Exh. SFS-KD-3

South Forty Solar Farm
Revised Vegetation Management Plan

TCE# 2013113-1 | South Forty Solar, LLC
Burlington, Vermont

Date:
September 25, 2014

Prepared For:
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c/o Frank von Turkovich
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TRUDELL CONSULTING ENGINEERS tce

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VEGETATION MANAGEMENT PLAN

SOUTH FORTY SOLAR FARM

BURLINGTON, VERMONT

PROJECT PURPOSE

The following Vegetation Management Plan was prepared for the 40-acre Keystone Development Corporation property located on Sunset Cliff Road in Burlington, Vermont. Fieldwork required for the plan was conducted by Ms. Karina Dailey, PWS, Environmental Scientist for Trudell Consulting Engineers (TCE), in November, 2013 and Spring 2014.

South Forty Solar, LLC proposes to install a 2.5 megawatt AC (MW) solar electric plant connected to Burlington Electric Department's distribution system. The design consists of an 18-acre +/- solar field located on the 40-acre property. The solar arrays will be supported on driven steel foundation piles that hold the solar panels at a fixed 30 degree tilt angle, facing true solar south. The use of driven piles will minimize soil and vegetation disturbance. The support structures will be designed to hold the bottom of the solar panels at approximately 48 inches above existing grade so that ground snow accumulation in winter does not affect solar generation. The height of the arrays will be approximately 12 ft. above grade. Arrays will be placed in east-west rows set a sufficient distance apart (approximately 35 ft) to minimize self-shading.

The solar array area will be located on the northern portion of the property which consists predominantly of old field and upland forest. Approximately 10 acres of trees and 8 acres of shrubs will be cleared to allow placement of solar panels. The cleared area will be surrounded by a wire mesh fence (approximately 6 ft high) to meet National Electric Code requirements. An additional "forest management zone" area within a portion of the designated 50 ft. natural communities/wetland buffer is needed to control solar shading. Refer to Appendix 1 for a plan illustrating the vegetative covertypes and clearing impact areas described above. Refer to Appendix 2 for an illustration of the vegetation heights required to maintain adequate solar exposure.

Because the solar arrays are installed using driven piles, this project is an allowed practice under federal wetlands regulations and is therefore exempt from U.S. Army Corps of Engineers oversight. However, a State of Vermont Wetlands permit is necessary for wetland/wetland buffer impact associated with the driven piles and for clearing activity within the facility clearing extent boundary and within portions of the forest management zone. This study is provided as a supplement to the Vermont Wetlands Permit Application submitted by South Forty Solar, LLC and addresses certain impacts on the natural communities' function as per Section 5.5 of the Vermont Wetland Rules. Implementation of this plan will assure proper management of the 50 foot wetland/natural community buffer area as it relates to the proposed solar project, to prevent undue adverse impacts to the wetland and to promote the long-term health of the wetlands located on the site parcel.

SITE DESCRIPTION

The 40-acre property is located in the New North End of the City of Burlington, approximately 850 ft. east of Lake Champlain. The property is fairly level, sloping gently to the southwest with

elevations ranging from 122 ft in the southwest corner and rising to 142 ft in the northeast portion of the property. Access to the property is from the east off of Starr Farm Road which turns into Sunset Cliff Road.

Residential development surrounds the parcel on all sides with compact residential lots ranging from approximately 1/4 to 1/2 acre in size on the west and east boundaries. The southern boundary is comprised of similar sized lots, with a small park and open space area located adjacent to the southwest corner of the parcel. The northern boundary of the tract is buffered by a relatively undeveloped 19-acre parcel with a series of waterfront residential lots located beyond, on the lakeshore. Both man-made and natural activities have affected the site characteristics of the subject parcel. The parcel is currently undeveloped with a variety of different vegetative natural community compositions. In recent history portions of the parcel were used intensively for agricultural practices, as is evidenced by abandoned fence lines, relic ditches, and historical aerial photographs. Frequent mowing, tilling, grazing, and crop production have manipulated both the microtopography and vegetative landscape of the parcel.

Soils within the project area consist of Au Gres fine sandy loam, Covington silty clay, with a small portion of Palatine silt loam, and Adams and Windsor loamy sands, 0-5% slopes. Covington silty clay is the only soil type on the property listed as hydric for Chittenden County, Vermont (USDA, 2013; Appendix 1 - C5-01 Pre-Construction Plan).

VEGETATIVE COVER TYPES AND NATURAL COMMUNITY DESCRIPTION

A large stand of white pines (*Pinus strobus*) comprises the northeast portion of the parcel with a mix of hardwoods along the remaining east and south margins. The southern half of the property is characterized as a forested wetland with a Vermont Natural Community designation of "Wet Sand-Over-Clay Forest" with a State Rank of S2 - rare (VT NHP 2004). The Wet Sand-Over-Clay Forest is comprised of an overstory dominated by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), and gray birch (*Betula populifolia*). This wetland transitions into an open field that comprises the northwest quadrat and is a combination of wet meadow with portions transitioning to shrub communities dominated by dogwood (*Cornus amomum* and *Cornus alba*), speckled alder (*Alnus incana*), staghorn sumac (*Rhus typhina*), and white pine (*Pinus strobus*).

Vermont Natural Heritage Program (VT NHP) ecologist, Eric Sorenson, visited the site on April 12, 2013, to review the Wet Sand-Over-Clay Forest natural community area. During the site visit, he confirmed with our finding that the extent of the Wet Sand-Over-Clay natural community protection area is contiguous with the northeast wetland boundary and follows the proposed solar array clearing limits line southwest (Appendix 1). The southern portion of this wetland is identified as a high quality example of the Wet Sand-Over-Clay community type. Because of the rare (S2) ranking of this unique natural community this Wet Sand-Over-Clay Forest will be conserved as per Section 5.5 of the Vermont Wetland Rules. Additionally, the Wet Sand-Over-Clay Forest will be buffered by the 50 foot (ft) wetland buffer applicable to the wetland on the southwest side.

The 50 ft buffer community is an ecotone community with species composition changing based on distance from meadow edge along the west end of the buffer and distance from pine forest along the south end of the buffer. General tree and shrub species represented in this buffer include gray birch, red maple, paper birch (Betula papyrifera), white pine (Pinus strobus), eastern hemlock (Tsuga canadensis), European buckthorn (Rhamnus cathartica),

and red oak (Quercus rubra) with shrub composition to include honeysuckle (Lonicera morrowii), multiflora rose (Rosa multiflora) and dogwood species. Regeneration along this buffer is a mix of the same species.

PRESCRIBED MANAGEMENT

At a November 6, 2013, meeting, Eric Sorenson reviewed the project's proposed selective tree height management within the 50 ft natural communities/wetland buffer which is needed to prevent shading of the solar generation facility along an approximate 20 degree plane (from the bottom edge of the foremost solar array to the horizon). Selective tree height management was proposed and agreed to as an allowed use within the Forest Management Zone (Appendix 1; Appendix 2) provided that the project follows the treatment and control plans proposed below.

Work in this zone is limited to tree clearing impacts as depicted in Appendix 1 (site plan C10.01). Tree clearing impacts were determined based on collaboration with solar design consultant L.W. Seddon, LLC and field calculations made by Greenleaf Forestry. The tree clearing impact areas within the zone were calculated using the "Drip Line Tree Factor Method", coined by Greenleaf Forestry. This method averages the tree canopy trip line within the subject forest stand and calculates impact for each tree removed based on the average drip line radius. In this case the average drip line radius was 17ft. Tree clearing is planned within the drip line tree factor polygons. A visual profile representation is depicted in Appendix 2. No trees will be removed within the designated Wet Sand-Over-Clay forest area (see Appendix 1). The forest management zone would be effective only during the lifetime of the solar generating facility.

