soils and enhance soil structure. Improved soil structure increases the infiltrative capacity at the soil surface and the internal permeability of the soil reducing the percentage of precipitation converted to runoff.

Based on the engineering analysis provided in the Stormwater Management Report (Refer to Exhibit L), implementation of the Project will not increase peak discharge rates or volumes generated by the design storms modeled. These rates will be maintained at or below existing levels at all design points studied.

7.6 Scenic Values

EDR performed a Visibility Assessment (VA) for the Project, a copy is provided in Exhibit G. The VA consisted of viewshed analysis, field verification, and visual simulations. Generally, the VA used lidar topographic point cloud information, topographic data, Project data and ESRI ArcGIS® software with the Spatial Analyst extension to identify where views into the Project Site exist within the study area. Field verification was performed to confirm these viewpoints, obtain photographs for use in visual simulations, and further document the character of the study area. The visual simulations were prepared utilizing aerial photographs, LIDAR lidar data, and GPS data collected in the field to create an AutoCAD Civil 3D® drawing.

Several viewpoint locations were selected as particularly sensitive for abutters and the public travelling on area roadways. These viewpoints were photo-documented and used for visual simulations. By simulating the future viewshed conditions proposed conditions, specific needs for screening such as vegetation or fencing

were identified. The simulations were then remodeled with proposed screening features.

Visibility Analysis

The results of the visibility assessment are summarized as follows:

- The visibility analysis suggested that potential views of the Project will be contained within the Project Site, with the exception of some abutting public roads. Approximately 8 percent of the half mile visual study area could have potential views of some portion of the Project (the visible area). However, 94 percent of the visible area is contained within the Project Site.
- Field review indicated that the viewshed results were generally accurate, and existing structures and vegetation will be effective in screening views of the Project in most locations. However, where forest vegetation is thin and/or understory vegetation is lacking, some visibility may be experienced from public roads and homes abutting the Project Site.
- Seven visual simulations illustrate representative views of the Project from various foreground locations within the study area. These views range from open and unobscured to substantially screened. The simulations illustrate the most open and unobstructed views available at each location, and are representative of the range of views that will be available to the residents in the Town of Simsbury.

Visual Mitigation

Proposed mitigation measures consist of the following two separate types of screening treatments depending on site-specific circumstances:

- Where residential properties directly abut the Project Area, additional native evergreen vegetation will be planted to increase the effectiveness of existing hedgerows and forest vegetation in screening views of the Project. The need for, and extent of, such plantings will be decided on a case-by-case basis once the Project is operational. If significant views exist from a residential property, DWW Solar will determine the appropriate size and density of plantings in order to minimize Project visibility.
- Where open views are available along Hoskins Road and County Road mitigation is proposed to include a 10-foot-tall architectural fence and intermittent plantings of native trees and shrubs to help break up the continuous line created by the fence. Additionally, where possible, tall native wildflowers will be planted between the tree and shrub plantings in front of the fence. These proposed plantings will provide benefits to wildlife (including pollinators) as well as screening to minimize Project visibility.

7.7 Cultural Resources

The Heritage survey report described in Section 6.7 was submitted to the Connecticut State Historic Preservation Office (CT SHPO) to initiate consultation with that agency. DWW Solar, VHB and Heritage attending a meeting with the SHPO on May 11, 2017 to discuss additional studies to be conducted and opportunities for preservation and mitigation of the identified cultural resources. Consultation with the CT SHPO is on-going. Additional field studies that were proposed Heritage and confirmed by the CT SHPO were still in progress at the time of this filing. Refer to Exhibit M.

7.8 Aeronautical Facilities

On behalf of DWW Solar, VHB filed 17 Notice of Proposed Construction or Alteration - Off Airport (Form 7460-1) notifications with the FAA. Copies of the 7460-1 filings are provided at Exhibit R. The filings were made on March 15, 2017 and provided required information about the Project such as the type of activity/construction, the latitude and longitude of the facility, the height of equipment above ground, and ground elevations. On April 18, 2017, FAA issued a Determination of No Hazard to Air Navigation (Determination of No Effect (DNE)) for the Project. Copies of the DNEs are provided at Exhibit R. The DNE requires that DWW Solar file the FAA Form 7460-2, Notice of Actual Construction or Alteration, following construction of the facility.

