



TOWN OF MILFORD, NH  
OFFICE OF COMMUNITY DEVELOPMENT

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**STAFF MEMO**

**Date: December 13, 2021**

**To: Board of Adjustment**

**From: Lincoln Daley, Community Development Director**

**Subject: Amendments to Zoning Ordinance Article VII – Section 7.11 Solar Collection Systems**

The purpose of this memorandum is to discuss amendments to the Milford Zoning Ordinance by amending Article VII, Section 7.11 Solar Collection Systems by modifying the definition of Residential Solar collection system, clarifying submittal requirements as part of Conditional Use Permit review, and amending locational requirements for solar collection systems larger than 750 sf within the Residential ‘A’, ‘B’, ‘R’ zoning districts. The proposed modifications seek to increase the maximum size permitted for residential ground mounted units permitted by the Zoning Ordinance to more accurately reflect industry standards regarding size, reduce the regulatory/administrative burden on property owners/applicants, and mitigate potential visual impacts on abutting properties.

The proposed amendments were introduced and discussed at the November 2<sup>nd</sup>, November 30<sup>th</sup>, and December 7<sup>th</sup> Planning Board Work Session. At those meetings, the Planning Board discussed the appropriate minimum square foot area for a ground mounted solar collection system and eliminating the reference/requirement for maximum kW output for said systems. Staff has incorporated the comments and updated the draft amendments for review and consideration by the Board.

## **PLANNING BOARD AMENDMENT 4: SOLAR COLLECTION SYSTEMS**

### **Are you in favor of adopting the following amendment to the Town of Milford Zoning Ordinance as proposed by the Planning Board?**

To see if the Town will amend the Milford Zoning Ordinance, Article VII, Section 7.11 Solar Collection system by deleting the stricken text and adding the underlined language to read as follows:

#### **7.11.0 SOLAR COLLECTION SYSTEMS**

##### **7.11.1 Authority**

This solar collection system ordinance is enacted in accordance with RSA 674:17(I)(j) and the purposes outlined in RSA 672:1-III-a as amended.

##### **7.11.2 Purpose and Intent**

The purpose of this ordinance is to accommodate solar energy collection systems and distributed generation resources in appropriate locations, while protecting the public's health, safety and welfare, and the environment. The Town intends to facilitate the State and National goals of developing clean, safe, renewable energy resources in accordance with the enumerated polices of NH RSA 374-G and 362-F that include national security and economic and environmental sustainability.

##### **7.11.3 Definitions**

**Agriculture Solar - Accessory:** Any ground-mounted or roof-mounted solar collection system designed to primarily reduce on-site consumption of utility power and without a limit to the rated nameplate capacity or solar land coverage provided the existing agricultural use is preserved at the time of installation.

**Agriculture Solar - Primary:** Any ground-mounted solar collection system that is partially used to reduce on-site consumption of utility power and with a rated nameplate capacity up to 1 MW AC in size or has a solar land coverage in excess of 5 acres provided the existing agricultural use is preserved at the time of installation.

**Carport Mount:** Any solar collection system of any size that is installed on the roof structure of a carport over a parking area.

**Commercial Solar:** A use of land that consists of one or more free-standing, ground-mounted solar collection systems , with a rated nameplate capacity of up to 1 MW AC and that is less than 5 acres in solar land coverage.

**Community Solar:** A use of land that consists of one or more free-standing, ground-mounted solar collection systems regardless of nameplate capacity that is up to 100 kW AC and that is less than 1 acre of solar land coverage.

**Ground Mount:** A solar collection system and associated mounting hardware that is affixed to or placed upon (such as ballasted systems) the ground including but not limited to fixed, passive or active tracking racking systems.

**Industrial Solar:** A use of land that consists of one or more free-standing, ground-mounted solar collection systems regardless of nameplate capacity that is between 25 acres and 50 acres in solar land coverage.

**Large Commercial Solar:** A use of land that consists of one or more free-standing, ground-mounted solar collection systems with a rated nameplate capacity of between 1 MW and 5 MW that is between 5 and 25 acres in solar land coverage.

**Rated Nameplate Capacity:** Maximum rated alternating current (“AC”) output of solar collection system based on the design output of the solar system.

**Residential Solar:** Any ground-mounted or roof-mounted solar collection system primarily for on-site residential use, and consisting of one or more free-standing, ground or roof-mounted, solar arrays or modules, or solar related equipment, intended to primarily reduce on-site consumption of utility power. ~~and with a rated nameplate capacity of 10 kW AC or less and that is less than 500 square feet solar land coverage.~~

**Roof Mount:** A solar collection system that is structurally mounted to the roof of a building or other permitted structure, including limited accessory equipment associated with a system which may be ground-mounted. For purposes of calculating array sizes or solar land coverage under the solar definitions in this section, roof-mounted portions shall not be included if the system is made up of both roof and ground-mounted systems, the roof-mounted portions shall also be excluded.

