

Resource Protection Plan

Tobacco Valley Solar Project Simsbury, Connecticut

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Introduction

This Resource Protection Plan (RPP) is required as item number 1.c. within the Decision and Order (D&O) on Tobacco Valley Solar (TVS) issued by the Connecticut Siting Council's (CSC) on December 21, 2017. The RPP shall include both construction phase and operational phase elements.

The RPP identifies sensitive receptors within and adjacent to the Project Area and provides recommended protective measures. Contractor training is an important component of the RPP. For contractors to protect sensitive features, they must be aware of their presence these features and understand the conservation measures and best management practices (BMPs) incorporated into the plans to protect them.

This Plan was prepared by VHB, in association with DWW Solar II, LLC and their contractors: Swinerton Builders and Duraroot Environmental Consulting, and Pullman & Comley LLC.



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Soil Erosion and Sediment Controls

There are two perennial streams that are tributaries to the Farmington River within the greater Project Area that are sensitive to increases in turbidity. A site-specific Stormwater Pollution Control Plan (SWPCP) has been developed per the requirements of Section 22a-430b of the Connecticut General Statutes and the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (GP), initially reissued on October 1, 2013 and reissued without modifications for the period from October 1, 2018 through September 30, 2019. The GP was initially issued October 1, 1992 by the Connecticut Department of Energy and Environment Protection (CTDEEP) and provides guidance for preparing the SWPCP for stormwater management during and after construction. The SWPCP also follows the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (CT SESC Guidelines) for selecting and designing specific BMPs. The SWPCP is provided as part of the Development & Management Plan.

A brief recapitulation of the construction sequence, soil erosion and sediment controls BMPs, and the construction monitoring is provided below.

2.1 Construction Sequence

A general sequence for the installation of soil erosion and sediment controls and other site preparation for construction is provided below. Work site sweeps to detect and protect reptiles and nesting birds, time of year restrictions, and measures to protect other rare taxa are provided in Section 3.0 of this document. It is presumed that agricultural fields will have a cover crop when site development is initiated. Some variation from this outline is

anticipated to address specific field conditions, however, it is anticipated that construction will proceed in accordance with the following guidelines:

1. Install stabilized vehicle construction exits at the existing farm road intersections with Hoskins Road.
2. Survey and mark woodland clearing limits.
3. Mark trees to be felled within 10-feet of clearing limits. Install tree protection on trees to be preserved within 10-feet of the clearing limit.
4. Mark grubbing limits prior to beginning clearing operation.
5. Clearing equipment is not to travel beyond grubbing limits to preserve potential archeological resources.
6. Harvesters stationed within the grubbing limits can reach to cut trees beyond the limits. Other trees may be hand cut with chain saws and recovered with cables.
7. Wherever possible all equipment (e.g., whole tree harvesters, timber forwarders/skidlers, pickup trucks, and buggies) should travel around the perimeter agricultural fields following existing perimeter roads. Avoid travel across fields.
8. As trees are cleared and grubbed, tops and root balls should be tub ground to create material for wood mulch berms.
9. Install mulch berm at the limit of disturbance; entrenched perimeter silt fence immediately upslope of this berm. Mulch berm and perimeter silt fence shall be maintained in place until completion of construction. No soil-disturbing work shall be allowed outside of the mulch berm.
10. Immediately address ongoing erosion problems in the farm fields using temporary diversions, and filling and grading gullies. Track gullies up and down slope and hydroseed with a thermally treated wood bonded fiber matrix (BFM) mulch with tackifier or flexible growth media (FGM). Stapled biodegradable erosion control blankets without monofilament mesh is an acceptable alternative for hydroseed and BFM.
11. Install temporary sediment traps and basins in accordance with the approved site-specific SWPCP. The Engineer of Record (EOR) will inspect features to confirm required storage capacities are provided, and that outlets and/or spillways are constructed correctly. Discharge areas below outfalls to be inspected to confirm flow will be over stable ground and sheet flow is encouraged.
12. Seed and protect disturbed soils around sediment traps and basins. Secure seed with a thermally treated wood fiber BFM or FGM applied following manufacturer's specifications for use at specified application rates. An anionic polyacrylamide product may be included with the tackifier to promote soil stability. All other amendments should be prescribed based on the results of soil tests.
13. Install other erosion and sediment controls following the CT SESC Guidelines. During construction the Contractor shall install measures as required by the EOR or qualified inspector, to prevent sediment laden runoff from reaching wetlands or discharging offsite.