7.9 Air Quality

It is expected that the Project will have minimal emissions of regulated air pollutants and greenhouse gases during construction and no emissions during operation. Therefore, an air permit is not required for the construction or operation of the solar facility.

Minor construction related impacts to air quality could include emissions produced by the operation of construction machinery or fugitive dust emissions, but such impacts would not be expected to be greater than the use of agricultural equipment that is currently taking place. In order to reduce and mitigate such potential impacts to air quality, exposed soils will be periodically sprayed with water as necessary during construction and that crushed stone aprons be installed at access road entrances for dust control. Additionally, the quantity of earth to be moved or disturbed during construction will be minimized to comply with state guidelines.

7.10 Noise

VHB conducted an acoustical study to evaluate the sound levels from the mechanical equipment associated with the Project. The Project-related noise sources consist of the electrical inverters and transformers used to convert the solar energy to electricity. The Project-generated sound levels were calculated using

manufacturer's sound data and the principles of acoustical propagation of sound over distance. An Acoustical Analysis is provided at Exhibit N.

Noise Impact Regulatory Criteria

The CT DEEP has developed noise impact criteria that establish sound level thresholds deemed to result in adverse impacts. The acoustic analysis for the Project used these criteria to evaluate whether the Project will generate sound levels that result in adverse impacts.

The CT DEEP's noise control regulations identify the limits of sound that can be emitted from specific premises and what activities are exempt. The noise control regulations (Title 22a, §§ 22a-69-1 to 22a 69-7) are contained in the RCSA. Even though the proposed Project would be considered a Class C (Industrial) emitter, the acoustic analysis for the Project assumed the more stringent noise standard for a Class B (Commercial) Emitter Zone and a Class A (Residential) Receptor Noise Zone for the receptor locations. A Class C land use is defined as generally industrial where protection against damage to hearing is essential, and the necessity for conversation is limited. The land use for Class B is defined as generally commercial in nature, where human beings converse and such conversations are essential to the intended use of the land. The land use in Class A is defined as generally residential where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land.

The CT DEEP policy states that a source (emitter) located in the various zones shall not emit noise exceeding the levels stated in Table 6 at the adjacent noise zones.

Table 6 CT DEEP Noise Zone Standards

	Receptor Noise Zone			
Emitter Zone	**Class A (Daytime)**	**Class A (Nighttime)**	**Class B**	**Class C**
Class A (Residential)	55	45	55	62
Class B (Commercial)	55	45	62	62
Class C (Industrial)	61	51	66	70

Source: Control of Noise (Title 22a, Section 22a-69-1 to 22a-69-7.4), RCSA, Revised 2015-3-6.

Receptor Locations

Sixteen receptor locations were identified in the vicinity of the Project Site. The receptor locations were selected based on their proximity to the Site and their land use. These receptor locations represent the most sensitive locations in the immediate area that may experience changes in sound levels once the Project is in operation. These receptor locations represent the residential parcels that surround the Project Site. They include:

- R1 – Munnisunk Drive,
- R2 – Halwood Lane,

- R3 – Knollwood Circle North,
- R4 – Knollwood Circle South,
- R5 – Howard Street,
- R6 – Ojakian Commons,
- R7 – Eastpointe at Dorset Crossing Apartment,
- R8 – Hoskins Road,
- R9 – Flintlock Ridge,
- R10 – Musket Trail,
- R11 – Squadron Line School,
- R12 – 85 Hoskins Road,
- R13 – County Road,
- R14 – Saxton Brook Drive,
- R15 – Berkshire Way, and
- R16 – Litchfield Drive.

These primary residential receptor locations represent the most sensitive locations in the vicinity of the Project Site.

Future Conditions Model

The Project-generated sound levels were calculated for each sensitive receptor location based on manufacturer-provided reference sound level data. The reference sound level data (76 dBA at 3.3 feet) for the inverters were obtained from manufacturer's specifications of the potential equipment. The details for the transformers are not known at the time of this acoustical study, therefore, a reference sound level data (63 dBA at 6 feet) was used. This level was based on data obtained from the National Electrical Manufacturers Association (NEMA) standards[6] for transformers. These sound levels were adjusted to reflect the distances to the sensitive receptor locations. The Project-generated sound levels were projected to the receptor locations using the properties of sound propagation for soft ground terrain in the acoustic modeling software CadnaA[7] (Computer Aided Noise Abatement).

