



CONNECTICUT DEPARTMENT OF AGRICULTURE

450 Columbus Blvd, Suite 701 | Hartford, Connecticut 06103 | 860.713.2500

Office of the Commissioner

An Equal Opportunity Employer



July 16, 2025

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Greenskies Clean Energy – Gager Hill Road, Scotland, Proposed 4.625-Megawatt AC Solar Generating Facility

Dear Executive Director Bachman:

Pursuant to 16-50k(a) of the Connecticut General Statutes, we have reviewed the above cited project with respect to agricultural impacts, specifically, to determine whether “...such project will not materially affect the status of such land as prime farmland...”

This project will be located on 92.5 acres comprised of two parcels located on Gager Hill Road (20 acres) and Huntington Road (72.5 acres) in Scotland, CT owned by Carsey Unlimited, LLC. The property contains 64 acres classified as prime farmland soils. The proposed project site would occupy approximately 25.9 acres, of which 23.6 acres are classified as prime farmland soils. 19 acres are included in the generation footprint and within the footprint, 18.7 acres are classified as prime farmland soils.

In summary:

Subject Property	92.5 acres
Prime Farmland Soils within Subject Property	64 acres, 69.2%
Project Site	25.9 acres
Prime Farmland Soils within the Project Site	23.6 acres
Generation Footprint	19 acres
Prime Farmland Soils within the Generation Footprint	18.7 acres

In an email to the Department of Agriculture, dated June 2, 2025, the Petitioner (Greenskies Clean Energy LLC) has agreed to implementation of agrivoltaics within the Generation Footprint through farming commercially saleable perennial plants, such as herbs or natural dye plants, in the interrow spacing. Potential herbs may include oregano, rosemary, thyme, lavender and elderberry. Areas not farmed (underneath and between the arrays and along the fence line) will be planted with a seed mix of perennial grasses such as the Ernst Solar Farm Seed Mix (ERNMX-186), or equivalent, to support pollinator species. To support the agrivoltaics, the following modifications will be implemented:

1. The lowest point of the solar modules will be raised higher than is needed for solar to allow for increased sunlight to the area below the modules. Raising panels also allows for agricultural equipment to more easily fit down rows.

2. The inter-row spacing is designed to allow access for agricultural equipment to operate within the space between arrays, and the increased width also allows for sufficient sunlight levels.
3. The arrays will be oriented north-south to maximize available sunlight for plants to grow.
4. For farmers' safety, electrical feeders will be secured to the modules/racking directly or placed underground and increased signage and fencing will be present to ensure farm workers are not exposed to unsafe conditions. Further, the farmer will receive safety training and site orientation prior to gaining access to the Facility.

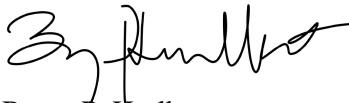
Based on preliminary information provided to the Agency (enclosed), and the successful implementation of the co-uses described in the attached, the Department of Agriculture concludes this project will not materially affect the status of project land as prime farmland.

This letter is conditioned upon all dual use plans being fully implemented and operational for the duration of the solar installation. If the Petitioner sells the solar project to another entity, dual use programing and decommissioning responsibilities must carry over to the new owner.

Should any project changes raise concerns to the Agency, we reserve the right to modify our position on this project, including opposing it, as detailed plans are provided by the Petitioner. Nothing in this letter relieves the Petitioner of other obligations under applicable federal, state, and local law that may be necessary as part of the proposed project design and implementation.

If you have any questions, please feel free to contact Jaime Smith of my staff. Jaime can be reached at jaime.smith@ct.gov.

Sincerely,



Bryan P. Hurlburt
Commissioner

Enc. 24412_Scotland Agrivoltaics Farm Plan
Scotland Vegetation and Soil Management Plan Soil Health Assessment

Cc: Katie Dykes, Commissioner, Department of Energy and Environmental Protection
Emilie Cohen, Greenskies Clean Energy LLC

Agrivoltaics Farm Plan

Gager Hill Solar Project
Middlesex County, Connecticut

Prepared for:
Greenskies Clean Energy
127 Washington Avenue
North Haven, CT 06473

Prepared by:
Verdantas LLC
200 Court Street, 2nd Floor
Middletown, CT 06457
+1 860-894-1022

Verdantas Project No: 24412

May 2025



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1. Property Information

1.1 Subject Property Information

Greenskies is developing a solar electric generation facility, the Gager Hill Solar Project, in the Town of Scotland, Windham County, Connecticut (the “Project”, or the “Facility”; **Figure 1**). The Project is located on two parcels (Subject Property) with details as provided in **Table 1**.

Table 1. Parcels Within Which the Project is Sited

Subject Property Address	Owner	Ownership Date	Total Subject Property Acreage	Parcel Number(s)	Parcel Zoning
Gager Hill Road	Carsey Unlimited LLC	04/20/2023	20 acres	00058800	RA
Huntington Road	Carsey Unlimited LLC	09/27/2022	72.5 acres	00059500	RA

In total, the Subject Property comprises 92.5 acres. The total proposed development area comprises 25.9 acres of the Subject Property (the “Project Site”). The Generation Footprint (the fenced in areas supporting infrastructure) will comprise 19 acres.

The Subject Property supports wetlands, forests, and several agricultural fields. The Project Site and Generation Footprint are sited within the agricultural portion of the properties to avoid impacts to sensitive natural resources. There are no farm agreements or leases in place for the agricultural areas. Photographs from a Subject Property reconnaissance are included in **Appendix A**. **Figure 2** provides an aerial of the Subject Property, the Project Site, and the Generation Footprint.

There are 10 soil map units present in the Subject Property, which contains approximately 64 acres of prime farmland. **Table 2** provides the soil map units within the Subject Property and their farmland classification. **Appendix B** provides a custom soil resource report for the Project.

Table 2. Soil Map Units within the Subject Property.

Soil Map Unit	Farmland Classification	Acreage in Project Area	Percent of Project Area
Ridgebury fine sandy loam, 0 to 3 percent slopes	Farmland of statewide importance	7.1	7.60%
Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	Not prime farmland	15.5	16.80%
Sudbury sandy loam, 0 to 5 percent slopes	All areas are prime farmland	1.2	1.30%
Hinckley loamy sand, 3 to 15 percent slopes	Farmland of statewide importance	1.5	1.70%
Sutton fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	20.9	22.60%

Soil Map Unit	Farmland Classification	Acreage in Project Area	Percent of Project Area
Sutton fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	27.7	30.00%
Sutton fine sandy loam, 0 to 8 percent slopes, very stony	Farmland of statewide importance	2	2.20%
Canton and Charlton fine sandy loams, 3 to 8 percent slopes	All areas are prime farmland	12.8	13.90%
Rippowam fine sandy loam	Farmland of statewide impacts	2.4	2.60%
Ninigret fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	1.3	1.4
Total		92.5	100.0%

1.2 Project Overview

The Project will have a capacity of up to 4.625 MWAC. The Project will be participating in the Non-residential Renewable Energy Solutions (NRES) program. Of the 99 acres within the Subject Property, the Project Site will comprise 25.9 acres and the ultimate Generation Footprint will comprise 19 acres. The Project Site will contain 23.6 acres of prime farmland, and the Generation Footprint will contain 18.7 acres of prime farmland. **Figure 3** shows the location of prime farmland soils in relationship to the Project Site and the Generation Footprint.

The Project will consist of arrays of ground-mounted solar modules, metal racking systems and support piles, underground electric collection lines, inverters, transformers, pyranometers, stormwater controls, several utility poles, and an associated access road comprised of crushed stone. The Project is designed to have a lifespan of 21 years, with potential extensions.

1.2.1 Site Access

In the event that a person authorized by the state of Connecticut would like to request access to the site for data collection purposes related to Agrivoltaics, they may reach out to Steve Martineau of Greenskies Clean Energy's Asset & Monitoring Team at steven.martineau@greenskies.com.

1.2.2 Potential Sale of Project

If the Project is sold to another entity, this Farm Plan as well as decommissioning responsibilities, will carry over to the new owner.

1.3 Past Agricultural Activities

For at least the past five years, the agricultural fields have alternated between corn (*Zea mays*) and soybean (*Glycine max*) production. Most recently, in 2024, the site was used to farm feed corn. Construction and operation of the proposed Project would require ceasing agricultural operations within the Generation Footprint. The remaining portions of the Subject Property, if desired by the landowner, may continue to be used for agricultural purposes. It is important to

note that the Generation Footprint comprises only a small portion of the current overall farming operation, as the farmer uses hundreds of other acres throughout the region. Beyond crops, the Subject Property does not support livestock, farm buildings, etc. **Figure 2** provides an aerial depicting the location of crops in relation to the Project Site and Generation Footprint.

2. Property Management

2.1 Soil Displacement Considerations

Prime farmland is a valuable resource in Connecticut and of the utmost importance to Greenskies and the participating landowner. The Project must conserve prime farmland, meet stormwater management requirements, grow crops throughout its duration, and return the site to agricultural use post-decommissioning. Therefore, Greenskies has formed the following objectives related to the Project:

1. Minimize disturbance to prime farmland soils within the Project Site during the construction, operation, and decommissioning phases of the Project;
2. Facilitate ground cover establishment for stormwater management;
3. Restore prime farmland soils to near-original or better conditions upon decommissioning; and
4. Comply with all applicable federal, state, and local regulations.

Soils within the Project Site have been extensively cultivated and altered for agricultural production. Therefore, studying the physical and chemical properties of the soil prior to development activities establishes a soil health and quality baseline that can be used to guide the management of prime farmland at the facility. Greenskies has commissioned a **Soil Health Assessment** for the Project, provided under separate cover, that establishes these baseline conditions. Additionally, Greenskies has developed a **Vegetation and Soils Management Plan**, also provided under separate cover, that provides information on how the above objectives plan to be implemented and achieved.

Some displacement of prime farmland soils during construction of the Project is planned to occur. This displacement will primarily occur from the installation of panel arrays and support pilings, interconnections, and stormwater management devices. Soil displacement from construction would include trenching for collection lines; the driving of piles and utility poles into the ground; and grading. Grading for the Project is very limited. Grading will only occur in a 25-to-50-foot area surrounding either side the proposed access road, which is necessary to create swales to manage stormwater run-off from the impervious surface created by the road. Because grading is anticipated to be very limited, topsoil stockpiling is also anticipated to be very limited. In addition to the **Vegetation and Soils Management Plan**, Greenskies has developed a **preliminary Erosion and Sediment Control Plan (ES&C Plan)** that includes best management practices (BMPs) for topsoil management during construction. The preliminary ES&C Plan will be provided to the Connecticut Siting Council (CSC) as part of the petition process.

2.2 Production Agriculture

As identified in **Section 1.3**, the Project Site has been in production agriculture for the last five years. The agricultural fields alternate every other year between corn and soybean farming. In 2024, the fields were used to grow feed corn.

2.3 Proposed Agricultural Co-Use

Greenskies proposes a dual-use solar approach (also referred to as agrivoltaics), through farming commercially saleable perennial plants, such as herbs or natural dye plants, within the Generation Footprint. According to research completed by the National Renewable Energy Lab (NREL) Innovative Solar Practices Integrated with Rural Economies and Ecosystems (InSPIRE) project, there are five central elements that lead to agrivoltaics success (the “Five C’s”):

1. Climate, Soil, and Environmental Conditions
2. Configurations, Technologies, and Designs
3. Crop Selection and Cultivation Methods, Seed and Vegetation Designs, and Management Approaches
4. Compatibility and Flexibility
5. Collaboration and Partnerships.

Greenskies’ Farm Plan is developed based on these guiding principles.

2.3.1 Farm Plan

Greenskies proposes to farm commercially saleable perennial plants, such as herbs, in the inter-row spacing (i.e. the rows between panel arrays). Areas that will not be farmed, such as the areas underneath the arrays, and between the arrays and the fence line, will be permanently stabilized with a seed mix containing perennial grasses that will also include some forbs that can provide support for pollinator species.

2.3.2 Seed Mix Identification

Greenskies is in the process of identifying potential farm partnerships for the Project. Due to the need for dual-use compatibility and flexibility over the 21-plus year span of the Project, the exact type of crop will inevitably vary. Perennial herbaceous and semi-herbaceous cash crops are selected for this Farm Plan because they are the most compatible with erosion and sediment control stabilization requirements for solar farms, and because they do not risk shading or otherwise interfering with the operation of the solar panels. Herbs are specifically considered in this Plan because there is a market in the immediate region for such locally grown agricultural products, through the Town of Scotland Farmer’s Market and several farm-to-table restaurants in adjacent towns. Potential herb species being considered are:

1. Oregano
2. Rosemary
3. Thyme
4. Lavender
5. Elderberry

However, other perennial herbaceous cash crops may be selected and grown on-site, based on site suitability, changing market conditions, and the farmers’ preference. Regardless of the cash crop selected, plants will be cultivated in the inter-row spacing, inside the Generation Footprint.

