

# TOWN OF NEW MILFORD



Town Hall  
10 Main Street  
New Milford, Connecticut 06776  
Telephone (860) 355-6083 • Fax (860) 210-2664

Office of Inland Wetlands Commission

September 18, 2017

Robert Stein, Chairman  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: PETITION NO. 1312 – Candlewood Solar, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 20 megawatt AC (26.5 megawatt DC) solar photovoltaic electric generating facility located on a 163 acre parcel at 197 Candlewood Mountain Road and associated electrical interconnection to Eversource Energy's Rocky River Substation on Kent Road in New Milford, CT

Dear Chairman Stein:

At the July 27, 2017 Regular Meeting of the New Milford Inland Wetlands and Watercourse Commission (Commission), a brief discussion of the above project and review of the project plans were conducted by members of the Commission. As a result of this discussion, the Wetlands Enforcement Officer was tasked with reviewing Petition 1312 and providing written comment to the Connecticut Siting Council with respect to wetland and watercourse concerns.

In 2007, the Commission reviewed and subsequently denied an application for a housing development on this site known as Dunham Farm. Many of the current Commission members were on the Commission at that time and spent numerous hours walking the property and discussing the proposal. As a result many of the Members have firsthand knowledge of the property, its topography, wetlands, watercourses, the vernal pool and vegetative habitats.

Wetlands staff and these Commission Members have reviewed the plans and information pertaining to Candlewood Solar, LLC's application. This letter will focus on the concerns associated with the solar project as they pertain to wetlands and watercourses. Below is a summary of the concerns and recommendations from the Commission with regard to Candlewood Solar, LLC's petition:

1. There are differences in the Wetlands Delineation as prepared by Pietras Environmental Group, LLC (included as Attachment A of the Environmental Assessment for Candlewood Solar dated May 18, 2017) and the soils report accepted by the Wetlands Commission with the Dunham Farm residential project, prepared by ESM Associates Inc., dated January 2007 and revised to April 2007 to include a vernal pool wetland system. Minor discrepancies in the field delineation of the wetland area can be considered professional discretion in placement of the flags.

Of specific concern are the two small side hill seep areas and an intermittent watercourse that were delineated in the 2007 Wetlands Report (in the vicinity of wetland III of the Pietras report) which were not determined to be wetlands by Pietras. All three of these areas are within the solar field array or clearing area for the project. The intermittent watercourse is evident in the contours and clearly visible on the solar project plans. The Pietras report specifically addresses why, in their professional opinion, these areas are not determined to be wetlands or watercourses.

The Commission is not requesting a re-delineation of the wetlands and watercourses as both reports provide documentation of the Soil Scientist's professional opinion, but rather that the design of the project takes into account, both in the stormwater management system and the erosion control plans, that this section of the property has shallow groundwater that seasonally discharges to the surface or on occasion flows overland in defined channels. It is these areas that both during and post construction can cause significant sedimentation or erosion control impacts.

The Commission recommends that the stormwater management system and sedimentation and erosion control plans take into consideration that the acreage to be cleared in the area around wetland III will have surficial runoff and groundwater discharge during portions of the year which should be specifically addressed in the final plans.

2. The Commission has concerns about impacts to wetlands and watercourses which in their opinion are likely to occur with the implementation and operation of this project. The deforestation and stump removal of 68 acres of mature secondary woodland growth, coupled with the regrading and disturbance of 16 acres of pasture land, presents a significant potential to impact wetlands and watercourses. Direct impacts are not the only impacts that result when alterations occur within the watershed. The limit of work is within 10 feet of both wetland systems I and III. Light intrusion due to deforestation, thermal impacts to runoff, alteration of water flow patterns to the wetland and watercourses, and sedimentation and chemical composition within stormwater discharge have not been specifically addressed.

The Commission recommends that these particular points be formally addressed and modification made to the plans to prevent any direct or indirect impact to wetland and watercourse systems on the property. The clearing edge to the wetland system should be significantly greater than the 10 feet shown and the stormwater management system and discharge points should be further away from wetlands and watercourses. This will allow for greater stormwater infiltration and dispersion, proper shading for wetland species accustomed to the current light condition, and reduction in potential thermal and chemical impacts.