TREATMENT - CUTTING AND MOWING

In the wetlands and the forest management zone, all pre-construction tree and shrub clearing will be performed by hand using a chainsaw or hand held brush cutter. Limbs and woody debris will be removed from the solar array area fence line and 10-ft mow zone, as well as the tree management zone. All forest management will be conducted during dry or frozen conditions to minimize soil disturbance. Harvested trees will be cut to ground level. Standing dead trees within the forest management zones that do not interfere with solar gain or facility operations will be left on the property.

Mowing within the solar array area and 10 ft wide mowing strip will be conducted by the solar farm's maintenance crew (estimating twice a year, depending on growing conditions) to maintain grasses and discourage woody species from growing. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity (a.k.a. during the driest times of the year).

Standard maintenance equipment will consist of gang-mowers (in the upland area and a tow behind brush mower for wetland area. Any shrub growth in the array area too large for the brush mower will be removed by a hand-held brush cutter prior to mowing. Trees in the forest impact zones that have exceeded their height limitations will be cut by chain saw as necessary and removed from the site.

NON –NATIVE INVASIVE SPECIES CONTROL PLAN (NISCP)

As proposed in South Forty Solar, LLC's Vermont Wetlands Permit Application, the following Non-Native Invasive Species Control Plan (NISCP) is planned to monitor and control invasive species in the following areas on the project parcel: 1) all of the 50-ft wetland buffer zone, 2) 100 ft into the Wet Sand-Over Clay-Forest (the distance likely affected by increased light), and 3) within the entirety of the wet-sand-over-clay forest (see project plans). At present the Wet Sand-Over-Clay Forest currently hosts several invasive plant species, including European buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera morrowii and L. tatarica*), and Japanese barberry (*Berberis thunbergii*). Other areas on the site outside of the Wet Sand-Over-Clay Forest host purple loosestrife (*Lythrum salicaria*), oriental bittersweet (*Celastrus orbiculatus*), and reed canary grass (*Phalaris arundinacea*). The presence of these invasive plants on the parcel threatens the integrity of this rare natural community.

A Professional Wetland Scientist will be retained to identify non-native invasive plants in the forested wetland and its buffer zone, and to supervise their removal. The control techniques to be utilized will be appropriate for each species, and will follow the guidelines recommended by the Nature Conservancy of Vermont (Appendix 4 – Invasive Plant Management Fact Sheets). This will include a combination of mechanical methods and judicious use of herbicides (if necessary) to manage non-native invasive plant populations.

Sporadic populations of honeysuckle and buckthorn currently exist within proposed clearing areas. Approximately three weeks prior to the tree removal, if in full leaf out or otherwise the following leaf out season, the invasives should be managed using a mix of herbicides called Rodeo and Garlon-4. The cut stump method of application should be used for these species. This is where the stems are cut and the herbicide cocktail immediately applied to the stump. This should occur during the growing season to ensure transaction to the root system. A holder of a Vermont Commercial Pesticide Applicator Certificate will be required.

Small patches of non-native invasive plants will be eliminated during the entire monitoring period. Large patches will be treated and the treatment documented. Non-native invasive plants will be removed from the site in the calendar year they are identified and disposed of at the City of Burlington wood disposal area (presently the McNeil Wood & Yard Debris Depot at 111 Intervale Road, Burlington).

Non-native species monitoring and control will address species which are included in the Vermont Agency of Agriculture Quarantine #3 –Noxious Weeds (Appendix 5 – Noxious Weed Quarantine #3), or the version current at the time of monitoring (see attached document). In addition to the plants on this list, the following plants selected from the current Vermont Invasive Plant Species Watch List (as developed by the Vermont Invasive Exotic Plant Committee) will also be included in monitoring and control efforts:

- Reed canary grass (*Phalaris arundinacea*)
- Autumn olive (*Elaeagnus umbellata*)
- European alder (*Alnus glutinosa*)

To reduce the spread of additional invasive species on the site any soils brought on site will be evaluated as to their past location to confirm that invasive seeds aren't transported to the site. Additionally, exposed soil areas often provide an empty slate for invasive plant establishment. The potential for this establishment will be offset by using an approved seed mix with fourteen

days of initial soil disturbance (in accordance with the Construction General Permit) on exposed soils.

The non-native invasive species monitoring and control plan will begin when the project commences as part of pre-construction. Because there will be on-going wetland and buffer zone vegetation management, the NISCP will run for the life of the solar project. Monitoring and control will occur during the summer months (June-August) when herbaceous plant species are identifiable. Monitoring and control will occur every year for the first five years after construction and every five years after that for the life of the project.

A decommissioning plan will be required as part of the section 248 approval process, similar to those required for other commercial scale solar projects. At the end of the project's useful life when decommissioning commences, all project-related infrastructure will be removed from the site. All areas in which vegetation management was conducted will be allowed to naturally regenerate.

SUMMARY

The proposed solar array project area, currently consisting predominantly of open field, shrub, and upland forest, is located on the northern portion of the property. Approximately 18 acres of this area will be cleared of trees and shrubs to allow placement of solar panels.

Portions of the area commencing 10 ft. south of the fence line to the northern edge of the wetland will be maintained for selective tree height removal as described in this document.

REFERENCES

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United States Department of Agriculture (USDA). 1991. Hydric Soils of the United States. USDA Soil Cons. Serv. Misc. Pub. 1492.

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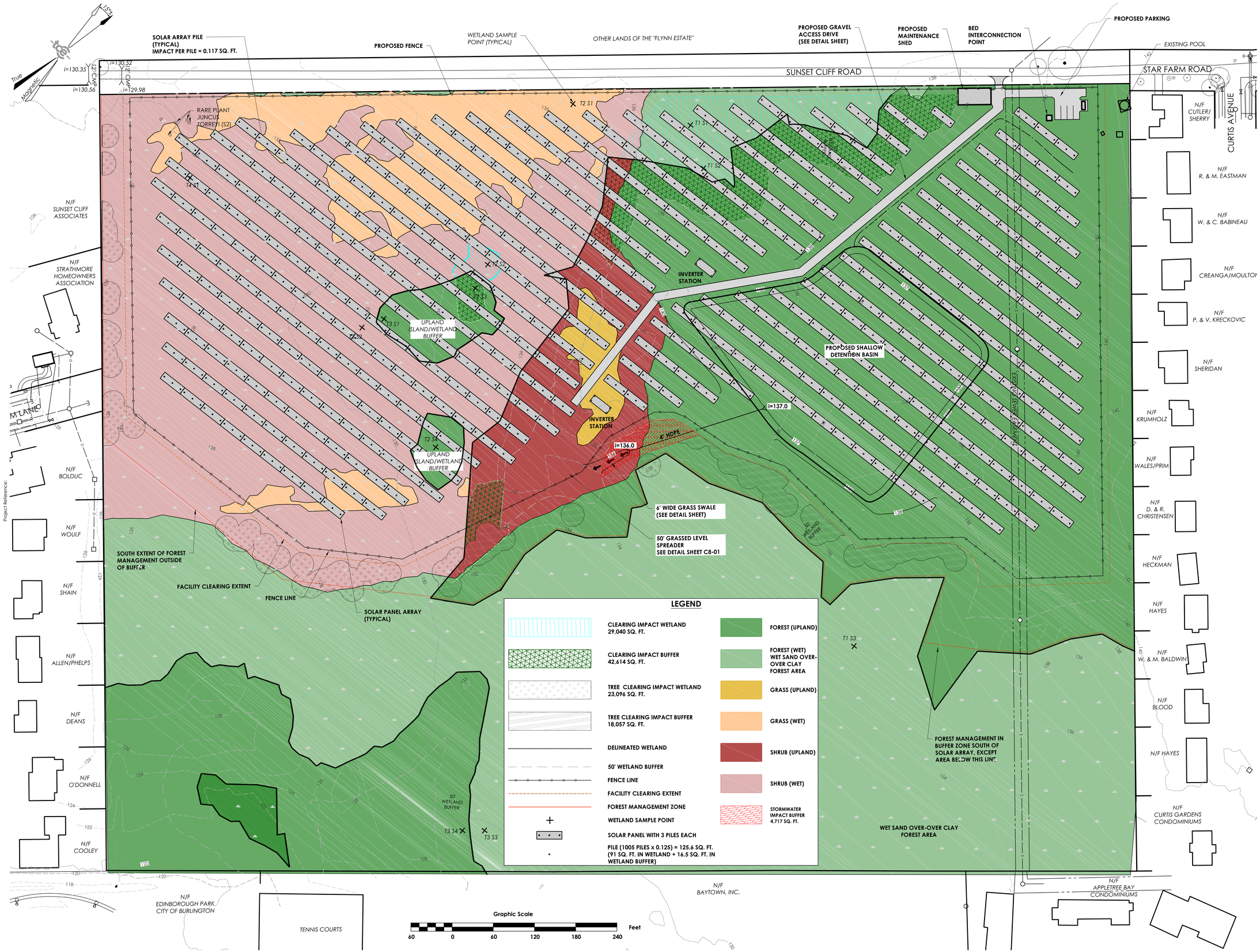