Areas that will not be farmed will be permanently stabilized with a seed mix containing perennial grasses with some forbs that can provide support for pollinator species. **Table 3** provides a suggested seed mix for stabilizing non-farmed areas of the Project. The **Ernst Solar Farm Seed Mix (ERNMX-186)**, or equivalent, will provide rapid stabilization of exposed soils while also providing an appropriate clearance between the ground and the solar panels. The **Vegetation and Soils Management Plan** provides further details regarding appropriate seed mix selection.

Table 3. Ernst Solar Farm Seed Mix – ERNMIX-186, Seeded at 4lb/1,000sq.ft.

Botanical Name	Common Name	% of Seed Mix
<i>Festuca rubra</i>	Creeping Red Fescue	45.50%
<i>Festuca longifolia</i> , ‘Sturgeon’	Hard Fescue, ‘Sturgeon’	15.00%
<i>Festuca longifolia</i> , ‘Sword II’	Hard Fescue, ‘Sword II’	15.00%
<i>Festuca rubra</i> ssp. <i>commutata</i>	Chewings Fescue	10.00%
<i>Poa pratensis</i> , ‘Navy’	Kentucky Bluegrass, ‘Navy’	5.00%
<i>Poa pratensis</i> , ‘Wildhorse’	Kentucky Bluegrass, ‘Wildhorse’	5.00%
<i>Trifolium repens</i> , Dutch	White Clover, Dutch	4.50%
TOTAL		100%

While the seed mix formulation provided above is subject to change, the guiding philosophy of the mix is not. To provide increased pollinator support and ecosystem services, other low-growing forbs may be included, such as birds-foot trefoil (*Lotus corniculatus*) or other species of clover (*Trifolium* spp.).

Throughout the life of the Project, cover crops may be used to improve soil health or suppress weeds. Cover crops will be selected based on site conditions, the goal for its use, and the growing window of the cash crop. Locally appropriate resources, such as the Northeast Cover Crops Council Cover Crop Selector, will be used to select the appropriate cover crop at the time of its use.

2.3.3 Planting Techniques and Sequence

Vegetation will need to be established in the following areas:

1. **Array Area**, defined for the purposes of this Plan as the area within the fence line (also referred to in this plan as the Generation Footprint).
2. **Border Area**, defined for the purposes of this Plan as the area outside of the fence line and under Greenskies’ lease control.

There are no stormwater detention areas proposed for the Project, and therefore, a Stormwater Detention Area will not be addressed in this Plan. The Array Area will be planted with two distinct categories of species: 1) the intended cash crop will be planted in the inter-row spacing and 2) a permanent grass and forb mix will be planted within the areas underneath the arrays, and between the arrays and the fence line.

The Border Area comprises the areas outside of the Generation Footprint that are under Greenskies’ lease control. The Border Area is proposed to be vegetated with the same grass/forb mix that will be used in the Array Area (**Table 3**).

This section describes how planting of vegetation will be conducted for each of the above areas. The **Vegetation and Soils Management Plan** provides more detail regarding site preparation, temporary cover crop installation, and permanent seed mix installation up to the end of construction.

2.3.3.1 Overall Planting Sequence

The Project will be revegetated following this sequence:

1. During construction, any disturbed and stockpiled areas of topsoil that will be left exposed for more than 30 days and not subject to construction traffic will immediately receive a temporary seeding and mulching. If the season prohibits temporary seeding, the disturbed area will be mulched with straw, hay, or equivalent and bound in accordance with *Connecticut Guidelines for Soil Erosion and Sediment Control* standards.
2. During construction and immediately following initial disturbance or rough grading, all critical areas subject to erosion will receive a temporary seeding in combination with straw mulch or a suitable equivalent, in accordance with *Connecticut Guidelines for Soil Erosion and Sediment Control* standards.
3. When construction is completed in a location that is slated to receive the grass/forb seed mix and the season allows (generally, between March and November), permanent seeding will occur.
4. When construction is completed in a location that is slated to support crops, a rotation of temporary seed mixes will be installed and maintained, as necessary, until the Project reaches its Commercial Operation Date (COD).
5. Upon COD, the farmer will gain access to the Generation Footprint. The farmer will install desired crops once they have prepared the planting areas and the appropriate planting season is reached.

2.3.3.2 Overall Timeline and Planting Methods

The Project is currently slated for construction to begin in Spring or Summer of 2026, and construction will continue up to the end of the year. However, because the Project is in the early stages of permitting, the timing of certain milestones may alter the current development timeline. Generally speaking, permanent vegetation will be planted in the following windows with the following methods:

1. **Permanent Grass/Forb Mix in Array and Border Areas:** planting may occur at any point during the growing season, generally between March and November. The seed mix should be installed primarily using a seed drill, however, broadcast seeding may occur in locations where limited access for the seed drill is available, such as directly underneath the arrays.
2. **Cash Crops:** planting may occur at any point during the growing season, but is dependent on the species being planted and the planting method. Further, planting method and timing may vary from year to year as the farm operation progresses. Crops are most likely to be installed on the site via a seed drill, if planted from seed, or via equipment like a no-till planter or a drill attachment, if from plugs. The farmer will follow appropriate local resources to determine the timing and method of installation of crops.
3. **Cover Crops:** planting may occur at any point during the growing season, generally between March and November, but is dependent on the species being planted. Species selection of cover crops will vary based on time of year, desired goals, and the growing window for the cash crops. Cover crops may be planted using a seed drill or through broadcast seeding. Locally appropriate resources, such as the Northeast Cover Crops Council Cover Crop Selector, will be used to select the appropriate cover crop at the time of its use.

3. Design Specifications

The following sections describe the Project's design specifications.

3.1 Equipment Specifications

At this stage of development, Greenskies has not yet selected a construction contractor for the Project. This is planned to occur after the initial round of permitting is completed. The specifications provided in this document are subject to change as Project design progresses with the contractor. Changes to the specifications, however, are not anticipated to be substantial, as Greenskies is developing the Project with farming as a long-term and integrated aspect of the Facility. The proposed equipment specifications are as follows:

- Panel height (taken from center): 6.387 feet
- Panel dimensions:
 - Length: 7.82 feet
 - Width: 4.28 feet
- Row width: 1 panel wide (4.28 feet)
- Module inter-row spacing: 8 feet
- Tracking: Single-Axis

3.2 Configuration Supporting Dual-Use

The Facility is planned to be designed in a way that agricultural activities can successfully take place within the Generation Footprint. The following modifications have been made to achieve this goal:

1. The lowest point of the solar modules will be raised higher than is needed for solar only to allow for increased sunlight to the area below the modules. Raising panels also allows for agricultural equipment to more easily fit down rows.
2. The inter-row spacing is designed to allow access for agricultural equipment to operate within the space between arrays, and the increased width also allows for sufficient sunlight levels.
3. The arrays will be oriented north-south to maximize available sunlight for plants to grow.
4. For the farmer's safety, electrical feeders will be secured to the modules/racking directly or placed underground. Increased signage and fencing will ensure that farm workers are not exposed to unsafe conditions. Further, the farmer will receive safety training and site orientation prior to gaining access to the Facility.

3.3 Analysis of Sunlight Reduction

Greenskies used the Agricultural Canopy Shading Analysis Tool to model the amount of direct sunlight available per square foot with time-phased shade map simulations to assist with crop planting. This analysis incorporated the CT DOAG's growing season and time of day considerations. The meteorological data used for this analysis was pulled from the nearest station, which was in Rutland, Massachusetts, approximately 60 miles away. The model uses the specifications provided in **Section 3.1** with a representative Study Area comprising 20 rows of arrays, where each row is one panel wide and 26 panels tall. **Table 4** summarizes the results of the analysis. **Figure 4** provides a "heat map" of potential shade reduction across the study period.

Table 4. Results of Dual-Use Shading Analysis in Study Area

Overall Results	
Minimum Sun ¹	48%
Maximum Sun ²	100%
Average Sun	63%
% Sun	Square Feet
100% - 90%	467
90% - 80%	227
80% - 70%	3,019
70% - 60%	27,384
60% - 50%	13,376
50% - 40%	30
40%-30%	0
30%-20%	0
20%-10%	0
10%-0%	0
TOTAL	44,503

¹The lowest observed sunlight percentage within the Study Area across the entire Study Period.

² The highest observed sunlight percentage within the Study Area across the entire Study Period.

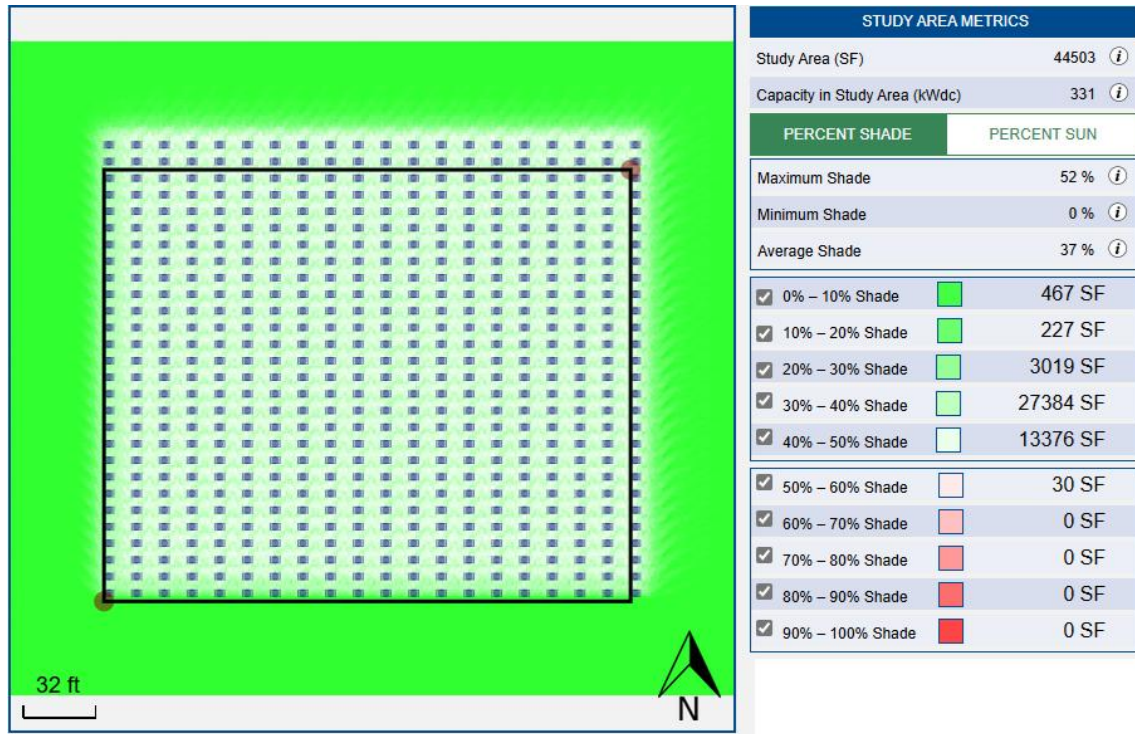
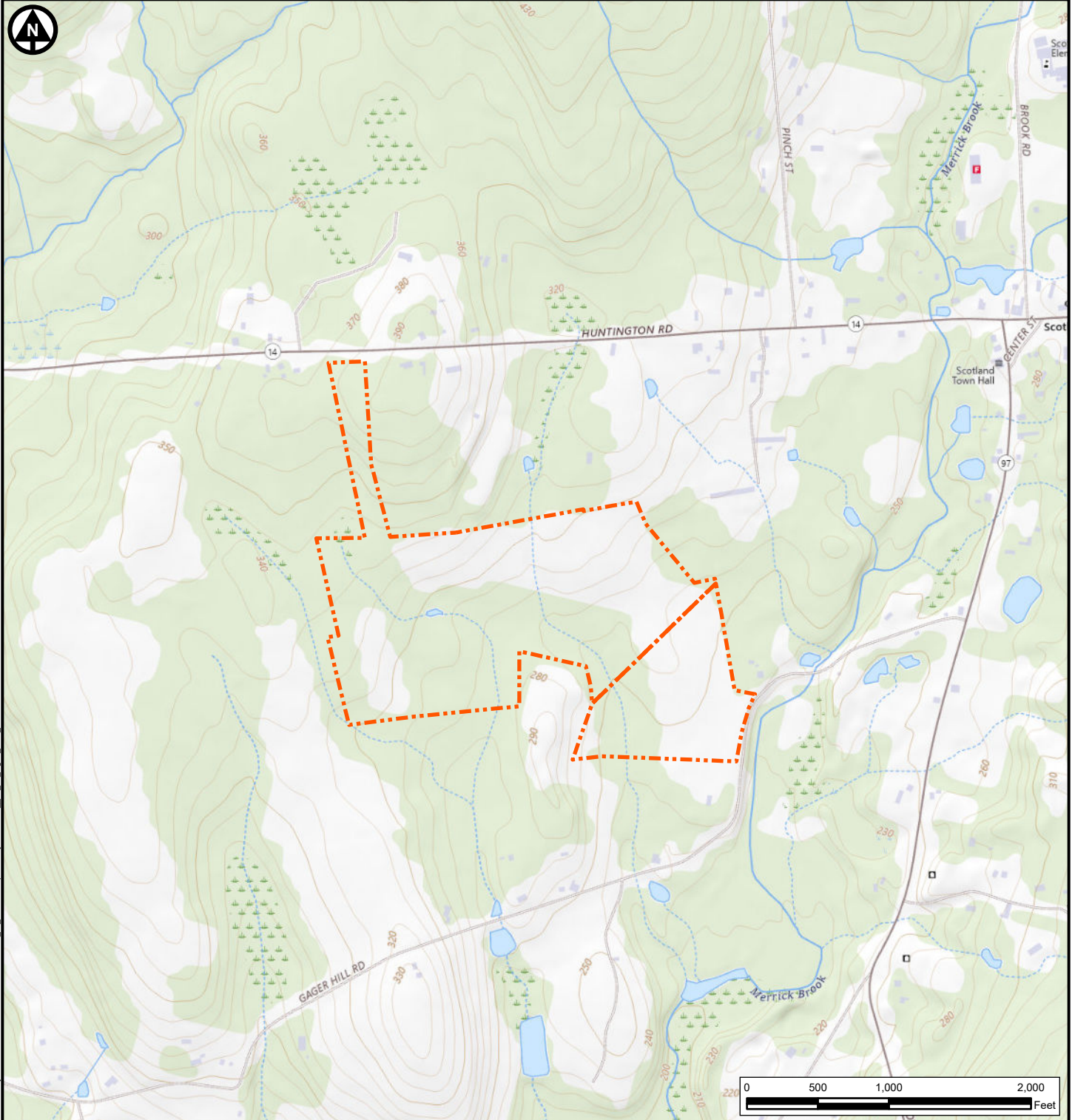