3. The petition indicates that conduits for electrical connections are proposed. It is unclear of the location and amount of conduit that is necessary to complete the project. The Commission recommends that the Petitioner provide the following information a) location of

pipng and whether it is attached to the super structure of the solar panels or buried; b) if buried, the trenching requirements and location of the conduits; and c) amount and type of back fill required for the conduit.

4. The Commission is concerned that the project phasing plan is not realistic in particular Phase 2, the clearing of the site. The clearing is proposed to be done in increments of less than five acres to a single point discharge area at any given time to meet a five acre threshold of clearing. The plan proposes diverting water flows and implementing drainage sub basins to clear the entire 68 acres of woodland and modify the 16 acres of pasture as one entity. In addition the clearing, grubbing and final grading and stabilization is to take place during the winter months when seeding and stabilization of exposed soils are difficult.

The Commission recommends that a detailed phasing or sub-phasing plan of tree clearing, stumping, grading and stabilization of soils within the seasonal time frames for site restoration be followed.

5. The stormwater management plan for the project proposes diverting water from entering the site or discharging from the site by creating a swale around the project area with approximately 14 discharge locations from the swale / infiltration system. The swale system proposed is a collection system for surface water runoff that surrounds the development area at the periphery of the project. The Commission is concerned that this type of stormwater management system diverts all surface flow, starving portions of the wetland system from existing water flow patterns and surcharging other portions of the wetlands at the outlets.

The Commission recommends that the stormwater management system be revised and peer reviewed to minimize impacts to wetlands and watercourse systems. Sub drainage areas may be required to minimize stormwater impacts to drainage patterns, wetlands and watercourses.

6. In reviewing the pre and post CN numbers imported into the 2011 HydroCAD software Solutions LLC computer modeling program, the numbers indicate that the post-construction runoff will be less than the pre-construction runoff. See attached Pre-development and Post-development CN determination pages for reference.

The pre-development condition lists 8 categories of land use and associated acreage. In contrast the post-development condition lists 5 categories with associated acreage. One of the categories is combined as "unconnected outcrop" keeping it within the same drainage classification. Three categories, "pasture/grassland /range poor", "gravel road surface" and "gravel surface" are eliminated in the post development calculation. However, the plans show increased gravel access roads that are not reflected in the stormwater management plans. Implementing an inaccurate CN number into the computer calculation may void the end result of the computer analysis.

The applicant takes no diminished infiltration capacity in its CN number and has determined the bulk of the disturbed project land "meadow - non grazed" while having thousands of

impervious panels mounted over the ground surface. Each panel will redirect stormwater to the edge preventing direct rainfall to a portion of the ground thus eliminating direct infiltration and relying on lateral absorption and overflow infiltration to absorb stormwater runoff.

The Commission recommends that the stormwater calculations and subsequent stormwater management report and plans be redone to take into account the increases in gravel roadway and installation of the solar panels on the property.

7. The stormwater management system is designed at the perimeter of the project and has no features incorporated within the solar array area. Precipitation will fall on solar panels, gravel roads and open meadow areas. The drip edge of each panel will shed more concentrated flows to the ground surface. The linear array of panels creates a long drip edge concentrating flows that are perpendicular to the slope which could create a channel and potential erosion problem within the solar array area.

The Commission recommends that the stormwater management system address drip edge erosion and long slope erosion potential. The implementation of small flat terraces running parallel to the slope or utilizing stone to create a stone wall running parallel to the slope, all under the solar panels, will dissipate and infiltrate some stormwater flow within the solar array.

8. The Commission is concerned that the use of the perimeter stormwater catchment area and infiltration basins creates a cascading effect from one infiltration/detention basin to the next. In a significant rain storm the basins will infiltrate and drain by both the piped drainage system and overtopping of the system possibly creating a failure at the bottom of each system.

It is recommended that the stormwater management system be redesigned into sub-management systems that act on an independent basis and reduce diverting water flows, better mimicking the existing water flow pattern on the property.