14. A qualified reviewing professional shall perform the plan implementation inspection within the first 30 days of construction activity, in accordance with Section 5(b)(4)(A) of the GP.
15. Stake out utility trenches along the edges of fields and access roads through the agricultural fields. Install a non-woven geotextile over the road surface and apply four inches of processed stone over the geotextile as a travel surface.
16. Utility trenches should segregate topsoil from subsoil so that during trench backfill the materials can be replaced in the same order.
17. Minimize vegetation disturbance when installing posts in agricultural fields.
18. Install underground conduit cable generally starting from the high points on the site moving towards the low points.
19. Install temporary/permanent landscaping and loam and seed all disturbed areas as early as practicable.

2.2 Soil Erosion and Sediment Control Measures

The following Soil Erosion and Sediment Control Measures (SESCs) shall be installed in accordance with the approved SWPCP.

- › Silt fence – This BMP will be constructed of standard silt fence entrenched to a minimum depth of six-inches as specified in the CT Guidelines. Silt fence shall be installed along the Project Site’s limit of disturbance (LOD) just above the woodchip berm. The silt fence will function as perimeter sediment control and to exclude small vertebrates from the construction site. See Section 3.5. When not installed along a contour, silt fence wings and openings will be provided to prevent concentrated runoff from reaching scouring velocities. Prevent wildlife from entering the site by closing gaps between silt fence lines with porous wildlife exclusion fencing (e.g., ERTEC E-Fence) following manufacturer’s installation specifications.
- › Compost filter sock – This BMP is a tubular porous-mesh device that is filled with filtration media that is designed to filter stormwater when used as perimeter sediment control. It can also be used as slope interruption across long slopes to reduce runoff velocities. When used as perimeter control above silt fence, a 12-inches in diameter sock will be secured by paired angled stakes.
- › Filter berm – Filter berms may be composed of wood grindings from the site clearing and grubbing operations. Tree stumps and tops will be processed in a tub grinder and formed into a filter berm at the LOD where runoff leaves the Project Site. Typical dimensions are four-foot wide by one foot tall and one foot across the top.
- › Sediment traps and basins – Sediment traps are temporary ponding areas with a stone outlet formed by excavation and/or constructing an earthen embankment. Sediment traps collect and retain runoff for adequate periods to allow much of the suspended sediment fraction to settle out before discharge. Traps are used for contributing watersheds less than five acres. Sediment basins handle watersheds up to 25 acres in area. The sizing and placement of these features are provided in the SWPCP.

- › Concrete washout – Washouts are used to capture concrete wash waters from ready mix trucks, drums, pumps and chutes. After use, washout containers will be collected and disposed of off-site.
- › Construction exits – Crushed stone stabilized pads will be installed where farm roads intersect with Town-owned roads to reduce the tracking of sediment onto adjoining paved surface areas. The CT SESC Guidelines recommend construction exits to be at least 12-feet wide and flared to accommodate the turning radius of construction vehicles. The minimum length shall be 100-feet because surface soil textures are less than 80 percent sand. Periodic top dressing may need to be applied to maintain the functionality of the construction pads. The locations for construction /exits are provided in the SWPCP.

2.3 Good Housekeeping BMPs

Good housekeeping measures shall be followed by contractors to ensure that the TVS Project Site is clean and compliant with SWPCP and the GP. The following measures shall be taken:

- › Any sediment tracked into the adjacent roadways shall be swept at the end of each day.
- › During dry periods, the dust of exposed soils will be controlled with a water sprayer truck.
- › A Spill Prevention and Control Plan shall be maintained on site. Employees shall not spill fluids and chemicals such as oil, antifreeze, etc. onto the bare ground. These liquids will be contained within sealed containers and shall be properly disposed off-site.
- › To the extent practicable, stockpiling and storage areas will be minimized.
- › Small-scale construction debris and trash will be disposed of in covered receptacles on-site and will periodically be transported off-site for disposal.
- › If vehicle refueling is to be conducted on Site, it will be conducted at a minimum of 200-feet away from wetlands and watercourses.
- › Portions of the Site are within an Aquifer Protection Zone as shown on plan. Should there be any hazardous materials used or stored within the Aquifer Protection Zone, a Hazardous Materials Management Plan shall be developed and submitted to the Town of Simsbury.

2.4 Pre-construction, Construction, and Post-Construction Monitoring

As defined in Section 2 of the general permit and re-iterated in the September 8, 2017 CTDEEP Guidance for Stormwater Management at Solar Farm Construction Sites, the individual(s) responsible for construction inspections will be a Professional Engineer and/or Landscape Architect that meets the qualifications described in Section 5(b)(4)(A)(ii) of general permit and has been approved in writing by the Commissioner. Inspections will be conducted at least once a week and within 24 hours of the end of a storm that generates discharge. The inspector(s) will evaluate the effectiveness of SESCOs and will make recommendations to repair or install additional SESCOs as needed. Turbidity testing of discharges will be required each month during the construction period.