Figure 4: Results of the Dual-Use Shading Analysis Tool

The average shade reduction across the study period is 37%. The Analysis Tool shows that the highest amount of shading (50-60%) across the study period would occur primarily in the areas directly underneath the arrays, where crops are not proposed to occur. An average shade reduction of 37% is beneficial to the proposed crops (herbaceous or semi-herbaceous perennial herbs), because they tend to require less overall sunlight compared to the crops that are currently grown on-site (6 to 8 hours, compared to 8 to 10 hours of sun). Further, it is likely that a variety cash crops will be grown in the Generation Footprint simultaneously, allowing for the farmer to take advantage of microclimate conditions created by the arrays to select the optimal growing location for each cash crops.

Figures



 Subject Property

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127 Washington Ave
North Haven, CT 06473

Site Location Map

Scotland Solar Facility
Greenskies Clean Energy

Project Number
24412

Date
04/2025

Author
bsanchez

Scale
1 in = 1,000 ft

Figure
1



Sources:
Aerial Imagery: Esri Imagery Web Service dated 2023.

Topographic Map: National Geographic Society Web Service.

Quadrangle: Scotland, Connecticut published 1959



- Subject Property
- Generation Footprint
- Project Site

Note: The aerial photo was acquired through the Esri Imagery Web Service. Aerial photography dated 2023.

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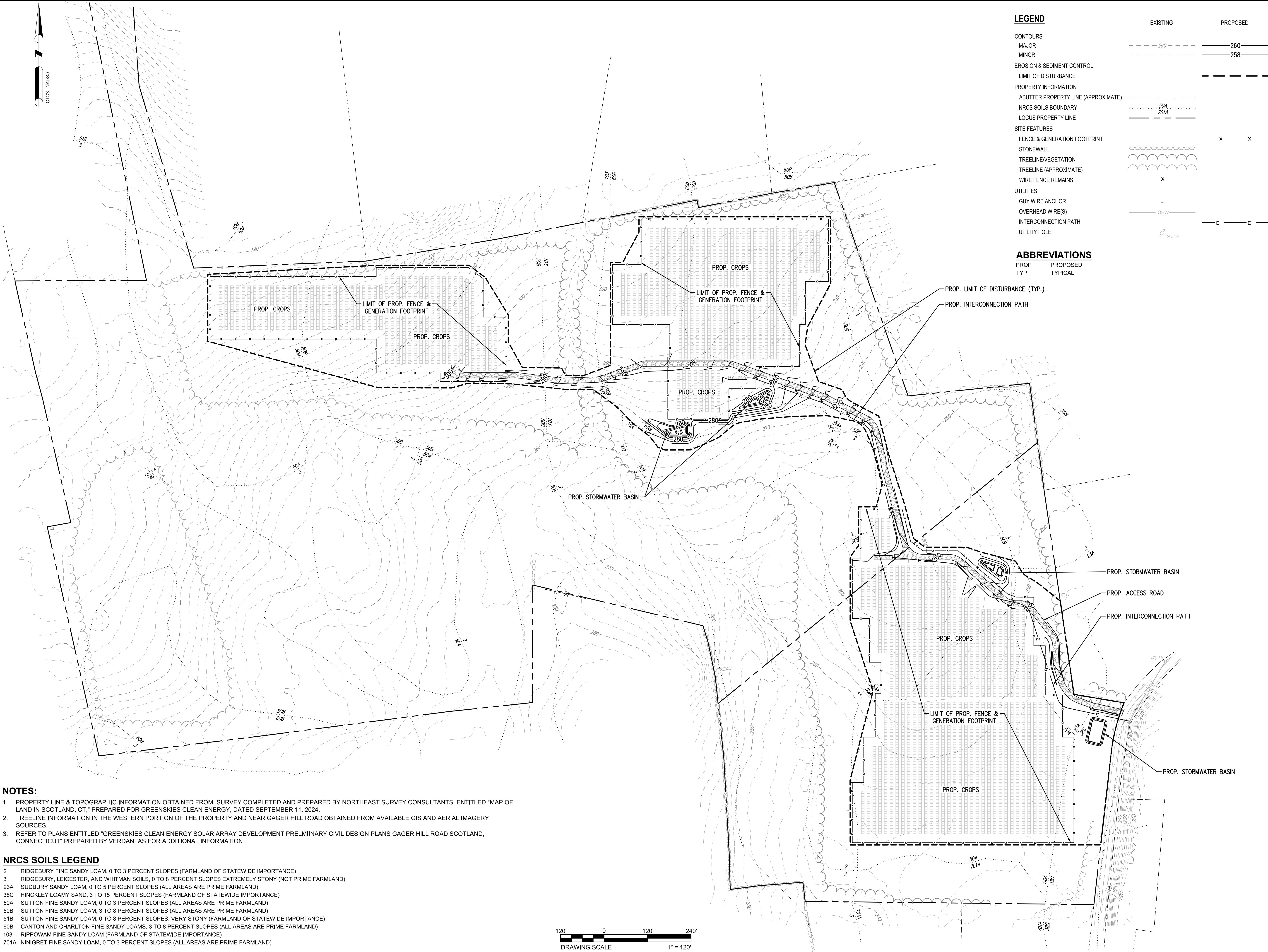
127 Washington Ave
North Haven, CT 06473

Site Overview Map

Scotland Solar Facility
Greenskies Clean Energy

Project Number	24412
Date	04/2025
Author	bsanchez
Scale	1 in = 500 ft
Figure	2

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SCOTLAND-WINDHAM COUNTY-CONNECTICUT
GAGER HILL ROAD

PROPOSED SITE PLAN
EXHIBIT

AGRIVOLTAICS FARM PLAN
GAGER HILL ROAD

Project Number	24412
Date	04/16/2025
Author	JMB
Scale	1"=120'
Figure	3

Appendix A

Site Photographs

Project Number: 24412

Client: Greenskies

Date: August 1, 2024

Field Data Record

Verdantas Field Personnel On-Site: Abigail Baker

Notes:



Image 1: Telephone pole off entrance to property

Image Direction:

Notes: 41.69100° N, 72.08904° W



Image 2: Photo of entrance taken from access road on property

Image Direction: °

Notes: 41.61908° N, 72.08933° W

Project Number: 24412**Client:** Greenskies**Date:** August 1, 2024

Image 3: Continuation of access road throughout property

Image Direction:

Notes: 41.69286° N, 72.09145° W



Image 4: Southeast corner of first open space

Image Direction: °

Notes: 41.69313° N, 72.09183° W

Project Number: 24412

Client: Greenskies

Date: August 1, 2024



Image 5: Small, apparent wetland region, west of location from Image 4

Image Direction: °

Notes: 41.69314° N, 72.09186° W



Image 6: Access road going back towards property entrance

Image Direction: °

Notes: 41.69314° N, 72.09187° W

Project Number: 24412

Client: Greenskies

Date: August 1, 2024



Image 7: Water pooling along edges of field

Image Direction: °

Notes: 41.69354° N, 72.09157° W



Image 8: Small stream running through path to furthestmost open field

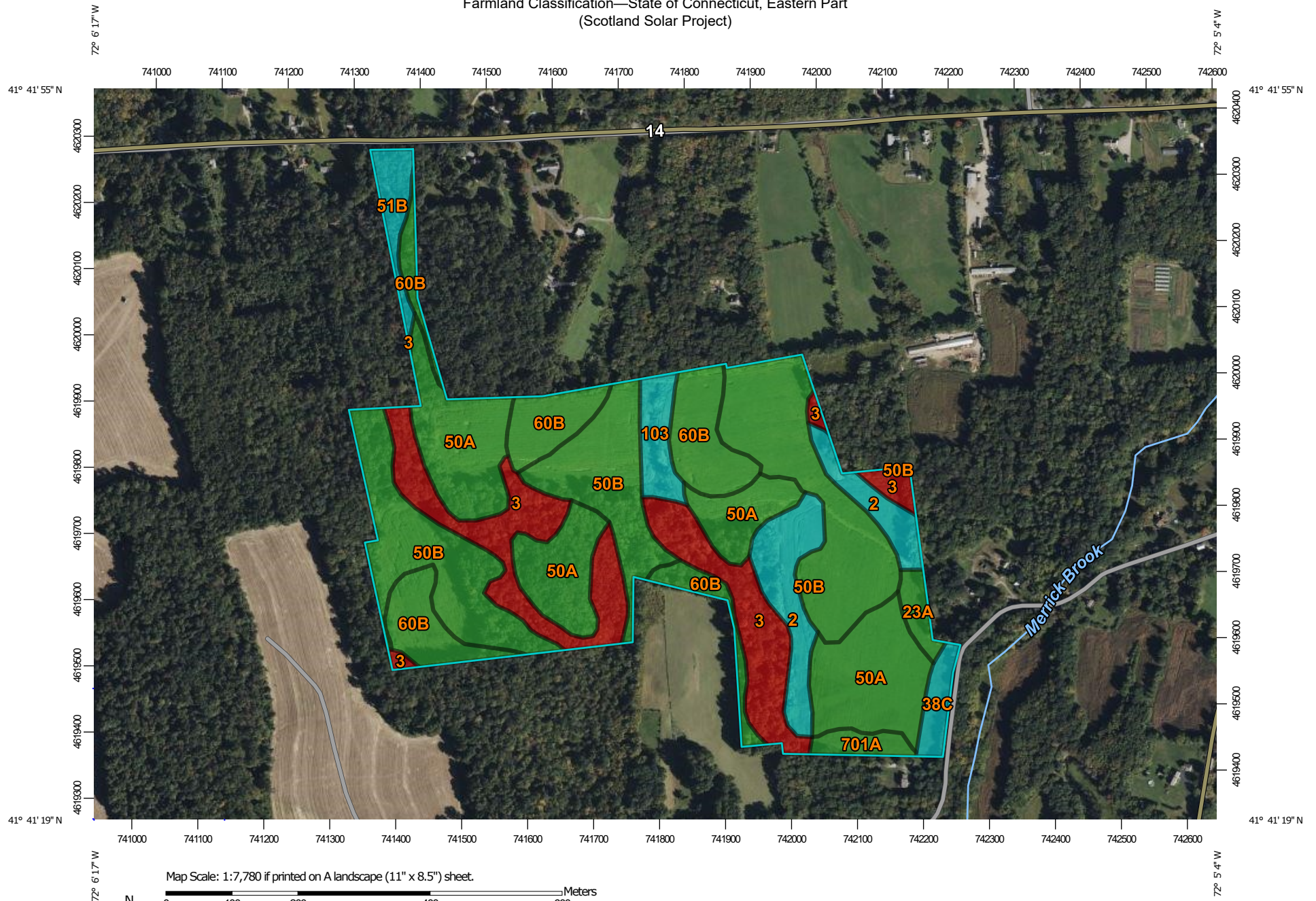
Image Direction: °

Notes: 41.69234° N, 72.09706° W

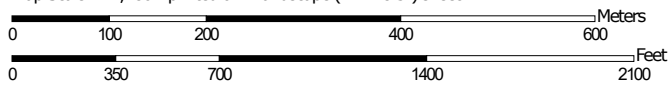
Appendix B

NRCS Soil Resource Report

Farmland Classification—State of Connecticut, Eastern Part (Scotland Solar Project)



Map Scale: 1:7,780 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



**Natural Resources
Conservation Service**


Web Soil Survey
National Cooperative Soil Survey

4/16/2025
Page 1 of 5

Farmland Classification—State of Connecticut, Eastern Part
(Scotland Solar Project)