Finally, the existing and proposed Project-generated sound levels were added together to determine the proposed mechanical equipment's' potential impact on existing sound levels. These results were compared to the CT DEEP noise impact criteria for determining compliance.

6 NEMA TR 1-2013 Transformers, Step Voltage Regulators and Reactors, National Electrical Manufacturers Association, 2014

7 DataKustik GmbH, 2014. Computer Aided Noise Abatement Model.

Results of the Acoustical Study

The potential sound level impact associated with the Project was determined by comparing existing and future sound levels to the CT DEEP's noise standards. The existing sound levels were based upon sound level measurements. The future sound levels were calculated by combining existing sound levels and sound levels from the proposed equipment. The sound levels were adjusted based upon distance, properties of sound propagation over terrain, applicable blockage, and, if necessary, noise attenuation measures, which may include an acoustical wall.

The results of the acoustical analysis demonstrated that the operation of the Project's electrical inverters and transformers will meet CT DEEP's noise standards at the sensitive receptor locations. The greatest potential for an abutting residential receptor to experience a potential impact is during the nighttime when ambient sound levels are the lowest. Modelling showed that, with the equipment operating at full load, the receptor locations will experience sound levels ranging from approximately 33 dB(A) to 43 dB(A). These sound levels are below CT DEEP criteria of 55 dB(A) during the daytime period and 45 dB(A) during the nighttime period.

Table 7 summarizes the sound levels at the receptor locations.

Table 7 Sound Levels at Receptor Locations, DB(A)

Receptor Locations	CTDEEP Noise Standard Daytime*	CTDEEP Noise Standard Nighttime*	Project Generated Sound Levels
R1 – Munnisunk Drive	55	45	34
R2 – Halwood Lane	55	45	35
R3 – Knollwood Circle North	55	45	37
R4 – Knollwood Circle South	55	45	37
R5 – Howard Street	55	45	38
R6 – Ojakian Commons	55	45	34
R7 – Eastpointe at Dorset Crossing Apartment	55	45	33
R8 – Hoskins Road	55	45	37
R9 – Flintlock Ridge	55	45	35
R10 – Musket Trail	55	45	35
R11 – Squadron Line School	55	45	34
R12 – 85 Hoskins Road	55	45	43
R13 – County Road	55	45	43
R14 – Saxton Brook Drive	55	45	37
R15 – Berkshire Way	55	45	40
R16 – Litchfield Drive	55	45	38

* Noise standard for nighttime for Class B emitter and Class A receptor.

Since the model for the future sound level relied upon assumed transformer and inverter equipment which will be subject to change as the Project proceeds to construction, DWW commits to remodeling the projected sound levels once the

specific equipment models and corresponding sound levels are identified. If this pre-construction analysis reveals any non-compliance with CT DEEP sound level criteria, sound mitigation will be employed in the final design. Sound mitigation typically consist of walls or other structure that blocks the line of sight between the sound emitter and the sound receptor. Such screening would be positioned directly at the noise source.

Construction Activities

Construction activities may result in temporarily increases of nearby sound levels due to the intermittent use of heavy machinery. The Project is expected to generate typical sound levels associated with construction, including truck movements, heavy equipment operations, and general construction activities. Heavy machinery, such as front end loaders, graders, bull dozers, and backhoes, would be used intermittently throughout construction.

Section 22a-69-1.8(g) of the CT DEEP's noise control regulation states that noise associated with construction activities are exempt from the regulation. However, even though construction noise is exempt from the regulation, construction activities such as excavation/grading and installation of the solar panel systems would typically be limited to normal daytime working hours. Construction activities beyond normal daytime work hours would be minimized to the extent practicable and would adhere to local noise regulations.