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Federal and State Threatened or Endangered Species and State Species of Concern

The CTDEEP Natural Diversity Data Base (NDDDB) Program letter of March 5, 2018 (NDDDB Determination No. 2017102132) approved the Conservation Measures Plan prepared for the TVS Project. An addendum to the Conservation Measures Plan was submitted to NDDDB on January 11, 2019, and revised on January 16, 2019, to cover the addition of 4.3 acres of adjacent farmland into the Project Site. The Conservation Measures Plan provided protective measures for plant and animal species protected under the Connecticut Endangered Species Act (CESA) thought to have the potential to occur within Project Site or occupy downstream aquatic habitats potentially indirectly impacted by the Project. These conservation measures must be implemented as part of the CSC Development & Management Plan and are recapitulated below:

3.1 Reptiles

The CT DEEP determined that three reptile species of State Special Concern potentially occur within the TVS Project Area: wood turtle (*Glyptemys insculpta*), eastern box turtle (*Terrapene carolina carolina*), and eastern hognose snake (*Heterodon platirhinos*). The following conservation measures are to be implemented to protect individuals of these species which may be present:

- › Exclusionary fencing shall be installed along the LOD, including existing access roads, to exclude reptiles and amphibians from entering active work areas. The fencing must be at least 20-inches high and be properly entrenched in the ground without gaps.

- › Experience has shown that long runs of exclusionary silt fence not installed along a contour can create concentrated erosive discharges. Silt fence wings and porous wildlife exclusionary fence (e.g., ERTEC E-Fence) must be installed at regular intervals to avoid creating concentrated flows.
- › Qualified personnel will conduct visual sweeps of the work area(s) each morning prior to work start and if any of the listed species are encountered they will be safely moved to an adjacent area outside of the exclusionary fencing.
- › Qualified personnel will train contractors in the identification of the listed species so that they may appropriately handle and relocate the targeted species or notify the appropriate personnel to relocate the species outside of active work areas.
- › To the extent possible, construction vehicles and equipment will be parked along access routes and in active work areas and not in potential habitat. All staging and storage areas, must swept by qualified personnel prior to use.
- › State-listed reptile species encountered during the construction period will be documented by Qualified Personnel and reported to the NDDDB.
- › Silt fence used for wildlife exclusion shall be removed after hazards posed by equipment and vehicle operations are mitigated after construction is completed.

3.2 Birds and Bats

All tree clearing shall be conducted outside of the period between May 15th to August 31st to minimize disturbance to nesting birds and tree-roosting bats.

If bats are encountered during tree clearing activities outside of the time of year restriction, tree clearing operations will be immediately stopped and the Environmental Monitor will contact the Bat Program within the CTDEEP Wildlife Division to determine the proper next steps.

3.3 Freshwater Mussels

Saxton Brook and Munnisunk Brook are cold-water tributaries to the Farmington River which flow within the property limits of the TVS Project. No work is proposed directly within or adjacent to these perennial streams or the farm pond impoundments along the streams. Work is proposed in the watersheds of these streams and sediment controls will be installed along slopes above these streams as shown on the SESC Plans to protect water quality and minimize any indirect effects to freshwater mussels within these tributaries or the Farmington River.

3.4 Plants

One occurrence of a plant species that is listed as a species of State Special Concern was identified within the Eversource right-of-way (ROW) during surveys conducted in 2017. If present this plant occurrence or other occurrences will be isolated with construction fencing to protect the station. Prior to installing the interconnection, the open Eversource ROW

should be searched by a qualified Botanist and any plants suspected to be this species protected by construction fencing.

3.5 Butterflies and Moths (Lepidoptera)

A large stand of Canada toadflax (*Nuttallanthus canadensis*) identified in the Eversource ROW north of the Simsbury Substation during a 2017 survey will be protected by construction fence. This common plant occurs in small scatter stands around the perimeter of the agricultural fields in the Project Area and is not protected by the CESA. However, this species is known to serve as a host plant for a moth that the NDDB lists as Special Concern. The particularly large stand may provide suitable habitat for the state-listed moth.

3.6 Dragonflies

A State-threatened dragonfly potentially occurs within the habitat provided by the tributaries within the TVS property limits. The conservation measures proposed to protect the freshwater mussels also apply to this species of dragonfly.