MAP LEGEND








Area of Interest (AOI)






-  Area of Interest (AOI)








Soils



Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Farmland Classification—State of Connecticut, Eastern Part
(Scotland Solar Project)

	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season	Soil Rating Points			Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		Not prime farmland		Prime farmland if irrigated and reclaimed of excess salts and sodium
	Farmland of statewide importance		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if thawed		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance
	Farmland of statewide importance, if drained		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of local importance		Prime farmland if irrigated		Farmland of statewide importance, if drained
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season				Farmland of local importance, if irrigated		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
	Farmland of statewide importance, if irrigated						Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated

Farmland Classification—State of Connecticut, Eastern Part
(Scotland Solar Project)

<p> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if irrigated and drained</p> <p> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</p> <p> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p>	<p> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</p> <p> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if warm enough</p> <p> Farmland of statewide importance, if thawed</p> <p> Farmland of local importance</p> <p> Farmland of local importance, if irrigated</p>	<p> Farmland of unique importance</p> <p> Not rated or not available</p> <p>Water Features</p> <p> Streams and Canals</p> <p>Transportation</p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p> <p>Background</p> <p> Aerial Photography</p>	<p>The soil surveys that comprise your AOI were mapped at 1:12,000.</p> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: State of Connecticut, Eastern Part Survey Area Data: Version 2, Aug 30, 2024</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	Farmland of statewide importance	7.1	7.6%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	Not prime farmland	15.5	16.8%
23A	Sudbury sandy loam, 0 to 5 percent slopes	All areas are prime farmland	1.2	1.3%
38C	Hinckley loamy sand, 3 to 15 percent slopes	Farmland of statewide importance	1.5	1.7%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	20.9	22.6%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	27.7	30.0%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	Farmland of statewide importance	2.0	2.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	All areas are prime farmland	12.8	13.9%
103	Rippowam fine sandy loam	Farmland of statewide importance	2.4	2.6%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	1.3	1.4%
Totals for Area of Interest			92.5	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



Vegetation and Soils Management Plan

Scotland Solar Project
Windham County, Connecticut

Prepared for:
Greenskies Clean Energy
127 Washington Avenue
North Haven, CT 06473

Prepared by:
Verdantas LLC
200 Court Street, 2nd Floor
Middletown, CT 06457
+1 860-894-1022

Verdantas Project No: 24412

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Appendices

Appendix A Soil Health Assessment
Appendix B Site Photographs

1. Introduction

This Vegetation and Soils Management Plan (VSMP) has been prepared for the Gager Hill Solar Project, a proposed solar electric generation facility in the Town of Scotland, Windham County, Connecticut (the “Project”, or the “Facility”; **Figure 1**). The Project will have a capacity of up to 4.625 MWAC. The Project is sited on two parcels comprising approximately 92.5 acres (the “Subject Property”). The proposed development area comprises 25.9 acres of the Subject Property (the “Project Site”). The Generation Footprint (the fenced in areas supporting infrastructure) will comprise 19 acres. **Figure 2** provides an aerial of the Subject Property, the Project Site, and the Generation Footprint.

1.1 Purpose and Objectives

Preservation of agriculture is of the utmost importance to the Project, the state of Connecticut, participating landowners, and the community. The Project Site will contain 24.6 acres of prime farmland, and the Generation Footprint will contain 18.7 acres of prime farmland. **Figure 3** shows the location of prime farmland soils in relationship to the Project Site and the Generation Footprint.

Projects that impact prime farmland, in whole or part, and that are 2 MWAC or more in size are required to comply with Agrivoltaics Requirements set forth by the Connecticut Department of Agriculture (CT DOAG, 2023). This VSMP satisfies the following requirements:

“1. Soil disturbances and soil compaction shall be minimized, especially during construction and decommissioning, and a vegetation and soil management plan shall be developed for the lifetime of the solar project”.

The purpose of this VSMP is to aid in the overall goal of the Project to “not materially affect the status of such land as prime farmland”. Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. For these reasons, the recommendations and guidance provided in this document were developed with the following primary objectives:

1. Minimize disturbance to prime farmland soils within the Project Site during the construction, operation, and decommissioning phases of the Project;
2. Facilitate ground cover establishment for stormwater management;
3. Restore prime farmland soils to near original or better conditions upon decommissioning; and
4. Comply with all applicable federal, state, and local regulations.

When designed and executed correctly, agrivoltaics projects can contribute to short-term and long-term farm viability. The land is anticipated to remain in agricultural use over the lifespan of the Project by farming commercially saleable perennial plants, such as herbs, in the inter-row spacing (i.e. the rows between panel arrays). Areas that will not be farmed, such as the areas underneath the arrays, and between the arrays and the fence line, will be permanently stabilized with a seed mix containing perennial grasses that will also include some forbs that can provide support for pollinator species.

1.2 Related Plans

There are two related plans that have been developed in support of the Project that are designed to be used in conjunction with this VSMP. These plans include:

1. The Project's **Agrivoltaics Farm Plan** describes the proposed agricultural co-use in areas supporting prime farmland, specifically detailing the plan for growing commercially saleable perennial plants, such as herbs, in the Project's inter-row spacing.
2. The Project's **Soil Health Assessment** establishes baseline conditions for soil restoration upon decommissioning. Because the methodology for the Soil Health Assessment is described in this VSMP, the results of the assessment are provided in this report as **Appendix A**.

1.3 Existing Conditions & Planned Project Infrastructure

Establishment and maintenance considerations for agrivoltaics are informed by evaluating existing site conditions and comparing them against planned Project infrastructure and the Project's stated goals. This section provides an overview of the factors that were used to develop the recommendations in this VSMP.

1.3.1 Existing Conditions

1.3.1.1 Vegetation

The Subject Property supports wetlands, forests, and several agricultural fields. The Project Site and Generation Footprint are sited within the agricultural portion of the properties to avoid impacts to sensitive natural resources. Davison Environmental botanist Aubree Keurajian evaluated the vegetative cover types on the site on April 25th, 2025. The field evaluation was conducted at the start of the growing season. Therefore, not all plants present could be identified, but persistent species, woody species, early emergent, and remnant plant material were noted. Although the fields were not currently under cultivation, there were indications of previous year's crop activity.

The Project Site will comprise portions of three existing farm fields, as well as a small portion of a watercourse/wetland complex, where an existing culvert crossing provides access to the westernmost field (see **Figure 2**). Vegetation cover in these areas was as follows:

- Southern Field: Field supporting remnant signs of corn (*Zea mays*) cultivation. The field also supported introduced agricultural weed species. The dominant weed species were as follows: shepherd's purse (*Capsella bursa-pastoris*), wild garlic (*Allium vineale*), common chickweed (*Stellaria media*), purple deadnettle (*Lamium purpureum*), and grasses (Poaceae). The grasses were not able to be identified to species due to the timing of the survey. Additionally, there was a small population of mugwort (*Artemisia vulgaris*) identified near the existing access from Gager Hill Road.
- Northeastern Field: Field supporting remnant signs of corn cultivation, also supporting a soybean (*Glycine max*) cover crop and introduced agricultural weed species. The dominant weed species were: wild garlic, shepherd's purse, field penny-cress (*Thlapsi arvense*), henbit deadnettle (*Lamium amplexicaule*), purple deadnettle, mouse-eared thale-cress (*Arabidopsis thaliana*), common chickweed, and grasses. The grasses were not able to be identified to species due to the timing of the survey. Autumn olive

(*Elaeagnus umbellata*), an invasive species, is present along the northern edge of the field.

- **Western Field:** Field supporting remnant signs of corn cultivation, also supporting soybean cover crop and introduced agricultural weed species. The dominant weed species were: shepherd's purse, purslane speedwell (*Veronica peregrina*), field penny-cress, and grasses. The grasses were not able to be identified to species due to the timing of the survey. A population of mugwort was identified at the northeastern corner.
- **Culvert Crossing:** The watercourse/wetland between the northeastern and western fields, and over which the access road passes, is densely vegetated by invasive shrubs, notably multiflora rose (*Rosa multiflora*) and autumn olive.

Other introduced species found in lesser numbers throughout all fields included corn speedwell (*Veronica arvensis*), johnny jump-ups (*Viola tricolor*), dandelion (*Taraxacum officinale*), and spring whitlow-mustard (*Draba verna*). A very few native species were also encountered during survey, including horseweed (*Erigeron canadensis*), cursed crowfoot (*Ranunculus sceleratus*), and goldenrods (*Solidago* sp., likely *canadensis* or *gigantea*). Although not within the Project Site, populations of reed canary grass (*Phalaris arundinacea*) were observed in adjacent wetland areas. A photolog documenting the existing cover types within the Project Site is provided as **Appendix B**.

There are 10 soil map units present in the Subject Property. Soils were assessed by a licensed soil scientist at the time of the vegetation survey and were determined to be consistent with the NRCS mapped soil types within the Project Site. **Table 1** provides the soil map units within the Subject Property and their farmland classification. **Figure 3** shows the location of prime farmland soils in relation to the Project Site and the Generation Footprint, which comprise a substantially smaller area of prime farmland (24.6 acres, and 18.7 acres, respectively).

Table 1. Soil Map Units within the Subject Property.

Soil Map Unit	Farmland Classification	Acreage in Project Area	Percent of Project Area
Ridgebury fine sandy loam, 0 to 3 percent slopes	Farmland of statewide importance	7.1	7.60%
Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	Not prime farmland	15.5	16.80%
Sudbury sandy loam, 0 to 5 percent slopes	All areas are prime farmland	1.2	1.30%
Hinckley loamy sand, 3 to 15 percent slopes	Farmland of statewide importance	1.5	1.70%
Sutton fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	20.9	22.60%
Sutton fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	27.7	30.00%

Soil Map Unit	Farmland Classification	Acreage in Project Area	Percent of Project Area
Sutton fine sandy loam, 0 to 8 percent slopes, very stony	Farmland of statewide importance	2.0	2.20%
Canton and Charlton fine sandy loams, 3 to 8 percent slopes	All areas are prime farmland	12.8	13.90%
Rippowam fine sandy loam	Farmland of statewide impacts	2.4	2.60%
Ninigret fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	1.3	1.40%
Total		92.5	100.00%

1.4 Planned Project Infrastructure

The Project will consist of arrays of ground-mounted solar modules, metal racking systems and support piles, underground electric collection lines, inverters, transformers, pyranometers, stormwater controls, several utility poles, and an associated access road comprised of crushed stone. The Project is designed to have a lifespan of 21 years, with potential extensions. Details regarding design and equipment specifications can be found in the **Agrivoltaics Farm Plan**.

2. Site Preparation and Installation

This section provides guidelines for the successful installation, establishment, and maintenance of vegetation within the Project Site. It also describes the steps that are planned to be taken to manage impacts to prime farmland during construction of the Facility.

2.1 Prime Farmland Soil

2.1.1 Design

To preserve prime farmland soils, this Project will avoid unnecessary disturbance by limiting grading to only what is required to obtain the CT DEEP Stormwater General Permit. Specifically, grading will be confined to the access road, adjacent swales for stormwater conveyance, and proposed infiltration basins. These features are essential for managing runoff and protecting prime farmland within the Project Site.

Further, the project will comply with all federal, state, and local regulations regarding soil disturbance. Key compliance requirements will include the conditions set forth in the CT DEEP Stormwater Permit that will be obtained by the Project.

2.1.2 Construction Best Management Practices

The following best management practices (BMPs) can be used during construction to responsibly manage prime farmland soils. BMPs should be selected for the appropriate scenario, and used as needed:

1. Conduct a soil health assessment prior to construction (see **Appendix A** for the results of the Soil Health Assessment for this Project).
2. When possible, minimize construction activities when soil moisture content is at or near the soil's field capacity, which is defined as the amount of soil moisture or water content held in the soil after excess water has drained away and the rate of downward movement has decreased. Methods for estimated field capacity can be found in the USDA NRCS publication "Estimating Soil Moisture by Feel and Appearance".
3. Sequence construction so access roads are constructed prior to other grading activities.
4. Construction workers should use established access roads and laydown areas for equipment and vehicular traffic, unless installing equipment in the immediate area or as necessary to safely pass other equipment or vehicles.
5. When vehicles and heavy equipment can't be limited to access roads, one option to reduce soil compaction is to use low ground pressure equipment, such as tracked vehicles.

2.2 Vegetation

2.2.1 Design

As demonstrated in **Section 1.3.1**, the Project Site is located within agricultural fields. At present, no work is planned to be conducted within delineated inland wetlands or watercourses. It is possible that the culvert underneath the existing farm crossing between the northeastern and western fields may need to be replaced; however, Greenskies Clean Energy is still in the process of determining if this action will be necessary. If culvert replacement is required, all appropriate permits will be obtained and all conditions will be followed. Excepting the culvert crossing, the Project maintains a 50-foot buffer between delineated features and the Project Site. Proposed infrastructure (fences, arrays, etc.) are sited at least 100-feet from delineated features, and where practicable, the Project plans to maintain a 100-foot buffer between delineated features and the Project Site.