9. The lack of detail provided with regard to sedimentation and erosion control and stormwater management both during and after construction is a concern of the Commission. It is recommended that the applicant redesign the stormwater management system and have a peer review process for final approval of the plans. During construction a third party sedimentation and erosion control specialist should be hired by the applicant to provide weekly inspection reports to the Siting Council, State DEEP offices and the Town of New Milford during construction and promptly correct any problems noted. Once construction is complete, the Commission also recommends requiring that a Connecticut licensed professional engineer provide written certification that the stormwater management plan was installed in accordance with the approved plans.

The Commission respectfully recommends that the following additional information and/or stipulations of approval be considered:

1. Provide a more detailed stormwater management plan that implements stormwater management within the solar array and works to maintain the existing flow patterns to wetlands and watercourses. It is recommended that this plan be peer reviewed.
2. Increase the wooded buffer along the edge of wetlands and watercourses to a minimum of 50 feet. An additional 25 feet of meadow filter strip should be added from any discharge point of a stormwater management system.
3. A third party sedimentation and erosion control specialist should provide weekly inspection reports during construction. Once construction is complete, the Commission also recommends requiring the applicant to provide written certification from a Connecticut licensed professional engineer that the stormwater management system was installed in accordance with the approved plans.

Should you have any questions please contact the Wetlands Office at (860) 355-6083 or [wetlands@newmilford.org](mailto:wetlands@newmilford.org)

Sincerely,

*Cathy Setterlin, Vice Chair*

Cathy Setterlin, Vice Chairwoman, signing on behalf of herself and the following members of the New Milford Inland Wetland and Watercourse Commission:

Stephen Boston, Chairman

Daniel Keuper, Secretary

Kathleen Nelson, Member

Jim Anderson, Member

Scott Leddy, Member

Adrienne Aurichio, Member

Thomas Lappala, Alternate

Angela Dimmitt, Alternate

Enclosure: 2011 HydroCAD Software Solutions LLC. New Milford Pre Development Page 2,  
2011 HydroCAD Software Solutions LLC. New Milford Post Development Page 2

Copy Melanie A. Bachman, Executive Director, Connecticut Siting Council

# New Milford Pre-Development

Prepared by AMECFW

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Page 2

## Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
62.135	70	Woods, Good, HSG C (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S)
2.273	74	Pasture/grassland/range, Good, HSG C (7S)
8.723	77	Woods, Good, HSG D (1S, 2S, 7S)
10.179	86	Pasture/grassland/range, Poor, HSG C (6S, 8S, 9S, 10S)
0.046	96	Gravel Road surface, HSG C (10S)
0.574	96	Gravel surface, HSG C (7S)
2.036	98	Unconnected Outcrop, HSG C (7S, 9S)
3.799	98	Unconnected Outcrop, HSG D (1S, 2S, 6S, 8S, 9S)
<b>89.764</b>	<b>75</b>	<b>TOTAL AREA</b>

# New Milford Post-Development

Prepared by AMECFW

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Page 2

## Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.337	70	Woods, Good, HSG C (7AS, 7BS, 7CS, 7DS)
70.206	71	Meadow, non-grazed, HSG C (1AS, 1BS, 1CS, 2BS, 2CS, 3AS, 3BS, 4AS, 4BS, 5AS, 5BS, 6AS, 6BS, 7AS, 7BS, 7CS, 7DS, 8AS, 8BS, 8CS, 9AS, 9BS, 10S)
10.555	78	Meadow, non-grazed, HSG D (1AS, 1BS, 1CS, 2AS, 2BS, 2CS, 6AS, 6BS, 8AS, 8BS, 8CS, 9AS, 9BS)
1.722	80	Pasture/grassland/range, Good, HSG D (7AS, 7DS)
4.943	98	Unconnected Outcrop, HSG D (1AS, 1BS, 1CS, 2AS, 2BS, 2CS, 6BS, 7AS, 7BS, 7CS, 8BS, 8CS, 9AS, 9BS)
<b>89.764</b>	<b>73</b>	<b>TOTAL AREA</b>