**Solar Array:** A grouping of multiple solar modules with purpose of harvesting solar energy.

**Solar Cell:** The smallest basic solar electric device which generates electricity when exposed to light.

**Solar Collection System:** Includes all equipment required to harvest solar energy to generate electricity. The Solar Collection System includes storage devices, power conditioning equipment, transfer equipment, and parts related to the functioning of those items. Solar Collection Systems include only equipment up to (but not including) the stage that connection is made to the utility grid or site service point.

**Solar Glare:** The potential for solar panels to reflect sunlight, with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

**Solar Land Coverage:** Defined exclusively for the purposes of calculating the footprint of the land area occupied by the components of a solar array. The Solar Land Coverage is the land area that encompasses all components of the solar collection system including, but not limited to mounting equipment, panels and ancillary components of the system. This definition does not include access roads or fencing and is not to be interpreted as a measurement of impervious surface as it may be defined in this ordinance.

**Solar Module:** A grouping of solar cells with the purpose of harvesting solar energy.

**Solar Power Generation Station:** Any solar collection system that is over 30 MW in nameplate capacity. In no case shall a Solar Power Generation Station exceed 150 acres.

**Utility Solar:** A use of land that consists of one or more free-standing, ground-mounted solar collection systems regardless of nameplate capacity that is over 50 acres in solar land coverage and less than 30 MW in rated nameplate capacity.

#### 7.11.4 District Regulations

A. Table of Uses:

	Zoning District				
	Residential R	Residential A, B	Commercial / Limited Commercial	ICI	ICI2 / Industrial
Residential Solar	P, <u>CUP</u>	P, <u>CUP</u>	P	P	P
Community Solar	P	X	P	P	P

Accessory Agricultural Solar	P	X	P	P	P
Primary Agricultural Solar	CUP	X	P	P	P
Commercial Solar	CUP	X	X	CUP	CUP
Large Commercial Solar	CUP	X	X	CUP	CUP
Industrial Solar	X	X	X	CUP	CUP
Utility Solar	X	X	X	X	CUP
Solar Power Generation Station	X	X	X	X	CUP

- P = Use permitted by right with building and electrical permit.
- CUP = Use permitted by Conditional Use Permit.
- X = Use prohibited.

B. Specific Solar Collection System Requirements and Exemptions:

1. Ground mounted Residential Solar collection systems over seven-hundred fifty (750) cumulative square feet within the Residential ‘R’, ‘A’, and ‘B’ Zoning Districts will require a Conditional Use Permit.
2. A ground-mounted Accessory Residential Solar system over 15 feet in height at any point or larger than seven-hundred fifty (750) square feet shall be located in the rear yard between the primary structure and the rear lot line. All other ground-mounted solar collection systems located in the front yard shall be reasonably screened from abutting residential properties.
3. Non-residential Carport Mounted solar collection systems over parking areas are permitted in all zones without a Conditional Use Permit. A site plan review shall be required in accordance with the Town Development Regulations.
4. Roof-mounted solar collection systems of any size are permitted in all zones without a Conditional Use Permit except within the Oval District Overlay.
5. Municipal Systems: All solar collection systems for municipal use are exempt from land use regulations pursuant to NH RSA 674:54.

C. Additional Provisions Regarding Solar Collection Systems:

1. Building Height: Roof-mounted solar collection systems shall be exempt from building height limitations.
2. Solar Land Coverage: Ground-mounted solar collection systems shall not exceed 70% of the total lot area. The ground-mounted solar collection system shall not be considered impervious surface. Impervious surface limitations as related to stormwater management for solar collection systems shall be addressed in accordance with this Ordinance and the Milford Stormwater Management And Erosion Control Regulations.

**7.11.5 Solar Collection Systems Conditional Use Permits**

- A. Permit Required: No solar collection system, except as authorized by Section 7.11.4 shall be erected, constructed, installed or modified without first receiving a Conditional Use Permit (CUP) from the Planning

Board pursuant to Section 7.14.0. The CUP shall clearly set forth all conditions of approval and shall list all plans, drawings and other submittals that are part of the approved use.