Per the Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Database (NDDDB) Program Determination No. 202408741, there are no extant populations of Federal or State Endangered, Threatened, or Special Concern species known to occur within the Project Area. Additionally, tree clearing is not anticipated as a part of construction. Therefore, there are no time of year restrictions (TOYR) to consider for this Project.

Because agricultural operations within the Project are anticipated to convert from a corn/soy rotation to commercially saleable perennial crops, existing vegetation within the agricultural fields will not be preserved during construction. Clearing and removal of vegetation should only occur within the Project Site (defined as the construction limits of disturbance) and only as necessary. If needed, vegetation will be legally disposed of following all federal, state, and local guidelines.

2.2.2 Planned Vegetation

Refer to the **Agricultural Farm Plan** for a discussion of the planned temporary and permanent seed mixes, and an overview of the overall planting strategy and construction sequence.

2.2.3 Sequence of Events for Site Preparation and Installation

During construction and subsequent maintenance activities, temporary stabilization (e.g., seeding and mulching) should be implemented to minimize soil erosion. BMPs focused on temporary seeding can be found in Chapter 5 of the *Connecticut Guidelines for Soil Erosion and Sediment Control*. Temporary seeding should occur in disturbed areas where the suspension of work is expected to be more than 30 days but less than a year.

The timing of site preparation and installation is dependent on construction schedule. The permanent seed mix, which would be installed in all disturbed areas that are not planned to be farmed (primarily the areas directly underneath the arrays), can be installed during the normal seeding dates in Connecticut, which are March 15 through June 30, and August 15 through October 31. The ideal planting time is in late summer-early fall before the first frost so that the seed mix can experience natural cold stratification over the winter.

The areas that are slated to support crops should receive a rotation of temporary seed mixes, installed and maintained as necessary, until the Project reaches its Commercial Operation Date (COD), at which time the farmer should gain access to the Generation Footprint. The farmer would install desired crops once they have prepared the planting areas and the appropriate planting season is reached.

2.2.4 Site Preparation Methods

Upon completion of construction activities, existing vegetation should be assessed. Weed control is critical to the successful establishment of the permanent seed mix, as it can easily be outcompeted by undesirable vegetation.

Soil samples may be taken to aid the selection of potential soil amendments, particularly in regard to establishing the proposed cash crops. Samples can be analyzed for a suite of characteristics, such as pH, organic content, and macronutrient content (nitrogen, phosphorous, and potassium).

If vegetation can be installed without soil amendments, then it is preferable not to install amendments. If amendments need to be applied, follow the guidance provided in Chapter 5 of the *Connecticut Guidelines for Soil Erosion & Sediment Control*.

Any existing vegetation should be roughly mowed to just above ground surface to allow for overseeding. Existing vegetation will shade out new seedlings, so it is important to mow as close to the surface as feasible without removing the root crown. In areas exhibiting bare soil, the seedbed should be roughened prior to installation to provide good seed-to-soil contact.

The installation of the permanent seed mix should follow the guidance provided in Chapter 5 of the *Connecticut Guidelines for Soil Erosion & Sediment Control*. Because the permanent seed mix will be placed primarily in the areas underneath arrays, it is most likely that these areas will be broadcast seeded, however, other methods may be used if feasible. The permanent seed mix should be applied according to seed supplier recommendations, including selection of the type of cover crop that should be installed alongside the permanent mix. Seeding rates should be adapted according to the chosen seeding method and the time of year. If broadcast seeding, a roller or light raking should be used to ensure the seed has good contact with the soil. A certified weed-free straw mulch should be applied to help the soil retain moisture, to hold the seed in place, and to protect seed from predation. Once seeded, spot treatment of weeds should be completed using manual removal methods.

3. Maintenance Methods

3.1 Prime Farmland Soil

Establishing and maintaining healthy soil is a gradual and ongoing process that is not a one-size-fits-all. Factors that affect the ability to build soil health include the baseline condition of the soil (see **Appendix A**) and the specific farming practices that will continue during the operation of the Facility. At a minimum, soil health should be assessed via visual inspections, which focus on the above-ground signs of soil stress. Visual inspections could evaluate the health of on-site vegetation; identify evidence of erosion and compaction (if present); and observe signs of ponding (if present).

Soil samples can also be evaluated subjectively from time to time over the life of the Project, using the following indicators of topsoil quality:

- **Soil color:** Color can be indicative of minerology and organic matter content. Generally, a change to a darker color implies an increase in organic matter content. A soil color chart (based on the Munsell color system) can be used for evaluating soil color.
- **Soil structure:** Soil structure affects water movement through the soil, along with gas exchange, nutrient cycling, plant rooting, and organism habitat. Soil structure, shape and grade can be observed for massive or platy textures due to compaction.
- **Soil residue cover:** This is the percentage of soil surface covered with dead plant material, organic mulch, or live plants.
- **Residue breakdown:** Existing residue cover can be examined for signs of decomposition, shredding, and incorporation by soil organisms. (Note: this should not be assessed soon after mechanical tillage.)
- **Surface crusting:** Surface crusts form on uncovered soil with poor aggregate stability. The presence of surface crusts after rain or irrigation events (and not directly after tillage) should be noted. Crusting may be due to a build-up of salt in the soil, indicating the possible need for additional investigation.
- **Ponding/infiltration:** Surface ponding that occurs after a normal rain or irrigation event may be due to natural conditions (such as slowly permeable soil layers/textures), or from a soil health concern (compaction).
- **Penetration resistance:** Penetration resistance can be measured when soil moisture is at field moisture capacity (the maximum volume of water that is held by the soil after a rainfall or irrigation event, at the conclusion of free drainage by gravity). Field capacity moisture content differs depending on soil texture. To perform simplified field estimations of soil moisture conditions, refer to the USDA NRCS publication “Estimating Soil Moisture by Feel and Appearance.”
- **Water-stable aggregates:** There are three common methods to test water-stable aggregates: the strainer method, the SQTG method, and the cylinder method.
- **Plant roots:** Plant roots exude organic compounds that result in the formation of soil structure. Roots within the top 6 or 12 inches of the soil should be abundant and healthy. There should be no sideways root growth due to restrictive layers, or lack of root hairs due to oxygen deprivation.

- Biological diversity: Soil organisms influence aggregation, water dynamics, and nutrient cycling. Note the presence of different soil organisms such as fungal hyphae, legume nodules, earthworms, and insects.
- Biopores: A larger sample of soil (e.g., from a shovel instead of a probe) for small holes left from plant roots and organisms should be assessed.

If periodic inspections identify potential deficiencies, further soil testing may be needed to diagnose the specific issue. In instances where soils or vegetation appear stressed, adaptive management measures/restoration practices may need to be implemented. Verdantas recommends addressing deficiencies as soon as they are identified to allow ample time for soil health to build prior to decommissioning.

3.2 Vegetation

3.2.1 Short-Term Maintenance Practices

3.2.1.1 Inspection and Maintenance of Vegetation

Newly seeded areas should be inspected periodically to ensure appropriate establishment. Per the *Connecticut Guidelines for Soil Erosion & Sediment Control*, seeded areas should be inspected at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater during the first growing season. Areas that exhibit poor germination should be assessed to determine the cause of the issue. Additional remediation practices, such as further soil amendments or greater decompaction, may be necessary.

3.2.1.2 Invasive Weed Control, Monitoring, and Management

The site is most vulnerable to colonization of invasive vegetation and noxious weeds immediately post-construction, while the permanent seed mixes are establishing. The Connecticut Invasive Plants Council maintains a list of Invasive and Potentially Invasive Plants in accordance with Connecticut General Statutes §22a-381a through §22a-381d. This list can be referenced to determine whether existing vegetation on the site is categorized as invasive. Mugwort, autumn olive, multiflora rose, and reed canary grass have been identified within the Project Site or immediately adjacent to the Project Site and are the most likely invasive species to be encountered. These species should be controlled using methods deemed appropriate for maintenance of the solar array and soil integrity, such as manual removal.

3.2.2 Long-Term Maintenance Practices

The primary objectives of long-term vegetation maintenance on-site are to maintain appropriate ground cover that prevents soil erosion, enables farming within the inter-row spacing, reduces fire risk, and does not interfere with the operation of the solar energy facility.

The areas that are not actively farmed may require periodic mowing or weed whipping. These practices should occur as needed based on how quickly vegetation reaches a height that could conflict with Project infrastructure. When mowing or weed whipping does occur, vegetation should be shorn high, preferably no lower than 6 inches.

Fire risk in relation to vegetation is generally driven by the excessive build up of thatch. Excessive thatch can also impede the movement of water, nutrients, and air into the soil while creating

perfect conditions for fungal and bacterial diseases. If during the life of the project excessive thatch is identified, mechanical dethatchers can be used for removal. Manual methods, such as raking or using a specialized dethatching rake, can also be utilized.

If areas of poor establishment are identified during the operational life of the project, they should be assessed to determine the cause of the issue. Additional remedial measures, such as further soil amendments, decompaction, and reseeding, may be necessary.

Invasive species should continue to be managed as they are encountered. The exact method and timing of treatment is determined based on the species identity and the size of the population identified.

Farming practices are planned to continue for the operational life of the project in the inter-row spacing. The cash crops growing in these areas, and their methods of maintenance, are subject to change based on the specific species being grown.

4. Decommissioning

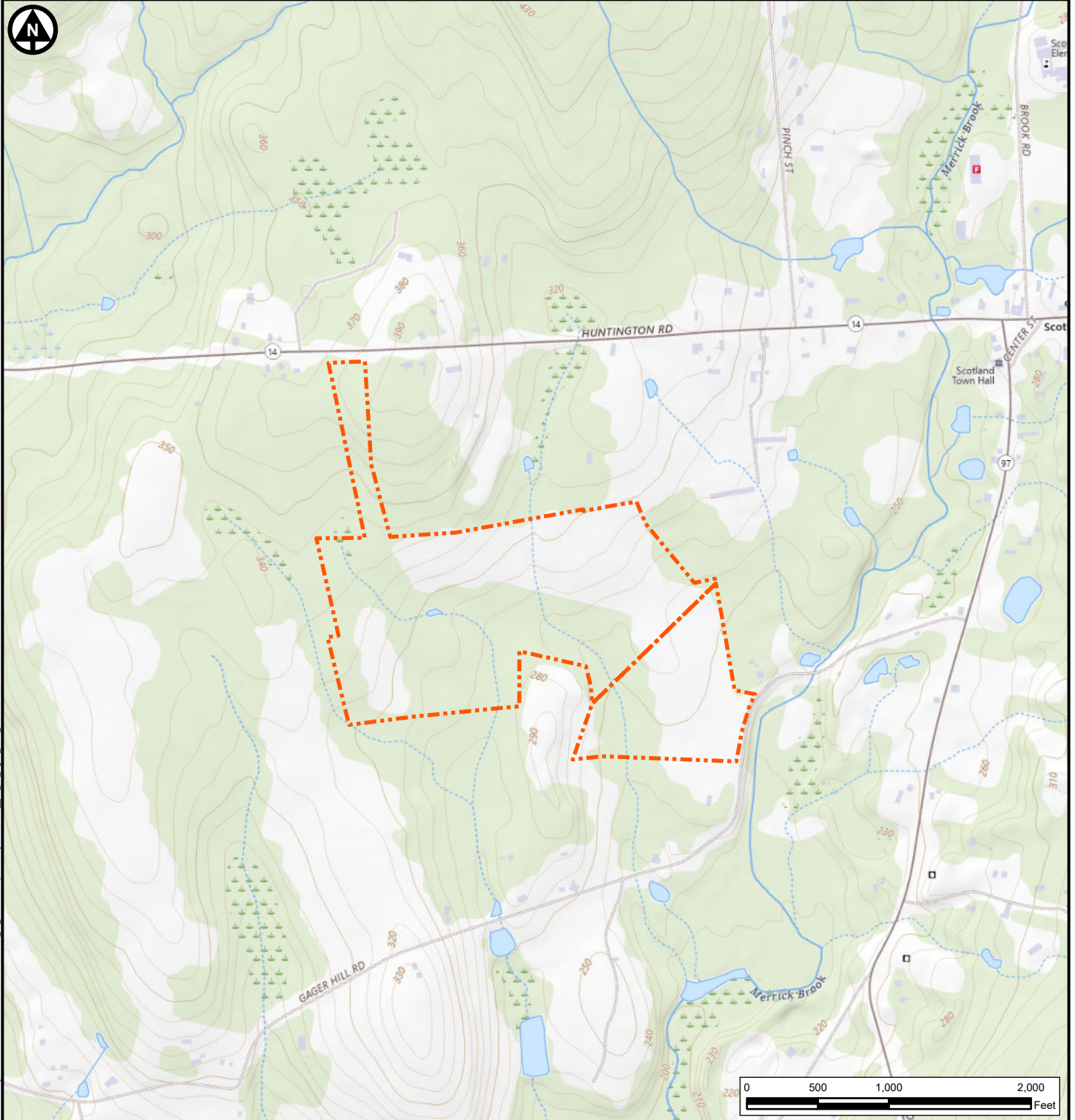
4.1 Prime Farmland Soils

One of the requirements of the Connecticut Department of Agriculture Agrivoltaics Requirements is that soil should be restored upon decommissioning. The results of the **Soil Health Assessment (Appendix A)** established pre-construction baseline conditions. Construction BMPs detailed in Section 2.1.2 are applicable to decommissioning and should be followed. Temporary stockpiles may be required as part of the decommissioning process and should follow the guidelines provided in Section 2.1.2. Operational stockpiles, which were placed during the initial construction phase, should be replaced during decommissioning activities.