If noise concerns arise during construction, DWW Solar will evaluate and implement appropriate noise abatement measures to reduce or minimize noise from the construction activities. Construction vehicles and equipment would be required to maintain their original engine noise control equipment. Specific mitigation measures may include, but not limited to, the following:

- Install and properly operate appropriate noise muffler systems on construction equipment;
- Implement appropriate traffic management techniques during the construction period to minimize roadway traffic noise impact;
- Implement procedures for proper operation and maintenance, and prohibition of excessive idling of construction equipment engines;
- Install quieter-type (manually adjustable or ambient-sensitive) backup alarms on construction vehicles.

7.11 Public Health & Safety

The Project incorporates several elements to promote safety and security, and comply with applicable regulations.

Fencing

The facility will be surrounded by a 20-foot-wide gravel perimeter roadway for safety and a 7-foot-high chain link fence for security. The chain-link fence is required to be posted with safety signage providing the warning that high voltage equipment is stored inside the fence. The NESC dictates the height of the fence and the signage. The NESC also dictates the distance between the fence and electrified equipment to minimize arcing, as well as grounding requirements for the fence itself for the safety of those potentially contacting the fence. The security fence is not an electric fence. In certain areas, architectural fencing and plantings are proposed for visual screening, see Exhibit G: Visibility Assessment.

Signage

Signage identifying the facility will be provided at each driveway location and will include contact information for DWW personnel in charge of managing the facility. These signs will be designed with consideration of the extensive signage guidance provided in the Town of Simsbury Zoning Regulations. The chain-link fence will be posted with safety signage providing the warning that high voltage equipment is stored inside the fence.

Vegetation Management

Areas of the Project planted in grass or meadow cover will be mowed once or twice annually to discourage the establishment of woody species. A vegetation management plan will be developed for the Project and will outline these prescribed treatments and any other vegetation management deemed necessary by DWW. Areas outside the limits of the Project footprint and buffer will be left in a natural state. Vegetation management is further outlined in the Operations and Management Plan provided at Exhibit Q.

Fire Prevention

The facility will have an Emergency Management Plan coordinated with First Responders. Specifically, the Responders will have access to the Project Site through gates and the road system will ring the facility. Additionally, the gravel roads will also act as a fire break and be sufficient to support response for equipment rapidly and timely. Fire prevention practices are further outlined in the Operations and Management Plan provided at Exhibit Q.

Emergency Access\Training

DWW will provide appropriate training and access to individuals with authorized or emergency access to the facility.to allow for rapid response to individuals that have actual knowledge of the operation and risks associated with the facility. First

responder training is further outlined in the Operations and Management Plan provided at Exhibit Q.

Electric and Magnetic Fields

Electric and Magnetic Fields (EMF) is a term used to describe fields that are created by voltage (electric field) and electric current (magnetic field). These fields can be measured using instruments and can be calculated using a computer model.

Power frequency EMFs are present wherever electricity is used. Sources of these fields include utility transmission lines, distribution lines, substations, building wiring in homes, offices, and schools, and the appliances and machinery used in these locations.

Electric fields are present whenever voltage exists on a wire, and are not dependent on the magnitude of the current flow. The magnitude of the electric field is primarily a function of the configuration and operating voltage of the line and decreases with the distance from the source. Electric fields are shielded (i.e., the strength is reduced) by conducting surfaces, including trees, fences, walls, buildings, and most types of structures.

Magnetic fields are present whenever current flows in a conductor and are not dependent on the voltage present on the conductor. The magnetic field strength resulting from a transmission line is a function of both the current flow on the conductor and the configuration of the transmission line. The strength of these fields also decreases with distance from the source. However, unlike electric fields, most common materials have little shielding effect on magnetic fields.

The National Institutes of Health (NIH) has developed a fact sheet summarizing the health concerns associated with EMF. The NIH reports that "No consistent evidence for an association between any source of non-ionizing EMF and cancer has been found."

7.12 Land Use

A Decommissioning Plan is included at Exhibit S of this Petition. The Decommissioning Plan will be implemented at the end of the useful life of the Project. The Decommissioning Plan specifies how the Project components will be removed from the land and disposed of as waste or recycled as appropriate. Prior to decommissioning the Decommissioning Plan will be updated to be compliance with rules and regulations in effect at that time. As part of the Siting Council process, DWW Solar must restore the property to the condition that it was found in.