**B. Application and Review Procedure:**

1. An Application for a Conditional Use shall be initiated by filing with the Planning Board for an application for a Conditional Use Permit.
2. The applicant shall follow the requirements for specific uses as laid out in this Ordinance. The applicant shall submit an application in general accordance with the Minor Site Plan development regulations and shall include the following:
  - a. System Layout.
    - i. A detailed sketch or plan showing the installation area of the site and narrative demonstrating compliance with the requirements of the Zoning Ordinance.
    - ii. A detailed sketch of any land clearing or grading required for the installation and operation of the system.
    - iii. The location of all equipment to be installed on site including utility connection point(s) and equipment. To the maximum extent practical all wiring associated with the utility connection shall be underground.
    - iv. All equipment locations, except for utility connections, shall comply with the required setbacks.
    - v. An elevation drawing or picture of the system from the manufacturer of the proposed solar collection system.
  - b. Equipment Specification.
    - i. All proposed equipment or specifications must be included with the application.
    - ii. Such information can be supplied via manufacturer's specifications or through detailed description.
3. Applicable Site Plan Review Regulations. The specific requirements for a Conditional Use Permit shall pre-empt any similar requirement in the Development Regulations.

**C. Standards of Review:**

Following a fully noticed public hearing on the proposed use, the Planning Board may issue a Conditional Use Permit, if it finds, based on the information and testimony submitted with respect to the application, that:

1. The use is specifically authorized by Section 7.11.4 as a conditional use.
2. The development in its proposed location will comply with Section 7.14.0 and with all applicable requirements of the Development Regulations not otherwise covered in this section.
3. The use will not materially endanger the public health or safety;
4. Required screening and visual mitigation shall be maintained during the operative lifetime of the Solar Collection System Conditional Use Permit.
5. In granting a conditional use permit pursuant to this section, the Planning Board may impose any reasonable conditions or restrictions deemed necessary to carry out the intended purpose of this ordinance.

**7.11.6 Standards**

A. The Planning Board shall evaluate the application for compliance with the following standards:

1. Setbacks.

Solar collection systems shall be considered structures and shall comply with dimensional setback requirements from lot lines for the entire system – including the panels. Tracking systems shall have the setback measured from the point and time where the array is closest to the lot line. No portion of a system may cross into the setback.

2. Natural Resource Impacts and Buffers.

a. Solar collection systems shall be visually screened through the preservation of existing vegetation or through a landscaped buffer in accordance with the following:

i. Plan: The buffering plan shall indicate the location, height and spacing of existing vegetation to be preserved and areas where new planting will be required.

ii. All solar collection systems shall have a reasonable visual buffer as required in the Development Regulations from public ways and neighboring commercial/residential uses based on the viewsheds, contours of the land, and abutting land uses.

iii. Areas that are within the view shed of significant value as identified in the Master Plan shall include additional reasonable mechanisms to mitigate a continuous and uninterrupted view of the system.

b. Fencing shall be installed, if required, by the electric code or the utility. Additional security or fencing may be required if the location of the system presents a safety concern for abutting land uses.

c. Primary Agriculture Solar should minimize impacts to farmland activities and Prime Farmland Soils (as defined and delineated by soil survey and definition of NH NRCS). Dual use arrangements (solar and farming activities are encouraged where practical).

d. Land Clearing.

i. Land clearing shall be limited to what is necessary for the installation and operation of the system and to insure sufficient all-season access to the solar resource given the topography of the land.

ii. Following construction, cleared land areas must be restored with native species that are consistent with the use of the site as a solar collection system (such as slow growth or low ground cover).

iii. Erosion control measures during construction shall be detailed as required by the Milford Development Regulations and the Town's Stormwater Management and Erosion Control Ordinance.

e. Additional Requirements for Industrial, Utility, and Solar Power Generation Station (I/U/SPGS) Solar:

i. A detailed pre-construction and post-construction plan identifying existing vegetation and areas to be cleared with specific identification of locations of buffer areas adjacent to neighboring uses and public ways.

ii. The Planning Board, with input from the Conservation Commission, may require the applicant to submit an 'Environmental Study' in accordance with the Milford Development Regulations, Section 5.011 Environmental Study. Efforts and practices that can provide for a dual use of the site should be explored if feasible and encouraged where appropriate.

iii. The applicant shall demonstrate effective stormwater infiltration along with erosion control measures and soil stabilization.

3. Buffer Plan.

As deemed appropriate, all applications shall submit a detailed buffering plan demonstrating how the proposed ground-mounted solar installation will be incorporated into the local landscape so that effective screening is provided along public ways and from abutting views. The use of existing or created topography is encouraged to reduce visual impacts.