The removal of solar racking systems and perimeter fencing may leave areas that require backfilling. Operational stockpiles should be respread and decompacted. Seeding, mulching, and erosion control practices should follow the *Connecticut Guidelines for Soil Erosion and Sediment Control*.

Upon completion of decommissioning, soil samples should be taken and tested following the same methods and parameters as used in the baseline **Soil Health Assessment (Appendix A)**. This will allow for a direct comparison between soil conditions prior to construction and post-decommissioning. If deficiencies are identified, possible remedies may include:

- If plant-available nutrients are below baseline conditions, further testing may be required to confirm consistently lower values rather than seasonal fluctuations. If values remain below baseline or are insufficient for plant growth, fertilizer application may be necessary.
- If the organic matter is below baseline levels, incorporating compost, mulch, or cover crops can enhance moisture retention, increase nutrient availability, improve soil fertility, and stimulate microbial activity.
- If tests indicate pH is lower than the baseline, lime can be used to adjust and regulate pH conditions.
- Subsoiling or disking may be required during decommissioning. Bulk density results may be assessed alongside soil health data to determine if high values are affecting plant growth (e.g., horizontal root development, surface crust formation).



 Subject Property

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127 Washington Ave
North Haven, CT 06473

Site Location Map

Scotland Solar Facility
Greenskies Clean Energy

Project Number
24412

Date
04/2025

Author
bsanchez

Scale
1 in = 1,000 ft

Figure
1



Sources:
Aerial Imagery: Esri Imagery Web Service dated 2023.

Topographic Map: National Geographic Society Web Service.

Quadrangle: Scotland, Connecticut published 1959



- Subject Property
- Generation Footprint
- Project Site

Note: The aerial photo was acquired through the Esri Imagery Web Service. Aerial photography dated 2023.

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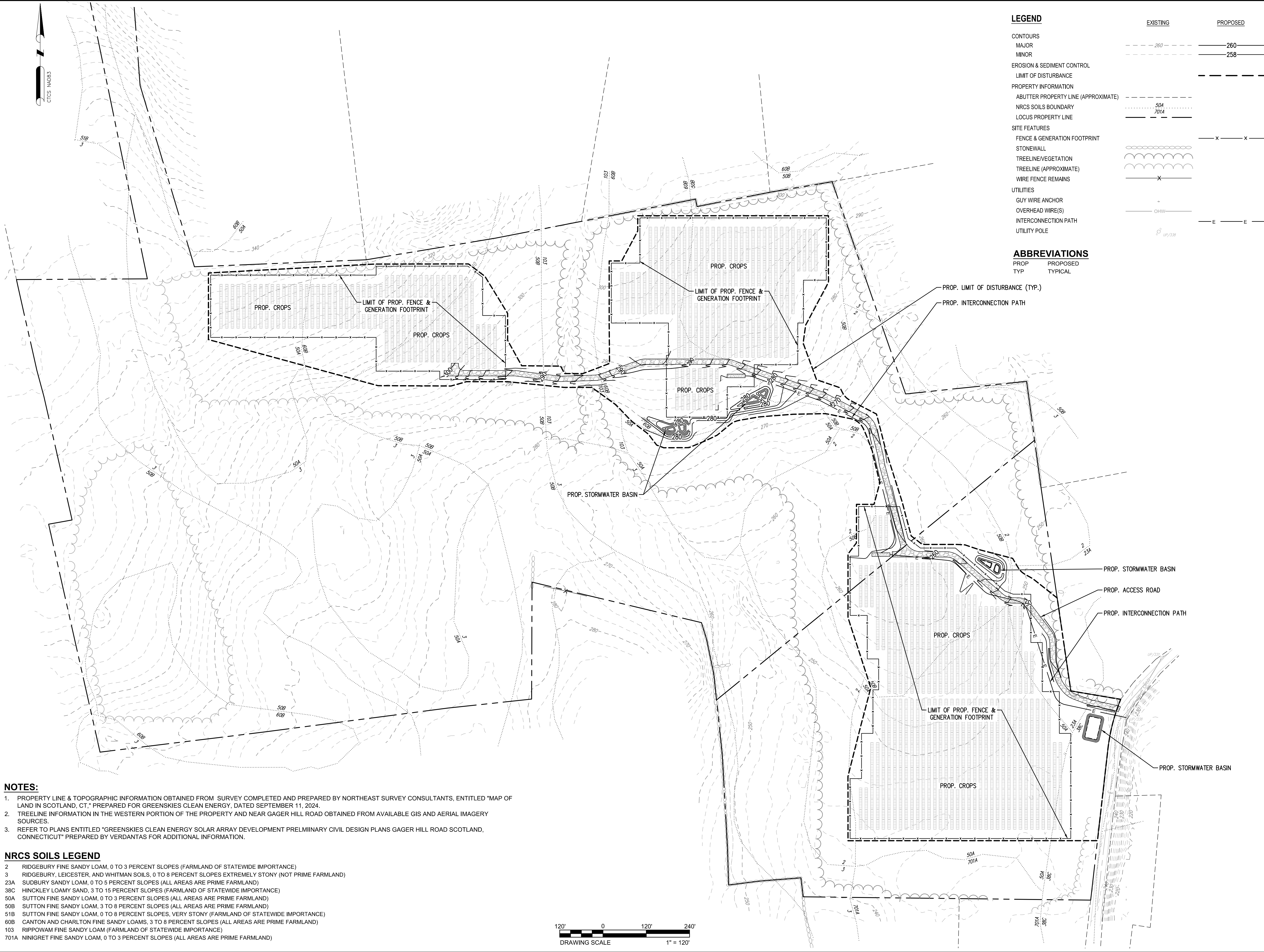
127 Washington Ave
North Haven, CT 06473

Site Overview Map

Scotland Solar Facility
Greenskies Clean Energy

Project Number	24412
Date	04/2025
Author	bsanchez
Scale	1 in = 500 ft
Figure	2

z:\project\files\gag\h\greenskies\124412 - connecticut solar design and permitting\cad\exhibits\scotland\24412_greenskies_scotland_site plan.dwg 4/16/2025 4:18 PM



verdantas

SCOTLAND-WINDHAM COUNTY-CONNECTICUT
GAGER HILL ROAD

**PROPOSED SITE PLAN
EXHIBIT**

AGRIVOLTAICS FARM PLAN
GAGER HILL ROAD

Project Number
24412
Date
04/16/2025
Author
JMB
Scale
1"=120'
Figure

1

Appendix A

Soil Health Assessment

Memo

Date	June 2, 2025
Subject	Gager Hill Solar Project - Soil Health Assessment
Project Number	24412

1. Introduction

Greenskies is developing an up to 4.625 MWAC solar electric generation facility, the Gager Hill Solar Project, in the Town of Scotland, Windham County, Connecticut (the “Project”, or the “Facility. In total, the Subject Property comprises 92.5 acres. The total proposed development area comprises 25.9 acres of the Subject Property (the “Project Site”). The Generation Footprint (the fenced in areas supporting infrastructure) will comprise 19 acres.

The Project Site and Generation Footprint are sited within the agricultural portion of the properties to avoid impacts to sensitive natural resources. The Project Site will contain 24.6 acres of prime farmland, and the Generation Footprint will contain 18.7 acres of prime farmland.

Projects that impact prime farmland, in whole or part, and that are 2 MWAC or more in size are required to comply with Agrivoltaics Requirements set forth by the Connecticut Department of Agriculture (DoAg). To assist with DoAg’s determination that the Project will “...not materially affect the status of such land as prime farmland...”, this Soil Health Assessment was performed to establish baseline conditions for soil restoration upon decommissioning.

2. Methods

A licensed soil scientist from Davison Environmental evaluated the soil types and conditions on the site on April 25th, 2025. The field evaluation included a topsoil delineation to verify Natural Resources Conservation Service (NRCS) mapped soils within the Project Area. Soils were delineated where they changed in surface texture, color, estimated organic matter content, or depth.

Additionally, soil samples were taken at a rate of approximately one sampling location every 5 acres of the Project Site. The soil scientist used their best professional judgement to take additional samples, as needed, that reflected changes in landform and other factors that would influence soil properties. At each sampling location, the soil scientist determined the soil profile to a depth of 36 inches, or until a restrictive layer was reached. Within each identified horizon, the soil texture and color were determined and recorded. Photographs of each sampling location were captured. The soil samples were submitted to the University of Connecticut Soil Nutrient Analysis Laboratory (UCONN SNAL) for analysis of major and minor plant nutrients, lead, and pH.

3. Results

The topsoil delineated determined that the NRCS mapped soils within the Project Site were accurate and required no changes. **Attachment 1** provides a map showing the locations of each soil series within the Project Site. Table 1 describes the soil map units observed within the Project Site.

Table 1. Soil Map Units within the Project Site

Soil Map Unit	Farmland Classification	Acreage in Project Area	Percent of Project Area
Ridgebury fine sandy loam, 0 to 3 percent slopes	Farmland of statewide importance	0.1	0.6%
Sudbury sandy loam, 0 to 5 percent slopes	All areas are prime farmland	1.1	4.2%
Hinckley loamy sand, 3 to 15 percent slopes	Farmland of statewide importance	1.0	4.0%
Sutton fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland	8.1	31.2%
Sutton fine sandy loam, 3 to 8 percent slopes	All areas are prime farmland	9.5	36.5%
Canton and Charlton fine sandy loams, 3 to 8 percent slopes	All areas are prime farmland	5.9	22.8%
Rippowam fine sandy loam	Farmland of statewide importance	0.2	0.7%
Total		25.9	100.0%

Five soil samples were taken within the Project Site. The locations of the samples are provided in **Attachment 2. Table 2** provides the soil sample profiles from each sampling location. Photographs of the sampling locations are provided as **Attachment 3**. The results of the soil analyses are provided in **Attachment 4**.

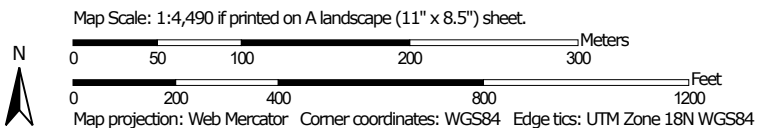
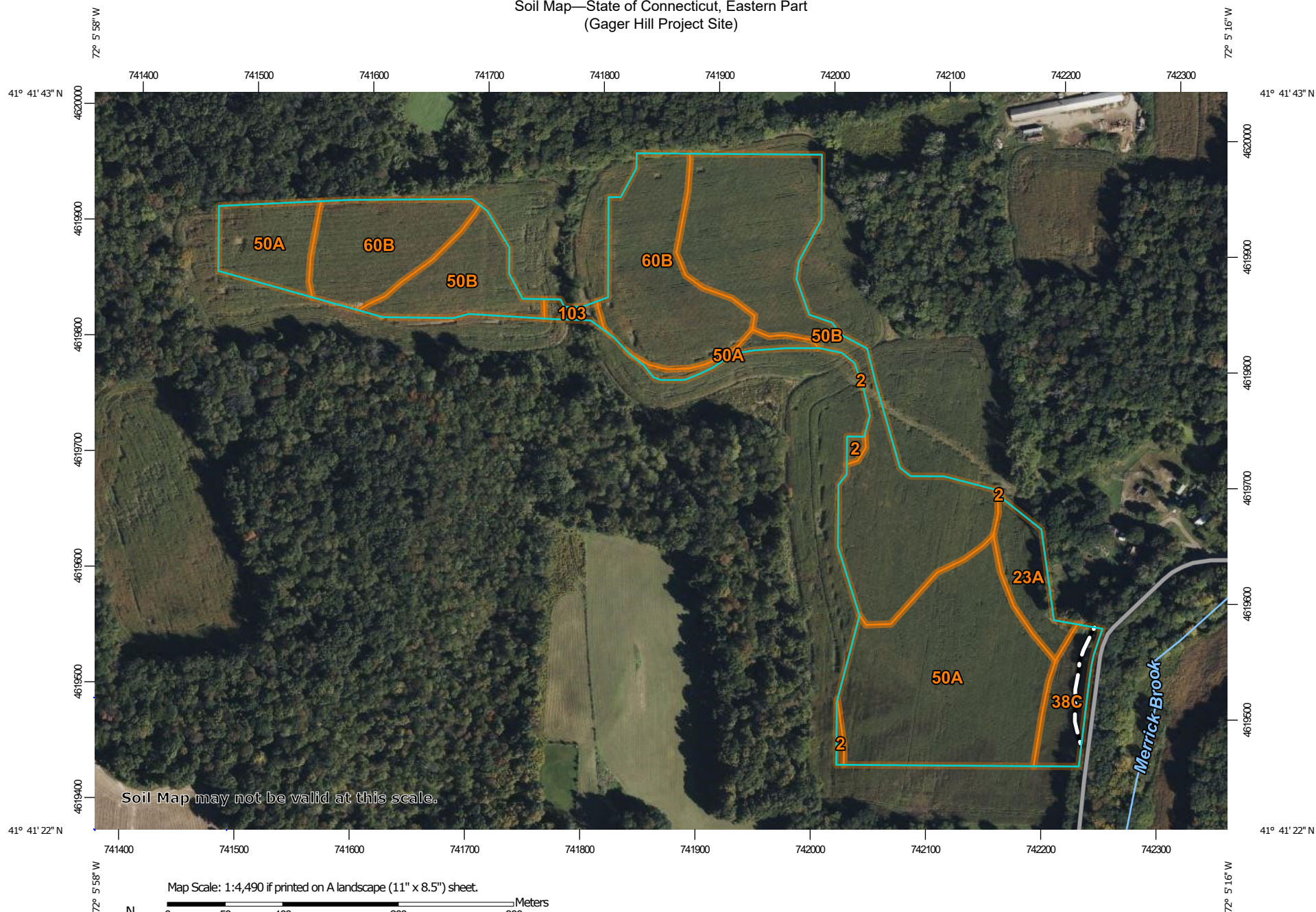
Table 2. Soil Sample Profiles