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General Wildlife Conservation Measures

General conservation measures are incorporated into the plan to minimize the effects on wildlife species that may utilize the Project Site and the adjacent areas. These include:

- › A seven-foot tall security fence will be installed around the perimeter of the array to meet the National Electric Safety Code and exclude large mammals such as deer. The bottom of the fence will be raised six inches to permit amphibians, reptiles, and small mammals to pass through the Project Area during the operational phase.
- › A pollinator habitat pilot project will be implemented described in the Pollinator Habitat Plan and as shown on Site Plan sheets L-1.3 through L2.1.
- › Invasive plant species will be controlled within the TVS Project Site to encourage the establishment of native plants. Invasive plant controls are discussed in the Vegetation Management Plan.



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Wetlands

Wetlands may provide important services such as improvements to water quality, fish and wildlife habitat, and flood protection. Wetlands are protected by the Section 404 of the federal Clean Water Act and the Connecticut Inland Wetlands and Watercourses Act. The following protective measures will be implemented.

- › The Project avoids direct impact to inland wetlands and watercourses. Onsite wetlands and watercourses have been field delineated with pink and blue plastic flagging, field located, and depicted on plans. Prior to the start of a work activity, wetland flags in the vicinity of the activity will be reinstalled to provide clear visual guidance of the protected areas.
- › New wetland crossings are not required to complete the Project. Existing farm road crossings will be utilized to reach work sites. Culverts will be inspected to confirm that they are sound and capable of supporting construction equipment prior to use.

Indirect impacts to wetlands and watercourses will be minimized through implementation of the site-specific SWPCP developed for the Project and approved by the CT DEEP. As provided in preceding Section 2.0, entrenched silt fence will be installed along the entire Project LOD to exclude reptiles and amphibians. A wood mulch filter berm will be provided along segments of the LOD slope of the Project. Where the LOD is upgradient of wetlands or watercourses, a 12-inch compost filter sock will be installed at the toe of the silt fence with the woodchip filter berm outside the silt fence.



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Vernal Pools

Vernal pools are considered watercourses under the Connecticut Inland Wetlands and Watercourses Act and as such these resources are regulated by municipal wetland agencies. Vernal pools are characterized by the following features:

- › Physical features and the presence of one or more obligate vernal pools species (e.g. wood frogs).
- › Contains water for approximately two months during the growing season.
- › Confined depression that lacks a permanent outlet stream.
- › Contains no fish.
- › Dries out in most years.

No vernal pools were observed within the property as all farm ponds supported fish populations.



7

Prime and Important Farmland Soils

An Agricultural Soil Protection Plan has been prepared for the TVS Project. This section briefly summarizes the land management practices to minimize Project impacts to the existing soil resources, and manage and enhance soil quality within the TVS Project Site. The Agricultural Soil Protection Plan developed for the TVS Project seeks to incorporate practices that will enhance soil quality and avoid, to the extent practicable, operations or practices that impair soil function.

7.1 Avoiding and Minimizing Soil Impacts

Soil compaction degrades the ability of soil to perform several important services by reducing infiltration rates, the ability of the soil to exchange gases and restricting root penetration. The most significant contributor of soil compaction during the construction of the TVS Facility will be traffic by construction equipment. Practices to minimize impacts include:

- › Operate on existing farm roads when possible.
- › When possible, use lower ground pressure tracked equipment to haul construction materials across fields and to drive posts.
- › Avoid crossing fields with heavy equipment such as dump trucks or concrete trucks.
- › Vibration can cause compaction to penetrate deeper into the soil profile, operate tracked pile drivers to disperse this force.
- › Avoid travel over saturated or wet soils whenever possible.

- › To the extent practicable, establish and maintain vegetative cover across farmland during all phases of construction.

7.2 Temporary Access Roads

- › If temporary access roads are required to cross the agricultural fields during construction or decommissioning then an underlayment of geotextile matting designed for soil separation will be placed over the exposed topsoil (or if topsoil is stripped subsoil) surface prior to the use of temporary gravel or processed stone access fill material. These materials shall be removed when use of the temporary access roads are no longer needed.

7.3 Top Soil Removal and Vegetated Windrows

- › When necessary, topsoil will be removed and windrowed separate from subsoil stockpiles. The windrows or stockpiles of topsoil will be planted with a temporary seed mix and will be maintained for reinterment during the decommissioning process.

7.4 Decommissioning & Decompaction

- › At decommissioning any access roads will be removed to expose original subsoil. This subsoil will be broken up by deep tillage using a deep-ripper or heavy-duty chisel plow. The topsoil that has been maintained in vegetated windrows will be applied to match adjacent grades.
- › Soil amendments will be applied according to recommendations provided by the soil testing lab.
- › Areas with less than 70 percent vegetative cover will be seeded with a temporary or permanent seed mix based upon the intended use of the site after the TVS facility is decommissioned.