Agriculture

The factors that make Prime Farmland ideal for agriculture also make these areas attractive to competing land uses such as residential, commercial, and Industrial development. The North Central lowlands of Connecticut with its large, near level,

outwash terraces and glacial lakebed deposits have witnessed recent substantial losses of Prime Farmland most notably with larger professional office, industrial and commercial distribution developments such as Griffin Center, New England Tradeport, and Phoenix Crossing.

When residential, commercial or industrial developments occur on Prime Farmland, the soil resource is irretrievably lost. In contrast, the Project will occupy the Site for approximately 20 to 25 years after which the Project will be decommissioned in accordance with the plan provided in Exhibit S. Specific measures have been included in the Project layout, engineering design, and proposed management to avoid and minimize alteration of the existing farmland soil resources. These efforts were taken to facilitate a potential return to agricultural management after decommissioning. A summary of these considerations is provided below.

Minimizing Grading and Construction Effects

Prime Farmland soils are degraded when they are altered by cutting, filling or regrading. Since most of the soil fertility and soil/plant root interactions affecting productivity occur the topsoil layers, grade changes can influence productivity. Wherever practicable, the Project has been designed to avoid grade changes in the agricultural fields that will be utilized for the solar development. Figure: Farmland Soils provided at Exhibit B depicts the extent of within the Project Site and within the currently active agricultural field. Figure: Farmland Soils and Proposed Grading Limits depicts the areas where Prime Farmlands will be altered by grading for the Project. These values are presented below in Table 8.

Table 8 Summary of Farmland Areas within Project Site (Acres)

Farmland Soil	Within Currently Farmed Fields	Altered by Grading
Prime Farmland	64.7	4.2
Other Farmland	65.8	10.0
Total	130.5	14.2

The Project grading plan preserves the existing topography in 94 percent of the Prime Farmland that is currently cropped and 85 percent of the remaining active fields that are not Prime Farmland. The farmland soils within the solar array layout will be planted with perennial grasses and legumes to minimize soil losses to erosion and will sequester atmospheric carbon that will be incorporated as soil organic matter (SOM) in the topsoil during the operational phase of the Project.

Farmland can also be degraded by excavation and mixing the topsoil with subsoil layers. The thickness of the topsoil in the farm fields was evaluated by VHB by digging shallow holes with a tile spade and with a soil auger. These observations found that the farm has been subject to repeated deep tillage. Unless eroded and lost, the thickness of the plow layer was typically between 14 and 20 inches. The solar panel foundations will consist of direct driven piles or screw piles. Typical installations involve a pile installed approximately 8-foot on center along rows with

13-feet between rows. Installation and removal of these piles will result in little soil disturbance. Conduit interconnecting collectors along rows will be buried in a shallow trench. The backfill for these conduit trenches does not require excessive compaction. Larger conduit and direct buried lines used to interconnect rows to inverters can be installed in deeper trenches by segregating topsoil and placing it back on top of the trench during backfill.

Service roads will be constructed across Prime Farmland to inspect and service the solar fields. Typical road construction involves the removal of the topsoil layer and replacement with a processed gravel base. To preserve the topsoil in place, service roads will be constructed by installing a non-woven geotextile fabric on the ground surface and then spreading a layer of processed stone over the geotextile to provide soil separation. During decommissioning, the processed stone will be stripped exposing the geotextile. The geotextile will then be removed and disposed revealing the original soil surface. The compacted soil beneath the road fill may require ripping with a subsoiler plow to loosen it before it can be returned to crop production.

Soil Health

The Prime Farmland designation is assigned to certain map units developed by the Cooperative Soil Survey. Map units consist of similar natural soil groups based on parent material, mode of surficial geologic deposition, topography, drainage class and other physical and chemical factors. The concept of soil health considers factors beyond the mostly inherited abiotic soil characteristics used to identify Prime Farmland. Soil health recognizes the importance of maintaining the diverse biologically driven processes inherit in natural soils that make it productive. Soil health recognizes the importance that soil biodiversity plays in sustaining the fertility and productivity of the soils along with other ecological services provided by soils such as carbon sequestration, clean air, water infiltration and improvements to human and wildlife habitat.