Soil Sample #1				
Depth (in)	Horizon	Matrix Color	Redox	Description
0-6	A	10YR 2/2		Sandy loam
6-26	B	10YR 4/6		Sandy loam, 5-10% gravel
26-34	C	2.5Y 5/2		Sandy loam, 10-25% gravel
34+	Cd			Densic layer, unable to penetrate
Soil Sample #2				
Depth (in)	Horizon	Matrix Color	Redox	Description
0-7	A	10YR 3/3		Sandy loam
7-14	Bw1	10YR 4/4		Sandy loam, 5-10% gravel
14-26	Bw2	2.5YR 4/3		Sandy loam, 10-20% gravel
26-34	C	2.5YR 5/4	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-25% gravel
34+	Cd			Densic layer, unable to penetrate
Soil Sample #3				
Depth (in)	Horizon	Matrix Color	Redox	Description
0-6	A	10YR 2/2		Sandy loam
6-24	Bw1	10YR 5/6		Sandy loam, 5-10% gravel
24-30	Bw2	10YR 5/4	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-20% gravel
30-36	C	10YR 5/3	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-25% gravel

36+	Cd			Densic layer, unable to penetrate
Soil Sample #4				
Depth (in)	Horizon	Matrix Color	Redox	Description
0-6	A	10YR 2/2		Sandy loam
6-24	Bw1	10YR 5/6		Sandy loam, 5-10% gravel
24-30	Bw2	10YR 5/4	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-20% gravel
30-36	C	10YR 5/3	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-25% gravel
36+	Cd			Densic layer, unable to penetrate
Soil Sample #5				
Depth (in)	Horizon	Matrix Color	Redox	Description
0-6	A	10YR 2/2		Sandy loam
10-16	Bw1	10YR 4/4		Sandy loam, 5-10% gravel
16-24	Bw2	2.5YR 4/4	Some faint concentrations 7.5YR 5/6	Sandy loam, 10-20% gravel
24-36	C	2.5YR 5/4		Sandy loam, 10-25% gravel
36+	Cd			Densic layer, unable to penetrate

Attachment 1: NRCS WSS Mapping

Soil Map—State of Connecticut, Eastern Part
(Gager Hill Project Site)



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

5/15/2025
Page 1 of 3

Soil Map—State of Connecticut, Eastern Part
(Gager Hill Project Site)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part

Survey Area Data: Version 2, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

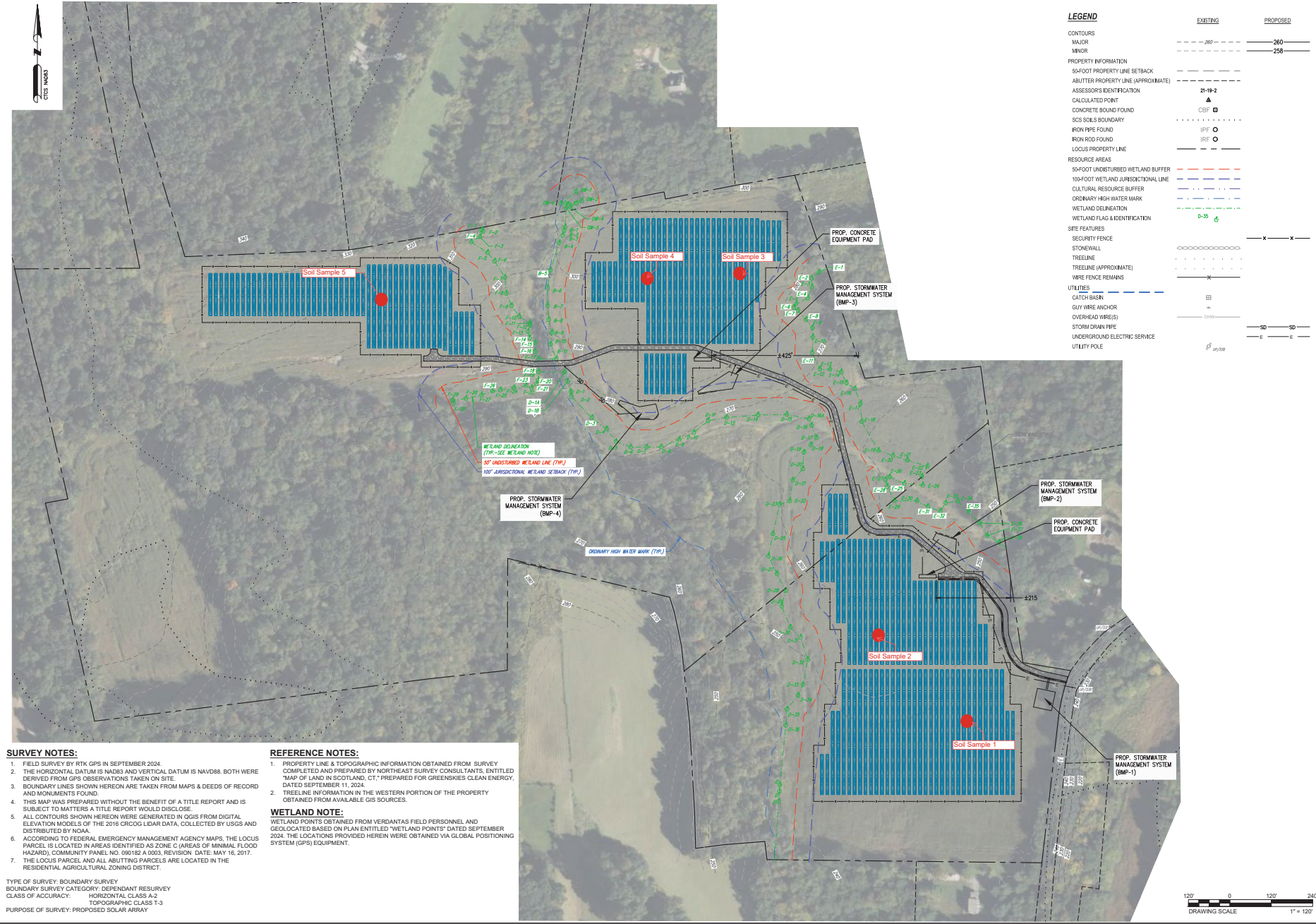
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	0.1	0.6%
23A	Sudbury sandy loam, 0 to 5 percent slopes	1.1	4.2%
38C	Hinckley loamy sand, 3 to 15 percent slopes	1.0	4.0%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	8.1	31.2%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	9.5	36.5%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	5.9	22.8%
103	Rippowam fine sandy loam	0.2	0.7%
Totals for Area of Interest		25.9	100.0%

Attachment 2: Soil Sample Locations Map

z:\project_files\greengrass\scotland\24112 - connecticut solar design and permitting\scotland\24112_greenwade_schematic_layout_plan_2025-04-01.dwg 4/10/2025 10:07 AM



SURVEY NOTES:

1. FIELD SURVEY BY RTK GPS IN SEPTEMBER 2024.
2. THE HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD83. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.
3. BOUNDARY LINES SHOWN HEREON ARE TAKEN FROM MAPS & DEEDS OF RECORD AND MONUMENTS FOUND.
4. THIS MAP WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO MATTERS A TITLE REPORT WOULD DISCLOSE.
5. ALL CONTOURS SHOWN HEREON WERE GENERATED IN QGIS FROM DIGITAL ELEVATION MODELS OF THE 2016 CROG LIDAR DATA, COLLECTED BY USGS AND DISTRIBUTED BY NOAA.
6. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE LOCUS PARCEL IS LOCATED IN AREAS IDENTIFIED AS ZONE C (AREAS OF MINIMAL FLOOD HAZARD), COMMUNITY PANEL NO. 090182 A 0003, REVISION DATE, MAY 16, 2017.
7. THE LOCUS PARCEL AND ALL ABUTTING PARCELS ARE LOCATED IN THE RESIDENTIAL AGRICULTURAL ZONING DISTRICT.

REFERENCE NOTES:

1. PROPERTY LINE & TOPOGRAPHIC INFORMATION OBTAINED FROM SURVEY COMPLETED AND PREPARED BY NORTHEAST SURVEY CONSULTANTS, ENTITLED "MAP OF LAND IN SCOTLAND, CT," PREPARED FOR GREENSKIES CLEAN ENERGY, DATED SEPTEMBER 11, 2024.
2. TREELINE INFORMATION IN THE WESTERN PORTION OF THE PROPERTY OBTAINED FROM AVAILABLE GIS SOURCES.

WETLAND NOTE:
WETLAND POINTS OBTAINED FROM VERDANTAS FIELD PERSONNEL AND GEOLOCATED BASED ON PLAN ENTITLED "WETLAND POINTS" DATED SEPTEMBER 2024. THE LOCATIONS PROVIDED HEREIN WERE OBTAINED VIA GLOBAL POSITIONING SYSTEM (GPS) EQUIPMENT.

TYPE OF SURVEY: BOUNDARY SURVEY
BOUNDARY SURVEY CATEGORY: DEPENDANT RESURVEY
CLASS OF ACCURACY: HORIZONTAL CLASS A-2
TOPOGRAPHIC CLASS T-3
PURPOSE OF SURVEY: PROPOSED SOLAR ARRAY

LEGEND	
CONTOURS	EXISTING PROPOSED
MAJOR	---
MINOR	---
PROPERTY INFORMATION	
95-FOOT PROPERTY LINE SETBACK	---
ABUTTER PROPERTY LINE (APPROXIMATE)	---
ASSESSORS IDENTIFICATION	21-19-2
CALCULATED POINT	▲
CONCRETE BOUND FOUND	CBF □
SCS SOILS BOUNDARY	---
IRON PIPE FOUND	IPF ○
IRON ROD FOUND	IRF ○
LOCUS PROPERTY LINE	---
RESOURCE AREAS	
95-FOOT UNDISTURBED WETLAND BUFFER	---
100-FOOT WETLAND JURISDICTIONAL LINE	---
CULTURAL RESOURCE BUFFER	---
ORDINARY HIGH WATER MARK	---
WETLAND DELINEATION	---
WETLAND FLAG & IDENTIFICATION	---
SITE FEATURES	
SECURITY FENCE	---
STONEWALL	---
TREELINE (APPROXIMATE)	---
WIRE FENCE REMAINS	---
UTILITIES	
CATCH BASIN	---
GUY WIRE ANCHOR	---
OVERHEAD WIRES	---
STORM DRAIN PIPE	---
UNDERGROUND ELECTRIC SERVICE	---
UTILITY POLE	---

verdantas

100 MAIN STREET, SUITE NO. 8120
PAWTUCKET, RI 02860

PROFESSIONAL ENGINEER NO. XXXX
P.E. JMM

DESIGNED BY
DATE

DRAWN BY
DATE

CHECKED BY
DATE

PROJECT NO.
24112

NOT FOR
CONSTRUCTION

SCOTLAND-WINDHAM COUNTY-CONNECTICUT
SCHEMATIC DESIGN LAYOUT
SOLAR ARRAY DEVELOPMENT
GREENSKIES CLEAN ENERGY
19419 GAGER HILL ROAD

APPLICATION NO.
DATE
APRIL 2025
SCALE
1"=120'
SHEET
SK-1

Attachment 3: Site Photographs



Photo 1: Location of soil sample #1 looking north.



Photo 2: Location of soil sample #2 looking north.



Photo 3: Location of soil sample #3 looking south.



Photo 4: Location of soil sample #4 looking east.



Photo 5: Location of soil sample #5 looking east.