Project Reference:

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Revisions

No.	Description	Date	By
1	Update Wetland, Wetland Buffer & Impacts	04/24/14	KED
2	Add Vegetation Cover Type as per Laura Lapierre	07/23/14	KED
3	Add Tree Impact to Wetland and Buffer	09/05/14	KED

WETLAND NOTE:
THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN NOVEMBER 2012, AND RECONFIRMED APRIL 2014, ACCORDING TO STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE NORTHEAST REGIONAL SUPPLEMENT. THIS DELINEATION WAS PERFORMED BY KARINA DAILEY OF TRUDELL CONSULTING ENGINEERS AND APRIL MOULAERT OF EMR2 CONSULTING.

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

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5. It is the User's responsibility to ensure this copy contains the most current revisions.

STATE OF VERMONT
JEREMY M. MILLOTT
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

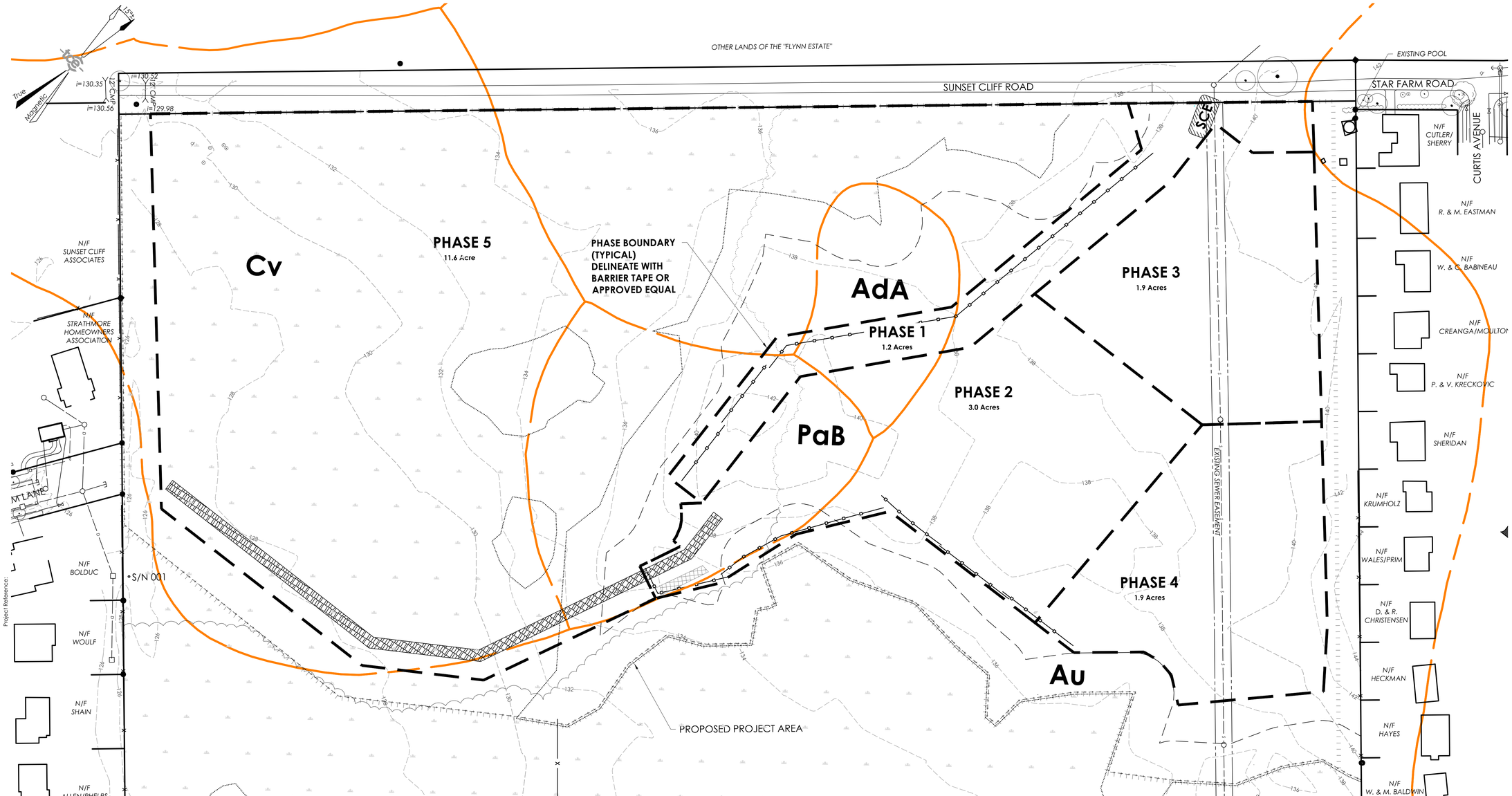
South Forty Solar Farm Sunset Cliff Road Burlington, Vermont

Sheet Title

Wetland Impact Plan

Date:	04/01/2014
Scale:	1" = 60'
Project Number:	13-113
Drawn By:	RMP
Project Engineer:	JMM
Approved By:	
Field Book:	

C10-01



EROSION PREVENTION AND SEDIMENT CONTROL NARRATIVE

GENERAL DESCRIPTION OF PROJECT
THE FOLLOWING NARRATIVE WAS PREPARED FOR THE CONTRACTOR'S EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN. THIS PROJECT CONSISTS OF THE INSTALLATION OF A SOLAR FARM AND SUPPORTING INFRASTRUCTURE ON SUNSET CLIFF ROAD IN BURLINGTON, VERMONT. EARTHWORK FOR THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A GRAVEL ACCESS ROAD, STORMWATER DETENTION BASIN, DRIVING PILES FOR THE SOLAR ARRAY, AND TRENCHING OF ELECTRICAL CONDUIT. WHILE A PORTION OF THE SOLAR ARRAY WILL BE LOCATED IN A CLASS II WETLAND, THE PROJECT HAS BEEN DESIGNED TO LIMIT THE DISTURBED EARTH IN THIS AREA. THE ONLY EARTH DISTURBANCE IN THIS AREA WILL BE FROM THE DRIVING OF SUPPORT PILES FOR THE SOLAR PANELS.

SITE DRAINAGE CHARACTERISTICS
THE SITE GENERALLY SLOPES FROM EAST TO WEST, WITH PITCH NOT EXCEEDING 5% ANYWHERE IN THE PROJECT AREA. THERE ARE TWO DISCHARGE POINTS FROM THE SITE. S/N 001 IS A CATCH BASIN ON THE WESTERN SIDE OF THE PROPERTY, AND S/N 002 IS A DRAINAGE SWALE IN THE SOUTHWEST CORNER OF THE PROPERTY.

DRAINAGE, WATERWAYS AND BODIES OF WATER
LAKE CHAMPLAIN IS THE ULTIMATE RECEIVING WATER FOR THE PROJECT, THOUGH RUNOFF WILL BE CONVEYED TO THE LAKE VIA THE CITY OF BURLINGTON STORMWATER SYSTEM.

