RRS-SW-3

Memorandum

To: Reservoir Road Solar, LLC

Date: December 2, 2024

Project #: 58952.07

From: Stephanie Wyman, PE, Civil Engineer

Re: Section 248 Primary Agricultural Soils Assessment

Introduction

At the request of Encore Renewable Energy ("Encore") and on behalf of Reservoir Road Solar, LLC ("Petitioner"), VHB has prepared this technical memorandum in support of a planned 2.375-megawatt ("MW") alternating-current ("AC") ground-mounted solar electric generation facility ("Project") that will occupy approximately 10.5 acres of land spanning two parcels of land. The Project site is located off Reservoir Road in Berkshire, Vermont (see Site Plan, *Exhibit RRS-SC-2*). The content of this technical memorandum presents the results of an assessment of the Project as it relates to the following criterion under 30 V.S.A. § 248(b)(5), which are given due consideration by the Vermont Public Utility Commission ("PUC") in its review of the Project for a Certificate of Public Good ("CPG"):

- Primary Agricultural Soils – as defined by 10 V.S.A. § 6001(15)

Project Description

The proposed Project will consist of the installation of a 2.375-megawatt ("MW") alternating-current ("AC") solar electric generation facility to be located within an approximately 10.5-acre fenced Project area. The Project spans two adjacent parcels located north of Reservoir Road and to the west of the Enosburgh Falls Reservoir in Berkshire, Vermont. See Site Plan, *Exhibit RRS-SC-2*.

The Project consists of ground-mounted, fixed-tilt solar modules on metal racks arranged in rows running east to west in arrays. More than half of the Project will be sited in what is currently an open field, whereas the other portion will be located in areas that are currently forested. Approximately 5.4 acres of tree clearing will be necessary to facilitate construction and reduce impacts from shading. The Project will involve earth disturbance from tree stump grubbing in these areas, as well as limited grading for construction including the following Project elements:

- Approximately 5,472 photovoltaic panels installed on ground-mounted racking systems, across approximately 10.5 acres of the site. The solar panels will be coated with a non-reflective glazing to reduce glare from the array, on ground-mounted racking systems, approximately ten to fifteen feet off the ground at their highest point;
- A network of string-inverters dispersed across the array connected with underground cables installed in protective conduit;
- Approximately 2,931 feet of agricultural-style perimeter fence, seven to eight feet in height;
- Temporary staging/laydown areas for delivery and short-term storage of materials;
- Widening and improvements to an existing access driveway to provide access to the solar site;
- Replacing two existing culverts (24" reinforced concrete pipe and 38" corrugated metal pipe) at the crossing of Trout Brook with a 15'x6.5' aluminum box culvert;

- An extension to the northern part of the existing access road up to the Project entrance, including a turnaround area;
- One 2,500 KVA pad-mounted transformer, located in the south-central portion of the array, with secondary oil containment providing 110% of the equipment oil volume with freeboard for 5 inches of rain; and
- Simple disconnection stormwater treatment practices at the entrance of the Project area.

Methods

Under 10 V.S.A. § 6001(15), a Primary Agricultural Soil ("PAS") is defined as:

> *(A) An important farmland soils map unit that the Natural Resources Conservation Service of the U.S. Department of Agriculture ("NRCS") has identified and determined to have a rating of prime, statewide, or local importance, unless the (Act 250) District Commission determines that the soils within the unit have lost their agricultural potential. In determining that soils within an important farmland soils map unit have lost their agricultural potential, the Commission shall consider:*
>
> > *(i) impacts to the soils relevant to the agricultural potential of the soil from previously constructed improvements;*
> >
> > *(ii) the presence on the soils of a Class I or Class II wetland under chapter 37 of this title;*
> >
> > *(iii) the existence of topographic or physical barriers that reduce the accessibility of the rated soils so as to cause their isolation and that cannot reasonably be overcome; and*
> >
> > *(iv) other factors relevant to the agricultural potential of the soils, on a site-specific basis, as found by the Commission after considering the recommendation, if any, of the Secretary of Agriculture, Food and Markets.*
>
> *(B) Soils on the project tract that the District Commission finds to be of agricultural importance, due to their present or recent use for agricultural activities and that have not been identified by the NRCS as important farmland soil map units.*

VHB's review is limited to the NRCS soil map unit designations with a prime agricultural soil rating of 1 (most desirable) through 7 (least desirable) with some soils with a rating of 8 included. Soils of statewide importance have an agricultural value of 7 or less, and soils of local importance consist of selected soil types with an agricultural value of 8 or less. VHB conducted a review of the NRCS soil map data to determine if PAS were present on the Project site and prepared a site plan (see Sheet C2.00 of *Exhibit RRS-SC-2*) that depicts the following:

- Soil unit names, boundaries, and agricultural ratings from the NRCS;
- Proposed impact activity type;
- Primary agricultural soils, provided from the Vermont Center for Geographic Information ("VCGI") and based on NRCS soil data; and,
- 2022 aerial imagery provided by VCGI depicting the existing site conditions.

The Project area, for purpose of this assessment, includes the following components:

- Array (defined by the perimeter fence);

- Access drive extension and turnaround area;
- Temporary construction access drive;
- Temporary widening of existing access drive;
- Temporary construction staging area;
- Improved culvert crossing at Trout Brook;
- Primary agricultural soil stockpiles;
- Proposed underground power runs;
- Equipment pad locations; and
- Stormwater treatment practices.