One of the simplest predictors of soil health is the quantity of SOM in the soil. In general, higher levels of SOM and reduced levels of mechanical disturbance support greater soil biodiversity. In healthy soils, the exudates of microbes enhance soil structure by cementing individual soil particles together into relatively permanent aggregates called peds. This improved soil structure enhances infiltration of precipitation and the exchanges of gases necessary for microbial and root respiration. A well-structured soil with higher levels of SOM also improves the moisture holding capacity of the soil and the ability of crops to resist drought. Stable forms of humified SOM improve soil fertility by providing charged exchange sites for nutrient cations and anions. Nutrients are also released by biological activity which mineralizes organic matter.

In agricultural settings, soil health is most strongly affected by management practices. Tillage is one of the practices that reduces the organic matter level in the soil. Each time the soil is tilled, it is aerated. As the decomposition of organic matter

and the liberation of carbon are aerobic processes, the oxygen stimulates or speeds up the action of soil microbes, which feed on organic matter. Decomposition increases liberation of CO_2 to the atmosphere and reduces SOM. As levels of SOM decrease, so does biodiversity.

The United States Department of Agriculture operates the Conservation Reserve Program (CRP) and the Conservation Reserve Enhancement Program which provides financial supports to farmers who remove farmland from production to implement long-term conservation measures, typically for 10 to 15-year time spans. Studies have examined the values of grasslands planted on these CRP and other agricultural lands for carbon sequestration. Acharya et al. (2012) compared agricultural lands converted in grasslands and found carbon sequestration rates increased with grassland age up to the study limit of 17 years. Swan et al. (2015) scored the potential carbon sequestration increases which would be anticipated for various standard NRCS conservation practices. For practice No. 327, converting marginal croplands to conservation cover, the value is an additional 0.42 to 0.94 Mg C ha^{-1} y^{-1} (360 to 820 lbs C ac^{-1} y^{-1}) to be sequestered.

In addition to increased rates of carbon sequestration and enhancements to soil biodiversity, a long-term grassland cover will virtually stop the ongoing soil erosion that is occurring at different rates across the different farm fields.

DWW Solar believes that farmland sites can be developed and managed as a renewable energy facility while preserving and enhancing farmland soils through grassland management during its operation. A return to an agricultural use after decommissioning will more likely be influenced by the economic conditions at decommissioning and whether they favor farmland operations or competing interests for residential, commercial or industrial development.

8

Conclusion

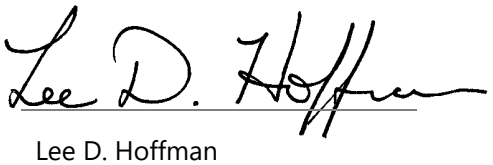
The Project will provide numerous benefits to the Town of Simsbury, the State of Connecticut, and its citizens. It will place the Town of Simsbury at the forefront of green energy development while producing sustainable environmental benefits with minimal environmental impacts. Pursuant to CGS § 16-50k(a), the Siting Council shall approve by declaratory ruling the construction or location of a grid-side distributed resources project or facility with a capacity of not more than sixty-five (65) MW, as long as such project meets DEEP air and water quality standards. The TVS Project meets these criteria. The TVS Project is a "grid-side distributed resources" facility, as defined in CGS § 16-1(a)(43), because the TVS Project involves "the generation of electricity from a unit with a rating of not more than sixty-five megawatts that is connected to the transmission or distribution system . . ." and, as demonstrated herein, the TVS Project will meet CT DEEP air and water quality standards.

The Project will not produce air emissions, will not utilize water to produce electricity, was designed to minimize sensitive area and wetland impacts, will employ a stormwater management plan that will result in no net increase in runoff to any surrounding properties, will not generate significant noise, will not have substantial adverse impacts on visual resources, land use, recreation, cultural resources or the environment, and furthers the State's energy policy by developing and utilizing renewable energy resources. In addition, as demonstrated above, the Project will not have a substantial adverse environmental effect in the State of Connecticut.

For the foregoing reasons the Petitioner requests that the Siting Council issue a Declaratory Ruling that the proposed Project will comply with CT DEEP air and water

quality standards, will not have substantial adverse environmental effects and therefore a CECPN is not required for the construction, operation and maintenance of the Project.

Respectfully submitted,
DWW Solar II, LLC

By 

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