LOCATION, EXISTING FEATURES, BUILDINGS & UTILITIES
THE PROPERTY IS LOCATED TO THE SOUTH OF SUNSET CLIFF ROAD. A CITY-OWNED SANITARY SEWER EXISTS ON THE EASTERN PORTION OF THE PROPERTY. NO BUILDINGS OR ROADS CURRENTLY EXIST ONSITE. THE SITE HISTORICALLY WAS PASTURE, WITH GRAZING LIVESTOCK. REMNANTS OF FENCE STILL EXIST ONSITE.

VEGETATION
THE SITE IS CURRENTLY A MIXTURE OF MEADOW (IN THE WETLAND AREA) AND FOREST.

SOILS
SOILS IN THE PRIMARY AREA OF EARTHWORK CONSIST OF ADAMS AND WINDSOR LOAMY SANDS (K = 0.17), AU GRES FINE SANDY LOAM (K = 0.15), AND PALATINE SILT LOAM (K = 0.32). THE WETLAND AREA CONSISTS OF COVINGTON SILTY CLAY (K = 0.49), BUT IMPACTS TO THIS AREA WILL BE LIMITED TO 84 SQUARE FEET (SUPPORT PILE DRIVING ONLY).

SOILS
SOILS IN THE PRIMARY AREA OF EARTHWORK CONSIST OF ADAMS AND WINDSOR LOAMY SANDS (K = 0.17), AU GRES FINE SANDY LOAM (K = 0.15), AND PALATINE SILT LOAM (K = 0.32). THE WETLAND AREA CONSISTS OF COVINGTON SILTY CLAY (K = 0.49), BUT IMPACTS TO THIS AREA WILL BE LIMITED TO 84 SQUARE FEET (SUPPORT PILE DRIVING ONLY).

PROXIMITY TO NATURAL AND MAN-MADE WATER FEATURES
LAKE CHAMPLAIN IS APPROXIMATELY 750 FEET SOUTH OF THE PROJECT AREA.

GRADING PLAN, TIMETABLE & CONSTRUCTION SEQUENCE
THIS PROJECT IS ANTICIPATED TO BEGIN IN THE WINTER OF 2014/2015, WITH THE BULK OF THE GRADING ACTIVITIES TO BEGIN IN THE SPRING OF 2015. ALL WORK IS ANTICIPATED TO BE COMPLETED BY SUMMER 2015.

FIRST, THE DISTURBANCE AND PHASING LIMITS ARE TO BE MARKED WITH BARRIER TAPE AS INDICATED ON THE PLANS. PERIMETER SEDIMENT CONTROL FEATURES (E.G. SILT FENCE) WILL BE INSTALLED ALONG THE WETLAND BUFFER BOUNDARIES NEXT TO ESTABLISH PROTECTION TO THESE NATURAL FEATURES. ONCE THESE ITEMS ARE INSTALLED, EARTHWORK MAY PROCEED ACCORDING TO THE EPSC PLAN. NO MORE THAN FIVE (5) ACRES OF DISTURBED EARTH MAY BE OPEN AT ONE TIME. THE SITE SHALL REMAIN COMPLIANT WITH THE SITE STABILIZATION REQUIREMENTS NOTED ON THE EPSC PLAN SET.

EPSC PLAN & TIMETABLE
BY PHASING THE PROJECT AND PROVIDING PERIMETER SEDIMENT CONTROL MEASURES, THE RECEIVING WATERS ARE PROTECTED FROM EROSION FROM THE SITE. FIBER ROLLS ARE PROVIDED IN THE WETLAND AREA AS THEY DO NOT REQUIRE AS EXTENSIVE TRENCHING AS SILT FENCE. IT IS NOT ANTICIPATED THAT MUCH, IF ANY, EROSION OCCURS IN THE WETLAND AREA, AS EARTH DISTURBANCE IS LIMITED TO THE DRIVING OF THE PILES FOR THE ARRAY. ALL MEASURES WILL BE REMOVED ONCE THE SITE HAS ACHIEVED FINAL STABILIZATION (GRAVEL AND VEGETATIVE COVER).

REPORTING FREQUENCY
SITE OBSERVATION WILL OCCUR AT A MINIMUM OF ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE.

ONSITE PLAN COORDINATOR (OSPC) INFORMATION
TO BE DETERMINED

STABILIZATION REQUIREMENTS
ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY OR FINAL STABILIZATION WITHIN FOURTEEN (14) CALENDAR DAYS OF THE INITIAL DISTURBANCE. AFTER THIS TIME, ANY DISTURBANCE IN THE AREA MUST BE STABILIZED AT THE END OF EACH WORK DAY; HOWEVER, THE FOLLOWING EXCEPTIONS APPLY:

1. IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECASTED IN THAT TIME PERIOD, WORK MAY CONTINUE WITHOUT STABILIZATION, AND,
2. IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION WITH A DEPTH OF TWO (2) FEET OR GREATER (E.G. FOUNDATION EXCAVATION, UTILITY TRENCH), STABILIZATION IS NOT REQUIRED.

STABILIZATION IS TO BE ACCOMPLISHED IN ACCORDANCE WITH THE DETAILS PROVIDED IN THE EPSC PLAN SET.

REQUIREMENTS FOR WINTER CONSTRUCTION
THE FOLLOWING MEASURES MUST BE ADHERED FOR CONSTRUCTION BETWEEN OCTOBER 15 AND APRIL 15.

TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:

1. IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
2. DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.

- PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO A THICKNESS OF NO MORE THAN 1 INCH.
- MULCH USED FOR TEMPORARY STABILIZATION MUST BE APPLIED AT DOUBLE THE STANDARD RATE, OR A MINIMUM OF 3 INCHES WITH AN 80-90% COVER.
- SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED PRIOR TO GROUND FREEZE.
- DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
- A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS SUCH AS SILT FENCES.
- IN AREAS OF DISTURBANCE THAT DRAIN TO A WATER BODY WITHIN 100 FEET, SILT FENCE SHALL BE REINFORCED.
- ALL AREAS THAT ARE DISTURBED DURING WINTER CONSTRUCTION SHALL BE STABILIZED BY APPLYING SEED AND MULCH AT TWICE THE NORMAL RATE AND THEN COVERED WITH STRAW MATTING.

EPSC Legend

- PROJECT AREA
- PHASE BOUNDARY
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- FIBER ROLL
- SILT FENCE
- SOIL BOUNDARY LINE
- SOIL STOCK PILE

SOIL KEY

ID	DESCRIPTION
AdA	ADAMS AND WINDSOR LOAMY SANDS
Au	AU GRES FINE SANDY LOAM
Cv	COVINGTON SILTY CLAY
PaB	PALATINE SILT LOAM

Graphic Scale
60 0 60 120 180 240 Feet

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Revisions

No.	Description	Date	By
1	Update Wetland & Site Layout	07/23/14	KED

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STATE OF VERMONT
JEREMY M. MATOTT
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