Results

Of the approximately 14.8 acres within the Project limits of disturbance, approximately 14.5 acres are undisturbed mapped Prime Agricultural Soils ("PAS"). Soils present within the Project area defined above include the following, which are classified by the NRCS as Prime or Statewide importance, and would therefore meet the PAS definition:

- Binghamville silt loam: Prime(b),
- Enosburg Loamy Fine Sand, 0 to 3 percent slopes: Prime(b), and
- Missisquoi loamy sand, 3 to 8 percent slopes: Statewide.

Impacts to PAS fall into two categories.

(i) Indirect impacts are areas within the Project area limits of disturbance which are not intended to be impacted but may be by construction traffic or other incidental operations. The overall potential indirect impacts within the Project limits of work will be approximately 7.8 acres (±).

(ii) Direct impacts include known areas of excavation or other work described below. Direct impacts have been further broken down into two categories, temporary and permanent. Temporary direct impacts are those which will be restored at the end of construction. Permanent direct impacts are impacts during the life of the project. Temporary and permanent direct impacts to PAS are described in the bullet points below.

As reflected in Table 1 – Direct PAS Impact Matrix, temporary direct impacts to PAS at the Project site will total approximately 1.1 acres (±) that would be restored following construction, which would include the following elements:

- Staging Area: During construction, approximately one foot of topsoil will be temporarily removed to facilitate a stabilized surface for material staging during construction.
- Temporary Widened Access Road: During construction portions of the access road will be widened to allow for construction vehicles to safely navigate to the site for deliveries.
- Replacement of Existing Culverts: To facilitate project construction and allow for safe vehicular access to the site, two existing culverts at the Trout Brook crossing will be upgraded.
- Trenching: Temporary impacts during construction include approximately four-foot-wide trenches within the site array to install underground power runs.

The following elements would involve direct PAS impacts for the life of the Project, totaling approximately 5.6 acres. These soils will be stockpiled on-site consistent with VT Agency of Agriculture Food and Markets ("AAFM") guidelines and will be restored upon Project decommissioning, as further described in the Mitigation Measures section below.

- Access Road: The Project is utilizing the existing access road from Reservoir Road to the extent practicable for site access, however a portion of new access road within mapped PAS impacts totaling approximately 0.07 acres

extending from the existing access is proposed to be constructed with a minimum of 18" of gravel material with geotextile fabric.

- Equipment locations: An area of approximately 0.001 acres will be excavated to approximately 3-4-feet for installation of the equipment pad required for transformer vault/oil containment.
- Grading & Vegetation Removal and Landscape Plantings: The remaining impacts are associated with the necessary grading for road drainage, vegetation removal and prime ag soil stockpiles.
- Stormwater Treatment: The project will utilize, to the extent practicable, simple disconnection treatment practices to treat stormwater runoff from the addition of the access road and equipment pad.

Table 1. Direct PAS Impacts Matrix.

Impact Type	Direct Impact (acres)
Temporary During Construction	1.1
Permanent, During Life of Project	5.6

Mitigation Measures

As the Project would involve direct impacts to PAS for the Project duration, the following mitigation measures will be incorporated to avoid a loss in the potential of on-site soils to support or contribute to an economically viable or commercial agricultural operation:

1. Any topsoil necessarily stripped from the staging area during construction as well as soils disturbed from trenching will be placed in designated stockpile locations and restored in accordance with the AAFM *Act 250 Procedure: Reclamation of Vermont Agricultural Soils* and will implement best management practices for erosion prevention and sediment control ("EPSC"), including application of a permanent stabilization seed mix per an approved construction stormwater discharge permit authorization.
2. The Project will adhere to the requirements of a decommissioning plan, to be submitted with the petition filing, which will include requirements to restore PAS impacted by the Project to pre-construction location and condition and restore any soil that may be indirectly compacted as a result of the Project.
3. PAS excavated from the equipment pad location and access road locations will be stockpiled for the life of the Project by soil type within the Project fenceline, with soil horizons segregated in reverse order of excavation in accordance with the AAFM *Act 250 Procedure: Reclamation of Vermont Agricultural Soils*. Stockpiled PAS soils will be segregated from any non-PAS soil or other stockpiled material.
4. If requested by AAFM, to mitigate against potential PAS compaction due to the Project, upon removal of Project elements at decommissioning, the areas of Project within PAS that are currently used for agriculture can be tilled with a subsoiler to alleviate any potential soil compaction.
5. Also, if requested by AAFM, the Project would agree to pre-construction soil/bulk density sampling as well as reclamation bulk density sampling and mitigation as necessary. The Project will result in minimal direct impacts to PAS for the Project duration. These minimal impacts will be mitigated by PAS soil stockpiling and adherence to a PAS restoration plan with the Project's decommissioning plan in accordance with the AAFM

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Act 250 Procedure: Reclamation of Vermont Agricultural Soils. PAS temporarily impacted during Project construction will be restored according to approved Project plans. Finally, any potential indirect impact from the Project may be mitigated by subsoil tilling, or other method, at decommissioning, if required.

Accordingly, it is VHB's conclusion that there will be no undue adverse effects on PAS as a result of this Project. At the end of the Project's useful life, it will be decommissioned, and the site will also be restored to its existing condition to the greatest extent practicable, ensuring the preservation of agricultural soils over the long-term.

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