

## **Article XXIII**

### **Large-Scale Ground-Mounted Solar Photovoltaic Installations**

Adopted: January 14, 2011  
Draft Amendment: March 29, 2017  
Revisions to Amendment: April 24, 2017  
Amendments Adopted: July 10, 2017

§171-126 – Large-Scale Ground-Mounted Solar Photovoltaic Installations

<b>1.0 Purpose</b>
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The purpose of this ordinance is to promote the creation of new large-scale ground-mounted solar photovoltaic installations by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on scenic, natural and historic resources and to provide adequate financial assurance for the eventual decommissioning of such installations.

The provisions set forth in this section shall apply to the construction, operation, and/or repair of large-scale ground-mounted solar photovoltaic installations.

Large-Scale Ground-Mounted Solar Photovoltaic Installations shall be subject to site plan review as specified in section 171.29 of the Town of Palmer Zoning Ordinance, and in accordance with the additional requirements specified herein.

#### **1.1 Applicability**

This section applies to large-scale ground-mounted solar photovoltaic installations constructed after the effective date of this section. This section also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment throughout the useful life of the system or where alterations may impact abutters.

#### **1.2 Zoning Protection for Approved Projects**

Amendments to section 171.126 shall not apply to any Large-scale Ground Mounted Photovoltaic Installations that receive Site Plan Approval from the Planning Board prior to April 6, 2017.

<b>2.0 Definitions</b>
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**Large-Scale Ground-Mounted Solar Photovoltaic Installation:** A solar photovoltaic system that is structurally mounted on the ground and is not roof-mounted, and has a minimum nameplate capacity of 250 kW DC.

**On-Site Solar Photovoltaic Installation:** A solar photovoltaic installation that is constructed at a location where other uses of the underlying property occur.

**Rated Nameplate Capacity:** The maximum rated output of electric power production of the Photovoltaic system in Direct Current (DC).

**Solar Photovoltaic Array:** an arrangement of solar photovoltaic panels.

Ancillary Use: A use which is customarily incidental, subordinate to, and supporting of the principal use of a lot or structure and is located on the same parcel or contiguous parcels as the principal structure or use. In conjunction with Article XXIII, Section 171.126, Section 3.0, Large-Scale Photovoltaic Installations may be rooftop installations or solar parking canopy installations over parking lots or other hardscaped areas. Solar Parking Canopies shall meet, at a minimum, all dimensional requirements as shown in 171-35 – Table of Dimensional and Density Regulations. Roof-mounted shall be within the perimeter of the roof outline.

Solar Parking Canopy: An elevated structure that hosts solar panels installed over parking lots or other hardscape areas. Also may be called a solar carport installation.

### 3.0 General Siting Standards

#### 3.1 Lot Requirements

Large-Scale Ground-Mounted Solar Photovoltaic Installations shall be permitted on parcels larger than 5 acres located within the Rural Residential district and within the General Business district on parcels larger than 30 acres. Installations within the Industrial A, B, and Urban Renewal Industrial Park District and within the Highway Business and General Business districts shall be an ancillary use to an allowable use, only.

#### 3.2 Site Control

The project proponent shall submit documentation of actual or prospective access and control of the project site sufficient to allow for construction and operation of the proposed solar photovoltaic installation.

#### 3.3 Project Area

The project area shall be that area of land used for the installation of the solar panels, appurtenant structures and interior access ways. This area shall be enclosed in its entirety by a perimeter fence.

#### 3.4 Setbacks

For large-scale, ground-mounted solar photovoltaic installations the project area shall be setback a minimum of 100 feet from all property boundaries.

#### 3.5 Vegetated Buffer

A minimum 100' vegetated buffer shall encompass the project area. This area shall meet all applicable requirements of Article XVI. This buffer shall not be managed, maintained, trimmed or be subject to selective removal for purposes of additional solar gain.

### **3.6 Balanced Site**

No earth material shall be removed from the site. All cuts and fills of earth material shall be balanced.

### **3.7 Open Space Requirement:**

1. For all projects, a minimum area equal to the total project area must remain as natural open space for the life of the project. This land must be on the same lot and contiguous in area.
2. Watercourses, lakes, ponds, wetlands may not be included in open space calculations.
3. The vegetated buffer may be included in the open space calculation

<b>4 Permit Process, Requirements &amp; Enforcement</b>
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### **4.3 Site Plan Review**

Ground-mounted large scale solar photovoltaic installations with 250 kW or larger of rated nameplate capacity shall undergo site plan review by the Planning Board prior to construction, installation or modification as provided in this section.