South Forty Solar Farm
Sunset Cliff Road
Burlington, Vermont

Sheet Title

Pre-Construction Plan

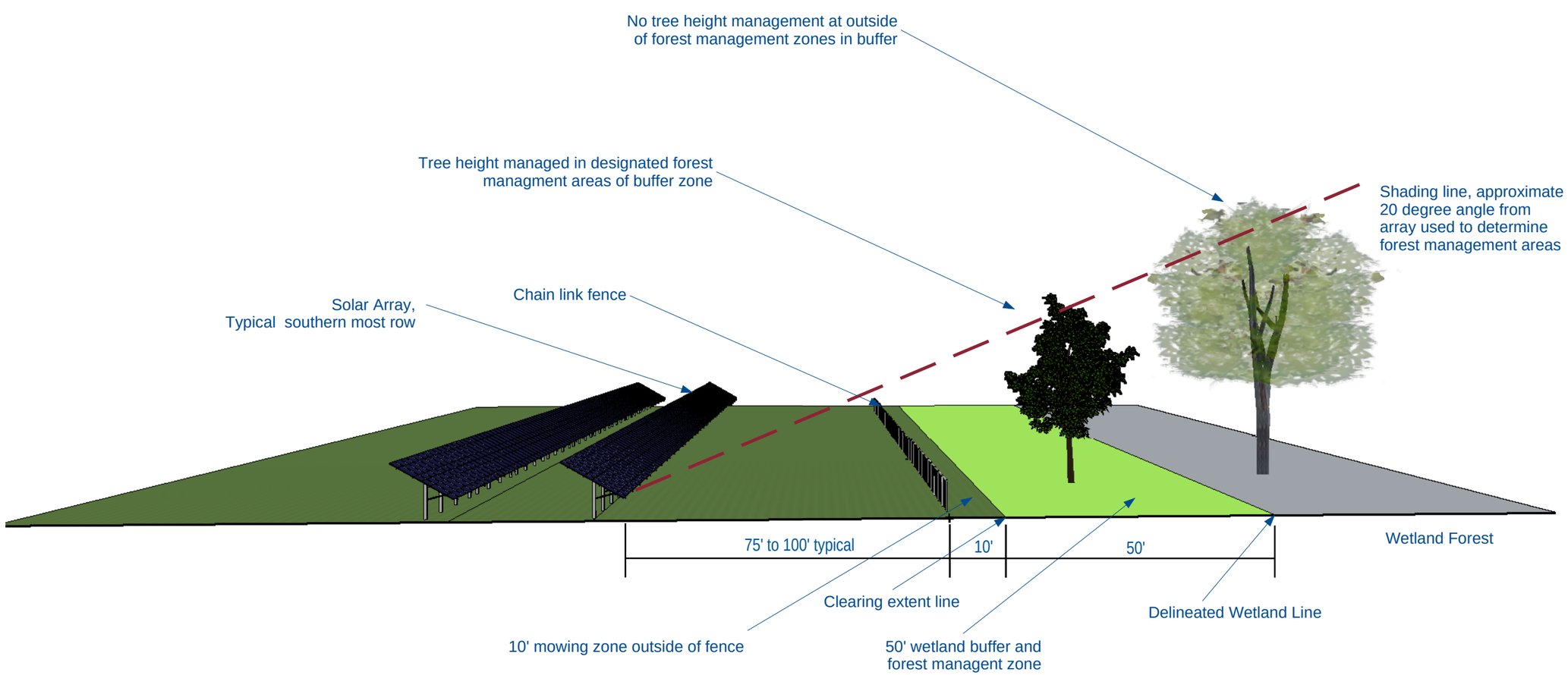
Date:	03/25/2014
Scale:	1" = 60'
Project Number:	13-113
Drawn By:	RMP
Project Engineer:	JMM
Approved By:	
Field Book:	

C5-01

APPENDIX 2 – BUFFER ZONE SHADE LINE DIAGRAM

SOUTH FORTY SOLAR FARM, BURLINGTON, VT

Not for Construction



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Tel: 802-272-7284

Client:
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c/o Frank vonTurkovich, PC
One National Life Dr.
Montpelier, VT 05604

Project:
South Forty Solar Farm
Sunset Cliff Rd.
Burlington, VT 05401

AC Capacity: 2.5 MW AC
Array Size : 3.2879 MW DC
Annual Output = 3,750 MWH
Module: 305 Watts
Mounting: driven pile
Module tilt: 30 degrees
Azimuth: 180 degrees (True)

Vers	By	Date	Changes
1	LWS	13-Nov-2013	
2	LWS	5-Sep-2014	update zones
			-

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Drawing:
PV-A05

Description:
Management Zones

Scale:
N.T.S.
(Printed 11x17)

APPENDIX 3 – PHOTOGRAPHIC DOCUMENTATION

SOUTH FORTY SOLAR FARM, BURLINGTON, VT

Upland Pine Forest

Wet Meadow

Wet Sand-Over-Clay Forest

Wet Sand-Over-Clay Forest

APPENDIX 4 – INVASIVE PLANT MANAGEMENT (MECHANICAL AND CHEMICAL) FACT SHEETS

SOUTH FORTY SOLAR FARM, BURLINGTON, VT

Invasive Plant Management

mechanical fact sheet

Proper Disposal Methods

It's important to dispose of invasive plant species properly. Sometimes, the material left remaining at a site can re-root or produce fruit, even after it has been pulled from the soil. This section discusses the best ways to dispose of invasive plants to prevent re-infestations.

#1—Bagging: It is typically never a good idea to compost invasive plant material. Root fragments or seeds can persist in compost piles and, once transported to a new site, re-infest that area. To insure that removed plants do not remain viable, place all plant parts into a thick 3 mil black construction trash bag and securely closed. Let the bag sit, in a warm, sunny site until all material is liquefied. Afterwards, bags may be disposed of at a trash dump.

#2—Burning: When cutting large material bagging is not an option. Burning, either in a burn pile or in your home stove, is a safe and effective way to destroy plant parts. Note: If plants have berries or fruit present, the seeds can fall off during transportation and re-infest a new site. Be aware of where you are taking material and check those transport areas for future infestations.

3—Piling: Creating brush piles of woody plant material decreases the likelihood of plants re-rooting into the soil and provides habitat for native animals.

Specific Treatment Methods

Hand pulling: This method insures that, with proper identification, that only target plants are removed. When pulling, using tools like a weeder or spade may be helpful. Grasping plants at the base near the soil and pulling slowly will insure that you pull up the entire plant and root stem—many herbaceous plants can re-sprout from underground roots, so getting the entire tap root is crucial. Hand pulling can cause soil disturbance, especially if the area is heavily infested, and typically it's best to replant an area after you remove the invasive population. No permits are necessary to hand pull plants in Vermont.

Cutting or Mowing: Sometimes, when invasive plants are found in large monocultures or their root systems are extensive, cutting or mowing is the best option. Typically, the energy stored in the root system will be great and it will take multiple cuts over a season and/or years to fully deplete the plant's energy reserve. Removing cut materials will prevent any nodes or flowers from spreading seed and encourage growth of non-invasive plants in the seed bank underneath. It can be combined with smothering (see below) or with a foliar spray (See Herbicide Use Handout) to the re-sprouted plants.

Smothering: Some invasive plants are so pernicious and have such extensive root systems that you cannot cut it fast enough or dig it deep enough to control the growth. For these species, removing all above-ground vegetation and then covering the entire site—with at least a 3 foot "buffer zone" extra— with ground tarps or black construction plastic will smother the plants' new growth. The ends of the material should be secured firmly by large stones, bricks or ground staples. The site should be monitored frequently to insure that the cover remains securely in place and that sneaky roots or rhizomes are not growing outside the cover. Leave the ground cover in place for at least 1 full growing season and then replant the area as soon as it has been removed to encourage growth of wanted species.