4. Stormwater.

a. Stormwater and Erosion Control Permits

- i. Ground-mounted systems that are required to obtain a New Hampshire Department of Environmental Services (NH DES) Alteration of Terrain (AoT) Permit in accordance with NH RSA 485:17 shall secure such permit accordingly.
- ii. A Municipal Stormwater Permit and Stormwater Management and Erosion Control Plan (SWMP) shall be provided when required by and in conformance with the requirements of the Town of Milford's Stormwater Management and Erosion Control Regulation.
- iii. The final Permits issued by NH DES and Town shall be incorporated by reference into the final Town approval and shall be enforceable by the Town in accordance with this zoning ordinance.

b. The stormwater management plan shall include the following.

- i. The stormwater study shall take into account the nature of the solar panel installation and how the spacing, slope and row separate can enhance infiltration of stormwater. Percolation tests or site specific soil information may be provided to demonstrate recharge can be achieved without engineered solutions.
- ii. Additional information, if required, shall calculate potential for concentrated flows of runoff due to the panels, slope, soil type and the impacts of other regulated impervious areas (such as equipment pads and roadways).

c. Required for all systems:

- i. All ground-mounted systems shall be constructed in accordance with Best Management Practices for erosion and sedimentation control during the pre-construction, construction and post-construction restoration period.
- ii. Post construction: For purposes of enhancing natural stormwater management, site conditions and plantings post-construction shall insure that areas of soil compaction have been restored to natural conditions. Plantings shall be native species and are recommended to beneficial habitat to song birds, pollinators and/or foraging species in order to maintain a healthy surface and subsurface habitat that can attenuate stormwater on the site.

5. Emergency Response.

- a. Access to the site for emergency response shall be provided and detailed on the plan.
- b. A narrative or manual for municipal Fire Department detailing response guidance and disconnection locations necessary for fire response.
- c. Additional industry guidance documents that provide information about safety procedures for specific equipment on site shall be provided as needed to insure adequate public safety.
- d. Contact information for the solar collection system owner/operator shall be posted on site at the access way and provided and updated to the municipality.

6. Glare.

- a. A statement detailing potential significant glare onto abutting structures and roadways estimating the interaction of sun to panel angle, time of year and visibility locations.
- b. Based on the above information, the Planning Board may require reasonable mitigation. Mitigation may include angle of panels, details on the anti-reflective nature of the panel coating or any additional specific screening to minimize resulting impacts.
- c. Mitigation through anti-reflective coatings shall have an index of refraction equal to or less than 1.30.

7. Noise.

- a. Estimates of any equipment noise on the site based on equipment specification materials (such as inverters).
- b. Noise levels at the property line shall be in accordance with the Town noise ordinance or at reasonable levels given the location of the facility with due consideration to the surrounding land uses and zone.

8. Lighting.

- a. On site lighting shall be minimal and limited to access and safety requirements only.
- b. All lighting shall be downcast and shielded from abutting properties.

B. General Requirements.

1. All Solar Collection Systems shall conform to applicable state and federal laws and regulations and local ordinances, including the State Building Code, the State Electrical Code and the State Fire Code.
2. All systems not connected to the grid shall be approved by the electrical inspector or Building Inspector, as required.
3. Transmission Lines Underground: All power transmission lines from a Ground-mounted Solar Energy System to any building or other structure shall be located underground and/or in accordance with the State Building Code or Electrical Code, as appropriate.
4. Grid-tied systems shall file a copy of a final approved interconnection with the municipality prior to operation of the system.
5. All roof-mounted and ground-mounted Solar Collection System require permits.
  - a. Electrical permits are required.
  - b. Plumbing permits may be required.
  - c. Building permits may be required.
  - d. Engineer stamped letter certifying that the roof can accommodate the load may be required.

**7.11.7 Abatement and Decommissioning/Removal**

Solar Collection Systems shall be deemed to be abandoned if operations have discontinued for more than 6 months without written consent of the Town (such as for reasons beyond the control of the owner/operator). An abandoned system shall be removed and the site restored within 6 months of abandonment.

**7.11.8 Violation**

It is unlawful for any person to construct, install or operate a Solar Collection System that is not in compliance with this Ordinance. Solar Collection Systems installed prior to adoption of this Ordinance are exempt from this



Ordinance except or until such time as modifications are proposed to the Solar Collection System. If the owner fails to remove the abandoned Solar Collection System within the 6 months, the Town may pursue a legal action to have the system removed at the owner's expense.

#### **7.11.9 Penalties**

Any person who fails to comply with any provision of this Ordinance or a building permit issued pursuant to this Ordinance shall be subject to enforcement and penalties as allowed by NH Revised Statutes Annotated Chapter 676:17.

#### **7.11.10 Severability**

If any section, phrase, sentence or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions thereof.