Attachment 4: Soil Analysis Results



UConn Soil Nutrient Analysis Laboratory

6 Sherman Place, Union Cottage, Unit 5102
Storrs, CT 06269-5102
860-486-4274
soiltesting.cahnr.uconn.edu

UConn
COLLEGE OF AGRICULTURE,
HEALTH AND NATURAL
RESOURCES
EXTENSION & PLANT SCIENCE
AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 24489

Prepared For:

Eric Davison
Davison Environmental LLC
10 Maple Street
Chester, CT 06412

eric@davisonenvironmental.com
860.803.0938

Sample Information:

Sample Name: Sample 1
Lab Number: 4728
Area Sampled:
Received: 5/9/2025
Reported: 5/29/2025

Results

Nutrients Extracted From Your Soil (Modified Morgan)

	Below Optimum	Optimum	Above Optimum	Excessive*
Calcium > 4000 lbs/acre				
Magnesium 314 lbs/acre				
Phosphorus 1200 lbs/acre				
Potassium 221 lbs/acre				

* Excessive only defined for Phosphorus (>40 lbs/acre)

Soil pH (1:1, H ₂ O)	6.8	<u>Element</u>	<u>ppm</u>	<u>Soil Range in CT</u>
Est. Cation Exch. Capacity (meq/100g soil)	33.3	Boron (B)	0.5	0.1 - 2.0
		Copper (Cu)	0.2	0.3 - 0.8
Buffered pH (Mod. Mehlich)	6.4	Iron (Fe)	0.9	1.0 - 40.0
		Manganese (Mn)	8.2	3.0 - 20.0
		Zinc (Zn)	6.4	0.1 - 70.0
<u>Base Saturation</u>	<u>%</u>	<u>Suggested</u>		
Potassium	1	2.0 - 7.0		
Magnesium	4	10 - 30		
Calcium	90	40 - 50		
		Sulfur (S)	114.3	10 - 100
		Aluminum (Al)	5.8	10 - 300
		Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Basil

Limestone (Target pH of 6.6)	Nitrogen, N	Phosphorus, P ₂ O ₅	Potassium, K ₂ O
0 lbs / acre	115 - 130 lbs / acre	0 lbs / acre	50 lbs / acre

Comments:**LIMESTONE:**

No limestone is necessary

Although adequate fertility is required, excess nitrogen applications can cause post-harvest discoloration and reduced flavor. Basil benefits from a sidedress application of nitrogen after the first or second cutting.

Soil test values for phosphorus are above optimum. Do not add additional phosphorus at this time

For questions contact: Shuresh Ghimire, Ph.D., Extension Vegetable Educator. Phone: (860) 870-6933 Email:

shuresh.ghimire@uconn.edu

Consult the New England Vegetable Management Guide for more information regarding timing and placement of amendments.

References (Crop Related):

Soil Test Interpretation and Recommendations

<https://soiltesting.cahnr.uconn.edu/wp-content/uploads/sites/3514/2022/06/Standard-Nutrient-Analysis.pdf>

New England Vegetable Management Guide

<https://nevegetable.org/cultural-practices>



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EXTENSION & PLANT SCIENCE
AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 24489

Prepared For:

Eric Davison
Davison Environmental LLC
10 Maple Street
Chester, CT 06412

eric@davisonenvironmental.com
860.803.0938

Sample Information:

Sample Name: Sample 2
Lab Number: 4729
Area Sampled:
Received: 5/9/2025
Reported: 5/29/2025

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	> 4000 lbs/acre				
Magnesium	345 lbs/acre				
Phosphorus	1100 lbs/acre				
Potassium	304 lbs/acre				

* Excessive only defined for Phosphorus (>40 lbs/acre)

Soil pH (1:1, H ₂ O)	6.9	<u>Element</u>	<u>ppm</u>	<u>Soil Range in CT</u>
Est. Cation Exch. Capacity (meq/100g soil)	33.7	Boron (B)	0.6	0.1 - 2.0
		Copper (Cu)	0.2	0.3 - 0.8
Buffered pH (Mod. Mehlich)	6.4	Iron (Fe)	0.9	1.0 - 40.0
		Manganese (Mn)	9.7	3.0 - 20.0
		Zinc (Zn)	6.4	0.1 - 70.0
<u>Base Saturation</u>	<u>%</u>	<u>Suggested</u>		
Potassium	1	2.0 - 7.0		
Magnesium	4	10 - 30		
Calcium	91	40 - 50		
		Sulfur (S)	118.0	10 - 100
		Aluminum (Al)	6.0	10 - 300
		Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Basil

Limestone (Target pH of 6.6)	Nitrogen, N	Phosphorus, P ₂ O ₅	Potassium, K ₂ O
0 lbs / acre	115 - 130 lbs / acre	0 lbs / acre	25 lbs / acre

Comments:**LIMESTONE:**

No limestone is necessary

Although adequate fertility is required, excess nitrogen applications can cause post-harvest discoloration and reduced flavor. Basil benefits from a sidedress application of nitrogen after the first or second cutting.

Soil test values for phosphorus are above optimum. Do not add additional phosphorus at this time

For questions contact: Shuresh Ghimire, Ph.D., Extension Vegetable Educator. Phone: (860) 870-6933 Email:

shuresh.ghimire@uconn.edu

Consult the New England Vegetable Management Guide for more information regarding timing and placement of amendments.

References (Crop Related):

Soil Test Interpretation and Recommendations

<https://soiltesting.cahnr.uconn.edu/wp-content/uploads/sites/3514/2022/06/Standard-Nutrient-Analysis.pdf>

New England Vegetable Management Guide

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COLLEGE OF AGRICULTURE,
HEALTH AND NATURAL
RESOURCES
EXTENSION & PLANT SCIENCE
AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 24489

Prepared For:

Eric Davison
Davison Environmental LLC
10 Maple Street
Chester, CT 06412

eric@davisonenvironmental.com
860.803.0938

Sample Information:

Sample Name: Sample 3
Lab Number: 4730
Area Sampled:
Received: 5/9/2025
Reported: 5/29/2025

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	> 4000 lbs/acre				
Magnesium	229 lbs/acre				
Phosphorus	1000 lbs/acre				
Potassium	241 lbs/acre				

* Excessive only defined for Phosphorus (>40 lbs/acre)

Soil pH (1:1, H ₂ O)	6.8	<u>Element</u>	<u>ppm</u>	<u>Soil Range in CT</u>
Est. Cation Exch. Capacity (meq/100g soil)	29.2	Boron (B)	0.4	0.1 - 2.0
		Copper (Cu)	0.2	0.3 - 0.8
Buffered pH (Mod. Mehlich)	6.4	Iron (Fe)	0.8	1.0 - 40.0
		Manganese (Mn)	8.4	3.0 - 20.0
		Zinc (Zn)	5.3	0.1 - 70.0
<u>Base Saturation</u>	<u>%</u>	<u>Suggested</u>	Sulfur (S)	102.1
Potassium	1	2.0 - 7.0	Aluminum (Al)	6.5
Magnesium	3	10 - 30		
Calcium	91	40 - 50	Est. Total Lead (Pb)	low

Limestone & Fertilizer Recommendations for Basil

Limestone (Target pH of 6.6)	Nitrogen, N	Phosphorus, P ₂ O ₅	Potassium, K ₂ O
0 lbs / acre	115 - 130 lbs / acre	0 lbs / acre	50 lbs / acre

Comments:**LIMESTONE:**

No limestone is necessary

Although adequate fertility is required, excess nitrogen applications can cause post-harvest discoloration and reduced flavor. Basil benefits from a sidedress application of nitrogen after the first or second cutting.

Soil test values for phosphorus are above optimum. Do not add additional phosphorus at this time

For questions contact: Shuresh Ghimire, Ph.D., Extension Vegetable Educator. Phone: (860) 870-6933 Email:

shuresh.ghimire@uconn.edu

Consult the New England Vegetable Management Guide for more information regarding timing and placement of amendments.

References (Crop Related):

Soil Test Interpretation and Recommendations

<https://soiltesting.cahnr.uconn.edu/wp-content/uploads/sites/3514/2022/06/Standard-Nutrient-Analysis.pdf>

New England Vegetable Management Guide

<https://nevegetable.org/cultural-practices>



UConn Soil Nutrient Analysis Laboratory

6 Sherman Place, Union Cottage, Unit 5102
Storrs, CT 06269-5102
860-486-4274
soiltesting.cahnر.uconn.edu

UConn
COLLEGE OF AGRICULTURE,
HEALTH AND NATURAL
RESOURCES
EXTENSION & PLANT SCIENCE
AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 24489

Prepared For:

Eric Davison
Davison Environmental LLC
10 Maple Street
Chester, CT 06412

eric@davisonenvironmental.com
860.803.0938

Sample Information:

Sample Name: Sample 4
Lab Number: 4731
Area Sampled:
Received: 5/9/2025
Reported: 5/29/2025

Results

Nutrients Extracted From Your Soil (Modified Morgan)

	Below Optimum	Optimum	Above Optimum	Excessive*
Calcium > 4000 lbs/acre				
Magnesium 174 lbs/acre				
Phosphorus 930 lbs/acre				
Potassium 234 lbs/acre				

* Excessive only defined for Phosphorus (>40 lbs/acre)

Soil pH (1:1, H ₂ O)	6.8	<u>Element</u>	<u>ppm</u>	<u>Soil Range in CT</u>
Est. Cation Exch. Capacity (meq/100g soil)	28.3	Boron (B)	0.2	0.1 - 2.0
		Copper (Cu)	0.2	0.3 - 0.8
Buffered pH (Mod. Mehlich)	6.3	Iron (Fe)	0.9	1.0 - 40.0
		Manganese (Mn)	6.8	3.0 - 20.0
		Zinc (Zn)	5.6	0.1 - 70.0
<u>Base Saturation</u>	<u>%</u>	<u>Suggested</u>	Sulfur (S)	91.2
Potassium	1	2.0 - 7.0	Aluminum (Al)	7.0
Magnesium	3	10 - 30		
Calcium	88	40 - 50	Est. Total Lead (Pb)	low

Limestone & Fertilizer Recommendations for Basil

Limestone (Target pH of 6.6)	Nitrogen, N	Phosphorus, P ₂ O ₅	Potassium, K ₂ O
0 lbs / acre	115 - 130 lbs / acre	0 lbs / acre	50 lbs / acre

Comments:**LIMESTONE:**

No limestone is necessary

Although adequate fertility is required, excess nitrogen applications can cause post-harvest discoloration and reduced flavor. Basil benefits from a sidedress application of nitrogen after the first or second cutting.

Soil test values for phosphorus are above optimum. Do not add additional phosphorus at this time

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shuresh.ghimire@uconn.edu

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References (Crop Related):

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Soil Test Report

Order Number: 24489

Prepared For:

Eric Davison
Davison Environmental LLC
10 Maple Street
Chester, CT 06412

eric@davisonenvironmental.com
860.803.0938

Sample Information:

Sample Name: Sample 5
Lab Number: 4732
Area Sampled:
Received: 5/9/2025
Reported: 5/29/2025

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	> 4000 lbs/acre				
Magnesium	204 lbs/acre				
Phosphorus	1230 lbs/acre				
Potassium	258 lbs/acre				

* Excessive only defined for Phosphorus (>40 lbs/acre)

Soil pH (1:1, H ₂ O)	6.9	<u>Element</u>	<u>ppm</u>	<u>Soil Range in CT</u>
Est. Cation Exch. Capacity (meq/100g soil)	32.4	Boron (B)	0.2	0.1 - 2.0
		Copper (Cu)	0.2	0.3 - 0.8
Buffered pH (Mod. Mehlich)	6.3	Iron (Fe)	0.7	1.0 - 40.0
		Manganese (Mn)	7.1	3.0 - 20.0
		Zinc (Zn)	5.8	0.1 - 70.0
<u>Base Saturation</u>	<u>%</u>	<u>Suggested</u>		
Potassium	1	2.0 - 7.0		
Magnesium	3	10 - 30		
Calcium	90	40 - 50		
		Sulfur (S)	106.0	10 - 100
		Aluminum (Al)	5.6	10 - 300
		Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Basil

Limestone (Target pH of 6.6)	Nitrogen, N	Phosphorus, P ₂ O ₅	Potassium, K ₂ O
0 lbs / acre	115 - 130 lbs / acre	0 lbs / acre	25 lbs / acre

Comments:**LIMESTONE:**

No limestone is necessary

Although adequate fertility is required, excess nitrogen applications can cause post-harvest discoloration and reduced flavor. Basil benefits from a sidedress application of nitrogen after the first or second cutting.

Soil test values for phosphorus are above optimum. Do not add additional phosphorus at this time

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Appendix B

Site Photographs



Photo 1: south field looking northwest.



Photo 2: south field, from west side looking south.



Photo 3: northeast field looking east.



Photo 4: northeast field looking west.



Photo 5: west field looking east.



Photo 6: west field looking west.



Photo 7: wetland crossing looking north.



Photo 8: wetland crossing looking south.



Photo 9: wetland crossing looking north.



Photo 10: wetland crossing looking south.



Photo 11: Japanese barberry dominated forested area.



Photo 12: wetland bordering field edge.