Best Management Practices—Individual Species

garlic mustard (*Alliaria petiolata*)	**Hand pulling**: From March - May before plants go to seed. **Mowing:** Cut at ground level after flowering but before seed set from mid-April to early May. Remove cut stalks from site and dispose of properly. Disposal method #1 & 2.
wild chervil (*Anthriscus sylvestris*)	**Hand pulling**: From April to June prior to seed set. **Mowing:** Mow twice a year—when plants begin to flower in mid-May and again during the second flowering in early July. Replanting with a seed mix in the fall will decrease re-infestations. Disposal method #1 & 2.
goutweed (*Aegopodium podagraria*)	**Hand pulling**: Small patches may be eliminated by persistent hand pulling, but that must include all rhizomes and roots. Properly dispose of all removed parts. **Mowing:** Frequent mowing 3-5 times a year will slow spread but not eliminate infestations. **Smothering:** Remove all top growth prior to covering. Best if established in Spring and allowed to remain through entire season. Disposal method #1 & 2.
Asiatic bittersweet (*Celastrus orbiculatus*)	**Mowing:** Regular weekly mowing of grounded populations will exclude bittersweet from an area. Less frequent mowing of 2-3 times a year will stimulate root-suckering and should be avoided. Disposal method #1 & 2.
black swallowwort (*Cynanchum louiseae*)	**Hand Pulling:** Root crowns may be dug up any time during the growing season. Mowing and cutting will stimulate growth and increase the patch size and should be avoided. **Smothering:** Remove all top growth prior to covering. Best if established in Spring and allowed to remain through entire season. Disposal method #1 & 2.
purple loosestrife (*Lythrum salicaria*)	**Hand pulling:** For small, limited stands removing the entire stalk and taproot prior to seed set in August will provide effective control. Disposal method #1 & 2.
common reed (*Phragmites australis*)	**Mowing:** Set mower blade higher than 4 inches but insure cuts are below the first leaf. Best treatment time is after September until the first frost—cut annually until dead. Mowing before July will stimulate growth. **Smothering:** Remove all top growth prior to covering. Best if established in Spring and allowed to remain through entire season. Disposal method #1 & 2.
Japanese knotweed (*Polygonum cuspidatum*)	**Mowing:** Will only be effective if plants are cut 5+ times a year throughout the growing season, for at least 3 seasons. **Smothering:** Remove all top growth prior to covering. Best if established in Spring and allowed to remain through entire season. Knotweed, though herbaceous, has a thick stalks that will easily lift up smothering material. Heavy objects, like concrete blocks or your wood pile, should be placed *on top* of the entire sheet to suppress the plant. Disposal method #1 & 3.
Woody Shrubs & Trees **	**Hand pulling:** Pull small seedlings, insuring that the entire tap root is removed, any time during the growing season. **Mowing:** For larger plants in open field settings, mowing at least biannually will prevent saplings from establishing in the area. Disposal method #1, 2 & 3. ** Bush honeysuckle (*Lonicera spp.*); Common buckthorn (*Rhamnus cathartica*); Glossy buckthorn (*Frangula alnus*); Japanese barberry (*Berberis thunbergii*)

For help identifying any of the above species please refer to the WOW! Fact Sheets on the individual species or the Additional Resources listed below.

Additional Resources: **The Nature Conservancy:** www.nature.org/vermont ; email: Vermont@tnc.org
Vermont Invasive Exotic Plant Committee: www.vtinvasiveplants.org
Invasive Plant Atlas of New England: www.ipane.org
The Nature Conservancy Global Invasive Species Initiative: tncweeds.ucdavis.edu

Contact: Sharon Plumb, The Nature Conservancy, 27 State Street, Suite 4, Montpelier, VT 05602, (802) 229-4425

Invasive Plant Management

chemical fact sheet

Become an informed applicator

- √ **Use an integrated approach.** Herbicides are an effective method for controlling invasive plants. If you choose to use herbicides, use them judiciously and in combination with other management methods.
- √ **Develop an invasive plant management plan**. Decide what your land management goals are. Use this plan to determine which plants you want to work on, where, and when. Good planning will result in ineffective treatment and well used resources.
- √ **Learn before you buy or apply.** Before you head to the store or pull the trigger, research which chemicals and methods are most appropriate for your land and the plants that you want to manage. Take a workshop from a reputable person or organization.
- √ **The label is the law.** Each herbicide comes with a label that tells you where you can apply the herbicide, and how to mix and apply it to the problem species.
- √ **You need to be certified to apply herbicides on any land that you do not own.** Contact the Vermont Department of Agriculture Pesticide Certification & Training Program at 802-828-3482.
- √ **You need a permit to apply herbicides near water.** Contact Department of Water Quality State Wetlands Coordinator, Alan Quackenbush, at 802-241-3761.
- √ **If you are working with large infestations, hire a contractor.** Contractors have years of experience to draw upon, and already own the necessary chemicals. Contact the Vermont Department of Agriculture Pesticide Certification & Training Program at 802-828-3482.

Herbicides Commonly Used to Manage Invasive Terrestrial Plants

Glyphosate: A non-selective herbicide which inhibits the synthesis of amino acids necessary in protein formation in most annual and perennial plants. It is relatively non-toxic to humans, birds, mammals, and fish, Most formulations have additions of surfactants to increase the efficacy of absorption into plants. This surfactant makes these highly toxic to aquatic organisms and should not be used near water. Common non-aquatic trade names are Roundup®, Roundup-Pro®, Accord®. A few formulations are registered for use in aquatic areas, including Rodeo**®, and Aquamaster**.® In Vermont, you need to be a certified applicator before you can purchase aquatic formulations.

Triclopyr: A selecitve herbicide which mimicks a plant hormone and causes uncontrolled growth in plants. It is labeled for use on woody and herbaceous broadleaved plants, does not affect monocots (grasses, lillies, orchids), and is relatively non-toxic to terrestrial animals. It comes in 2 formulations, a salt and an ester. Both can only be applied in upland, dry sites. Common trade names are Garlon™, Pathfinder™, and Brush-B-Gone™ You need to have a herbicide applicators license in order to purchase products with Garlon.

Specific Treatment Methods

Cut stump: This method is used for shrubs, trees, vines, and knotweed. Cut the plant 4" from the ground. Wipe the stump with a herbicide solution mixed with a colored dye to help you remember which stumps have been treated. This is most effective in the late August through mid-November when plants are relocating resources to their root systems.

Low volume foliar spray: When you have a large, dense population it is more efficient and uses less chemical to apply chemicals using a backpack or mist sprayer. This technique is the most likely to affect non-target plants when the spray drifts, so apply a spray when there is no wind. Foliar spray is done during the growing season when plants are in flower or fruit.

Basal bark: This method is most successful on small trees under 6 inches in diameter. It is only effective with the ester-triclopyr herbicide (Garlon 4®) and should not be used in wetlands. Use a backpack sprayer or handheld bottle to coat the lower 12-18 inches of the trunk. Avoid herbicide dripping down the bark.

Species Specific Treatment Techniques

The treatments described below are based upon field experience, research, and most importantly the law. The label is the law.