#### **4.2.1 Required Documents**

Pursuant to the site plan review process, the project proponent shall provide the following documents:

- (a) A site plan prepared, stamped and signed by a Professional Engineer licensed to practice in Massachusetts showing the following:
  - i. Property lines and physical features, including roads, for the project site;
  - ii. Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;
  - iii. Blueprints or drawings of the solar photovoltaic installation signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system and any potential shading from nearby structures
  - iv. One or three line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices;
  - v. Documentation of the major system components to be used, including the PV panels, mounting system, and inverter;
  - vi. Name, address, and contact information for proposed system installer;
  - vii. Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;

- viii.** The name, contact information and signature of any agents representing the project proponent; and
- (b)** Documentation of actual or prospective access and control of the project site;
- (c)** An operation and maintenance plan (see also Section 6.6);
- (d)** Zoning district designation for the parcel(s) of land comprising the project site;
- (e)** Proof of liability insurance;
- (f)** Description of financial surety that satisfies Section 6.3
- (g)** Any portion of section 4.0 may be waived, if in the opinion of the Planning Board the materials submitted are sufficient for the Board to make a decision.
- (h)** All material modifications to a solar photovoltaic installation made after final approval shall require approval by the Planning Board.

## **5.0 Design Standards**

### **5.1 Lighting**

Lighting of solar photovoltaic installations shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar photovoltaic installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

### **5.2 Signs and Advertising**

Signs on large-scale, ground-mounted solar photovoltaic installations shall comply with Article XVII, § 171.94 of the Town of Palmer's Zoning Ordinance. A sign consistent with this section shall be required to identify the owner and provide a 24-hour emergency contact phone number. Solar photovoltaic installations shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar photovoltaic installation.

### **5.3 Utility Connections**

Reasonable efforts, as determined by the Planning Board, shall be made to place all utility connections from the solar photovoltaic installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

### **5.4 Land Clearing, Soil Erosion and Habitat Impacts**

Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the large-scale, ground-mounted solar photovoltaic installation or otherwise prescribed by applicable laws, regulations, and bylaws.

### **5.5 Facility Access and Conditions**

The large-scale, ground-mounted solar photovoltaic installation owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to the local Fire Chief and Emergency Medical Services. The owner or operator shall be responsible for the cost of maintaining the solar photovoltaic installation and any access road(s), unless accepted as a public way.

### **5.6 Appurtenant Structures**

All appurtenant structures to large-scale, ground-mounted solar photovoltaic installations shall be subject to reasonable regulations concerning the bulk and height of structures, lot area, setbacks, open space, parking and building coverage requirements. All such appurtenant structures, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other. Whenever reasonable, structures should be shaded from view by vegetation and/or joined or clustered to avoid adverse visual impacts.

## **6.0 Additional Provisions**

### **6.1 Abandonment**

Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar photovoltaic installation shall be considered abandoned when it fails to operate for more than one year without the written consent of the Planning Board. If the owner or operator of the large-scale, ground-mounted solar photovoltaic installation fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the town may enter the property and physically remove the installation.

### **6.2 Removal Requirements**

Any large-scale, ground-mounted solar photovoltaic installation, which has reached the end of its useful life or has been abandoned consistent with Section 6.1 of this ordinance, shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the Planning Board by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

- (a) Physical removal of all large-scale ground-mounted solar photovoltaic installations, structures, equipment, security barriers and transmission lines from the site.
- (b) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.
- (c) Stabilization or re-vegetation of the site as necessary to minimize erosion. The Planning Board may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

### **6.3 Financial Surety**

Proponents of large-scale, ground-mounted solar photovoltaic projects shall provide a form of surety, either through escrow account, bond or otherwise, to cover the cost of removal in the event the town must remove the installation and remediate the landscape, in an amount and form determined to be reasonable by the Planning Board, but in no event to exceed more than 125 percent of the cost of removal and compliance with the additional requirements set forth herein, as determined by the project proponent. Such surety will not be required for municipally- or state-owned facilities. The project proponent shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation.

### **6.4 Compliance with Laws, Ordinances and Regulations**

The construction and operation of all large-scale solar photovoltaic installations shall be consistent with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, and communications requirements. All buildings and fixtures forming part of a solar photovoltaic installation shall be constructed in accordance with the State Building Code.

### **6.5 Building Permit and Building Inspection**

No large scale solar photovoltaic installation shall be constructed, installed or modified as provided in this section without first obtaining a building permit.

### **6.6 Operation & Maintenance Plan**

The project proponent shall submit a plan for the operation and maintenance of the large-scale ground-mounted solar photovoltaic installation, which shall include measures for maintaining safe access to the installation, storm water controls, as well as general procedures for operational maintenance of the installation.

### **6.7 Utility Notification**

No large-scale, ground-mounted solar photovoltaic installation shall be constructed until evidence has been given to the Planning Board that the utility company that operates the electrical grid where the installation is to be located has been informed of the solar photovoltaic installation owner or operator's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.

### **6.8 Emergency Services**

The large-scale solar photovoltaic installation owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local fire chief. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar photovoltaic installation shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