garlic mustard (*Alliaria petiolata*)	**Foliar Spray:** A 1-3% glyphosate solution will provide greater than 95% control when infestations are treated from September to October . Most native species are dormant at this time, and spraying will not affect them.
goutweed (*Aegopodium podagraria*)	**Foliar Spray:** A 2—10% glyphosate solution will brown goutweed leaves but not kill the roots. Repeat applications are necessary. If possible, after spraying the patch, cover the area with a thick plastic sheet that is secured around the edges with ground staples or sandbags. Keep covered for at least an entire season. Goutweed treatment sites need to be monitored yearly.
Asiatic bittersweet (*Celastrus orbiculatus*)	**Foliar Spray:** Low, dense patches may be cut to the ground in April and May. After 1 month, foliar applications of 1 –2% concentrations of triclopyr herbicide to re-growth will result in nearly 100% rootkill. **Cut Stump:** Cut vines 6" from the ground and treat stumps with 25% glyphosate solution. **Basal bark:** Spray 2-4% triclopyr around the vine's stump. This is best done in the fall or early winter, after herbaceous plants are gone and before there is snow on the ground.
black swallowwort (*Cynanchum louiseae*)	**Foliar spray**: Provides the most effective control when applied prior to seed production before mid-July. A 2% glyphosate solution or 1% triclopyr-ester solution reduces biomass by over 80% and density of stems by over 60%. Repeat applications are necessary.
purple loosestrife (*Lythrum salicaria*)	**Foliar Spray:** Apply a 1-2% glyphosate solution after peak bloom in late August. Cut and dispose of flower heads before treating. Because of the sensitivity of wetland areas, hand spraying or wiping plants with sponges will protect other plants from herbicide drift. *Contact the state to obtain the proper permits.*
common reed (*Phragmites australis*)	**Foliar Spray:** Good for dense stands of reed with no other vegetation present. Spray, or wipe using gloves and a sponge, a 2% glyphosate solution after the plants tassel (late August through October). If possible, return to site to cut back and remove dead stalks to encourage growth of suppressed vegetation. *Contact the state to obtain the proper permits.* **Cut Stump:** Cut and dispose of stalks. Drip into the hollow middle of the stem a 25% glyphosate solution from July to August.
Japanese knotweed (*Polygonum cuspidatum*)	**Foliar Spray:** In May, cut back the plants. In August, when other knotweed is blooming, spray a 3%-8% glyphosate or triclopyr solution on the regrowth. It is likely that repeat applications will be necessary the following year. *Foliar spray uses a lesser concentration of the active chemical, it is therefore a better choice when faced with a large stand of knotweed.* **Cut Stump:** Cut stems and dispose of stalks. Drip into the hollow middle of the stem with 21% glyphosate solution from July to August. An injector gun can also be used.
Woody Shrubs & Trees Bush honeysuckle (*Lonicera spp.*) Common buckthorn (*Rhamnus cathartica*) Glossy buckthorn (*Frangula alnus*) Japanese barberry (*Berberis thunbergii*)	**Foliar Spray:** This method is best used for dense populations. In the fall, when native plants are losing their leaves, spray a 2% glyphosate or triclopyr solution on the entire leaf surface of the plant. In order to avoid drift to native plants, spray on calm days. **Cut Stump:** Cut the plant 4" above the ground. Use a drip bottle to apply a 18—21% glyphosate solution to the stump. Apply chemical within one hour of cutting. This is best done in late summer through winter when plants are transporting resources to their root systems. **Basal Bark:** Spray the base of plants with a 2-4% triclopyr solution from August through November.

Additional Resources: **The Nature Conservancy:** www.nature.org/Vermont/weeds
Vermont Invasive Exotic Plant Committee: www.vtinvasiveplants.org
Center for Invasive Species and Ecosystem Health: www.bugwood.org

APPENDIX 5 – QUARANTINE #3 – NOXIOUS WEEDS

SOUTH FORTY SOLAR FARM, BURLINGTON, VT

Vermont Agency of Agriculture, Food & Markets
Quarantine #3 -Noxious Weeds

Section I: Statement of Concerns

Whereas, the Vermont Agency of Agriculture, Food & Markets having found that certain noxious weeds out compete and displace plants in natural ecosystems and managed lands; and

Whereas, competition and displacement of plants by certain noxious weeds has significant environmental, agricultural and economic impacts; and

Whereas, it has been determined to be in the best interest of the State of Vermont to regulate the importation, movement, sale, possession, cultivation and / or distribution of certain noxious weeds:

Therefore, the State of Vermont is hereby establishing this noxious weed quarantine regulation in order to protect Vermont's environmental and economic resources.

Section II: Definitions

"Class A Noxious Weed" means any noxious weed that is not native to the State, not currently known to occur in the State on the date of listing, and poses a serious threat to the State.

"Class B Noxious Weed" means any noxious weed that is not native to the state, is of limited distribution statewide, and poses a serious threat to the State, or any other designated noxious weed being managed to reduce its occurrence and impact in the State, including those on the Federal Noxious Weed List (7 C.F.R. 360.200).

"Committee" means the Vermont invasive exotic plant advisory committee appointed by the secretary.

"Cultivate" means to intentionally promote or improve the growth of a plant by labor and attention.

"Distribute" means the intentional act of transporting or disseminating plant material for the purposes of spreading or establishing a new location for said materials, whether for commercial gain or not, in knowing violation of this rule.

"Move" means the intentional act of transporting plant material from the property where said material originates, whether for commercial gain or not, in knowing violation of this rule.

"Noxious Weed" means any plant in any stage of development, including all current and subsequent subspecies, varieties, and cultivars, and parasitic plants whose presence, whether direct or indirect, is detrimental to the environment, crops or other desirable plants, livestock, land, or other property, or is injurious to the public health or the economy generally.

"Plant" means trees, shrubs, and vines; forage, fiber, and cereal plants; cuttings, grafts, scions, buds and lumber; fruit, vegetables, roots, bulbs, seeds and wood; other propagative materials; and all other plants, parts of plants, and plant products.

"Possession" means to intentionally grow, manage or cultivate through planting, pruning, watering, fertilization, weeding, propagation, or any other means that promotes the growth of the noxious weed. This does not include the incidental or unintentional occurrence of a noxious weed on wild or managed land.

"Secretary" means the Secretary of the Agency of Agriculture, Food and Markets, or his or her designee.

Section III: Statutory Authority

This rule is established by the Agency of Agriculture, Food and Markets under the authority granted to the secretary at 6 V.S.A., Chapter 84, 'Pest Survey, Detection and Management', and 6 V.S.A., § 1 (a) (10), 'General powers of agency; secretary of agriculture, food and markets.

Section IV: Designation as a Noxious Weed

Designation or deletions of noxious weeds shall occur through the following procedure and criteria:

(A) The secretary shall establish, with input from the committee, a list of prohibited noxious weeds.

(B) The prohibited weed lists (Class A and Class B lists as appears in Appendix A) will be reviewed annually by the committee to make recommendations for listed species additions or deletions.

(C) Completion and review of pest risk assessments (described below):

1. Evaluation of real or potential environmental, economic or other impacts of species prohibitions, and

2. other activities as deemed necessary by the committee to provide a comprehensive and defensible rationale for additions or deletions to the lists, and

3. review of presence of established weed populations, and eradication and control efforts, and the success of these efforts.

(D) The following conditions shall be met for a plant or plant product to be designated as a Class A or B Noxious Weed:

1. As determined by a pest risk assessment, a prohibited noxious weed must pose an actual or anticipated threat to a substantial agricultural, forestry or environmental interest and / or the general public;

2. Prohibiting a specified noxious weed is likely to contribute to the objective of preventing introduction or for limiting the spread and / or severity of the noxious weeds impact to the agricultural, forestry or environmental interest, or the general public;

3. No substitute or alternative mitigating action will accomplish the same pest prevention purpose; and

4. The economic and/or environmental benefits of prohibiting a specified noxious weed outweigh the economic and/or environmental benefits associated with not prohibiting the noxious weed.

(E) The following factors shall be used to evaluate whether a plant or plant product has satisfied the conditions for designation as a Class A or Class B Noxious Weed:

1. Native origin of the plant;

2. Known distribution;

3. Mechanism and potential for spread to and within Vermont;

4. Past, current and potential environmental, economic and human health impacts;

5. Feasibility of control and spread prevention;

6. Regional and national perspective;

7. Designation as a federal noxious weed; and / or

8. Other pertinent factors as determined by the committee.

(F) At the secretary's discretion, the noxious weeds recommended by the committee will be added to either the A or B list of prohibited species, rejected for addition, or sent back to the committee for further evaluation and review.

Section V: Prohibitions

(A) The movement, sale, possession, cultivation, and / or distribution of Class A Noxious Weeds designated in Appendix A of this rule is prohibited.

(B) The sale, movement, and / or distribution of Class B Noxious Weeds designated in Appendix A of this rule is prohibited.

(C) Violation of any of these prohibitions may result in:

1. The issuance of cease and desist orders; and / or,

2. Temporary or permanent injunctions; and / or,

3. Administrative penalties as specified in 6 V.S.A., Chapter 1, Section 15, and Chapter 84, Sections 1037 and 1038.

(D) Prohibitions on possession, cultivation, movement and distribution of plants addressed in V.S.A. titles other than Title 6 remain applicable.

Section VI: Variances and Exemptions

(A) A variance may be granted by the secretary to allow for the movement, possession and field experimentation of noxious weeds for scientific, educational, or other purposes under such conditions as may be prescribed by the secretary. Any variance(s) shall be in the form of a permit issued by the secretary.

(B) Transportation of any Class A or B Noxious weed on any road or highway of the state is exempt if:

1. For disposal as part of a management control activity; or

2. For the purpose of identifying a species or reporting the presence of a species, and the Class A or B Noxious weed is in a sealed container.

(C) Preserved specimens in the form of herbaria or other preservation means are exempt.

(D) Varieties, cultivars, hybrids and/or subspecies that have been shown through scientific research and analysis not to be invasive are exempt. Those cultivars and varieties so demonstrated as non-invasive are listed in the attached Appendix B.

(E) Except as described in (B) above, permits for movement and disposal of listed weeds and associated material (soil, debris, etc.) may be granted by the secretary for the purposes of weed control or infestation mitigation efforts after review of the proposed procedures and disposal site(s). In granting permits, specific consideration shall be made regarding the location of disposal and monitoring sites and whether the movement and disposal effort(s) accomplishes the general intent of reducing the overall impact of noxious weeds on the environment.

APPENDIX A: Designated Noxious Weeds

(A) Class A Noxious Weeds.

(1) *Cabomba caroliniana* (fanwort)
(2) *Egeria densa* (Brazalian elodea)
(3) *Hydrilla verticillata* (hydrilla)
(4) *Hygrophila polysperma* (east Indian hygrophila)
(5) *Myriophyllum aquaticum* (parrot feather)
(6) *Myriophyllum heterophyllum* (variable-leaved milfoil)
(7) *Salvinia auriculata* (giant salvinia)
(8) *Salvinia biloba* (giant salvinia)
(9) *Salvinia herzogii* (giant salvinia)
(10) *Salvinia molesta* (giant salvinia)
(11) *Vincetoxicum hirundinaria* (syn: *Cynanchum rossicum*) (pale swallow-wort)

(B) Class B Noxious Weeds.

(1) *Aegopodium podagraria* (goutweed/bishopsweed/snow-on-the-mountain)
(2) *Ailanthus altissima* (tree-of-heaven)
(3) *Alliaria petiolata* (*A. officinalis*) (garlic mustard)
(4) *Butomus umbellatus* (flowering rush)
(5) *Celastrus orbiculatus* (oriental bittersweet)
(6) *Fallopia japonica* (syn: *Polygonum cuspidatum*) (Japanese knotweed)
(7) *Hydrocharis morsus-ranae* (frogbit)
(8) *Lonicera x bella* (bell honeysuckle)
(9) *Lonicera japonica* (Japanese honeysuckle)
(10) *Lonicera maackii* (amur honeysuckle)
(11) *Lonicera morrowii* (Morrow honeysuckle)
(12) *Lonicera tatarica* (Tatarian honeysuckle)
(13) *Lythrum salicaria* (purple loosestrife)
(14) *Myriophyllum spicatum* (Eurasian watermilfoil)
(15) *Nymphoides peltata* (yellow floating heart)
(16) *Phragmites australis ssp. australis* (common reed)
(17) *Potamogeton crispus* (curly leaf pondweed)
(18) *Rhamnus cathartica* (common buckthorn)
(19) *Rhamnus frangula* (syn: *Frangula alnus*) (glossy buckthorn)
(20) *Trapa natans* (water chestnut)
(21) *Vincetoxicum nigrum* (syn: *Cynanchum louiseae)* (black swallow-wort)
(22) *Acer platanoides* (Norway maple)*
(23) *Berberis vulgaris* (common barberry)*
(24) *Berberis thunbergii* (Japanese barberry)*
(25) *Euonymous alatus* (burningbush)*
(26) *Iris pseudacorus* (yellow flag iris)*
(27) *Acer ginnala* (Amur maple)*
(28) *Najas minor* (European naiad)*
(29) All weeds listed in 7 C.F.R. 360.200 as amended, which is hereby incorporated by reference including subsequent amendments and editions.

*Specimens of these species acquired prior to the final filing of this rule may be sold or offered for sale until July 1, 2013.

APPENDIX B: Subspecies, Hybrids, Varieties and Cultivars Exempted Under Rule

(1) *Rhamnus frangula* (syn: *Frangula alnus)* “Asplenifolia”
(2*) Rhamnus frangula* (syn: *Frangula alnus)* “Fine Line”

Attachment – Authority and associated synonyms of listed plants

(A) Class A Noxious Weeds.

(1) ***Cabomba caroliniana*** Gray (Fanwort)
(2) ***Cynanchum rossicum*** (Kleopow) Borhidi (Syn: Vincetoxicum hirundinaria Medikus. (Pale swallowwort)
(3) ***Egeria densa*** Planch. (Brazilian elodea)
(4) ***Hydrilla verticillata*** (L.f.) Royle (Hydrilla)
(5) ***Hygrophila polysperma*** (Roxb.) T. Anderson (East Indian hygrophila)
(6) ***Myriophyllum aquaticum*** (Vell.) Verdc. (Parrot feather)
(7) ***Myriophyllum heterophyllum*** Michx (Variable-leaved milfoil)
(8) ***Salvinia auriculata*** Aublet (Giant salvinia/Eared water-moss)
(9) ***Salvinia biloba*** Raddi (Giant salvinia)
(10) ***Salvinia herzogii*** de la Sota (Giant salvinia)
(11) ***Salvinia molesta*** D.S. Mitchell (Giant salvinia/Kariba weed)

(B) Class B Noxious Weeds.

(1) ***Acer ginnala*** Maxim (Amur maple)
(2) ***Acer platanoides*** L. (Norway maple)
(3) ***Aegopodium podagraria*** L. (Goutweed/Bishopsweed/Snow-on-the-Mountain)
(4) ***Ailanthus altissima*** (Mill.) Swingle (Tree-of-Heaven)
(5) ***Alliaria petiolata*** (M. Bieb.) Cavara & Grande (Syn: ***Alliaria officinalis*** Andrz.) (Garlic mustard)
(6) ***Berberis thunbergii*** DC. (Japanese barberry)
(7) ***Berberis vulgaris*** L. (Common barberry)
(8) ***Butomus umbellatus*** L. (Flowering Rush)
(9) ***Celastrus orbiculatus*** Thunb. (Oriental bittersweet)
(10) ***Cynanchum louiseae*** Kartesz & Gandhi (Syn: ***Vincetoxicum nigrum*** (L.) Moench.) (Black swallowwort)
(11) ***Euonymus alatus*** (Thunb.) Siebold (Burningbush)
(12) ***Fallopia japonica*** (Houtt.) Ronse Decr. (Syn: ***Polygonum cuspidatum*** Siebold & Zucc.) (Japanese knotweed)
(13) ***Frangula alnus*** Mill., Gard. (Syn: ***Rhamnus frangula*** L.) (Glossy buckthorn)
(14) ***Hydrocharis morsus-ranae*** L. (Frogbit)
(15) ***Iris pseudacorus*** L. (Yellow flag iris)
(16) ***Lonicera* x *bella*** Zabel (Bell honeysuckle)
(17) ***Lonicera japonica*** Thunb. (Japanese honeysuckle)
(18) ***Lonicera maackii*** (Rupr.) Herder (Amur honeysuckle)
(19) ***Lonicera morrowii*** A. Gray (Morrow honeysuckle)
(20) ***Lonicera tatarica*** L. (Tartarian honeysuckle)
(21) ***Lythrum salicaria*** L. (Purple loosestrife)
(22) ***Myriophyllum spicatum*** L. (Eurasian watermilfoil)
(23) ***Najas minor*** All. (European naiad)
(24) ***Nymphoides peltata*** (S.G. Gmel.) Kuntze (Yellow floating heart)
(25) ***Phragmites australis* ssp.*australis*** (Cav.) Trin. *ex* Steud (Common reed)
(26) ***Potamogeton crispus*** L. (Curly leaf pondweed)
(27) ***Rhamnus cathartica*** L. (Common buckthorn)
(28) ***Trapa natans*** L. (Water chestnut)