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Chapter 300
Zoning

Article 19
Ground Mounted Solar Photovoltaic Facilities Overlay District (PVOD)

[Added 4-28-2014ATM by Art. 34]

§ 300-19.1 **Purpose.**
The purpose of this Article 19 is to promote and regulate the use of commercial and municipal solar photovoltaic facilities within the Town of Medfield and encourage their location and use in a manner which minimizes negative visual and environmental impacts on scenic, natural and historic resources and to the residents of Medfield. The purpose is also to provide adequate financial assurance for the eventual decommissioning of such installations.

§ 300-19.2 **Applicability.**
This Article applies to large and medium-scale ground-mounted solar photovoltaic installations, including solar-parking canopies, proposed to be constructed after the effective date of this Article. This Article also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment. Large and medium- scale solar photovoltaic facilities include photovoltaic panels, mounting structures, transmission lines and any other equipment, or structure, including access ways or landscaping, used to support solar photovoltaic activities.

§ 300-19.3 **Definitions.**
As used in this Article, the following terms shall have the meanings indicated:

AS-OF-RIGHT SITING

As-of-right siting shall mean that development may proceed without the need for a special permit, variance, amendment, waiver, or other discretionary approval; as-of-right development shall be subject to site plan approval by the Planning Board pursuant to § 300-14.12.

DESIGNATED LOCATION

The locations permitted shall be within the large-scale ground-mounted solar photovoltaic overlay district, hereinafter referred to as "PVOD."

GROUND-MOUNTED SOLAR PHOTOVOLTAIC INSTALLATION

A solar photovoltaic system that is structurally mounted on the ground, including a parking canopy.

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.

MEDIUM-SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC ARRAY: An Solar Energy System that is equivalent to a rated nameplate capacity of between10 kW -250 kW DC and is structurally mounted on the ground.

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).

RELATED EQUIPMENT OR FACILITIES

Any equipment, building, structure, access way, landscaping or other means used to support the operation, or disguise the appearance, of a solar photovoltaic tower, antenna, or transmitting or receiving equipment of any kind.

SOLAR ENERGY SYSTEM: A device whose primary purpose is the collection, storage, and distribution of solar energy for space heating or cooling, electricity generation, or water heating.

SOLAR PARKING CANOPY SOLAR PHOTOVOLTAIC ARRAY : A special application of a Ground-mounted Solar Energy System that is installed on top of a functional parking surface (striped, in use) that maintains the function of the area beneath the canopy.

SOLAR PHOTOVOLTAIC ARRAY

An arrangement of solar photovoltaic panels that converts solar energy into electricity..

UTILITY

A system of wires or conductors and supporting structures that functions in the transmission of electrical energy or communication services (both audio and video) between generating stations, substations, and transmission lines.

§ 300-19.4 **Solar Photovoltaic Overlay District.**

In order to allow new large-scale and medium-scale ground-mounted solar photovoltaic installations, including solar parking canopies, to be located efficiently and in areas that will have the least visual and environmental impact, there is hereby created the following Solar Photovoltaic Overlay District (PVOD):

Solar Photovoltaic Overlay District - This district shall consist of the following land and parcels: All land and parcels within the boundaries of the Industrial Extensive (IE) and Business Industrial (BI) Zoning District shown on the Zoning Map and as described in Article 3 elsewhere in this Bylaw.

§ 300-19.5 **Scope of authority.**

The Solar Photovoltaic Facilities Overlay District (PVOD) shall be considered as overlying other use districts established by this Bylaw. Within the Solar Photovoltaic Installation Overlay District, the requirements of the underlying district continue to apply except as may be specifically superseded herein.

A. Allowed uses in the underlying zoning district(s). The following uses are allowed by right:

(1) All uses permissible and as regulated within the underlying district, including uses requiring site plan approval.

(2) A large-scale or medium-scale ground-mounted solar photovoltaic installation or solar parking canopy in Industrial Zone.

B. The following uses are allowed by special permit: A medium-scale solar parking canopy in Business Industrial zone.

C. Special permit allowed uses in the underlying zoning district. All uses permitted by special permit in the underlying district at that location may be allowed upon the issuance of a special permit by the designated special permit granting authority under such conditions as the Board may require.

§ 300-19.6 **Siting solar photovoltaic facilities.**

The establishment of large-scale ground-mounted solar photovoltaic installations, medium-scale ground mounted solar photovoltaic installations, and solar parking canopies shall be allowed by right in Industrial Zone and subject to site plan approval in accordance with § 300-14.12 and a building permit, provided that the following minimum requirements are met. Solar parking canopies shall be allowed by special permit in Business Industrial zones and are subject the site plan approval.

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

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

C. Utility notification. No ground-mounted solar photovoltaic installation shall be constructed until written confirmation 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's or operator's intent to install an interconnected customer-owned generator and its acceptance of the owner's or operator's request to connect to the grid. Off-grid systems shall be exempt from this requirement.

§ 300-19.7 **Dimension, density, and parking requirements.**

A. For large-scale solar photovoltaic installations, front, side and rear setbacks shall be as follows:

(1) Minimum lot area: 40,000 square feet.

(2) Minimum front setback: 50 feet.*

(3) Minimum side setback: 100 feet.*

(4) Minimum rear setback: 50 feet.*

(5) Maximum lot coverage: 90%.

(6) Lot width, lot depth, perfect square: none required.

(7) Height. Height shall be determined by each individual panel measured to the grade level beneath that panel and shall not exceed 18 feet from the preexisting natural grade.

(8) Parking requirement. No additional parking is required for this use as long as there is no full-time on-site system operator required following installation of the large-scale solar photovoltaic installation.

B. For medium-scale ground mounted solar photovoltaic installations, front, sides, and rear setbacks shall be as follows:

(1) Minimum lot area: XXX square feet.

(2) Minimum front setback: 25 feet.*

(3) Minimum side setback: 20 feet.*

(4) Minimum rear setback: 20 feet.*

(5) Maximum lot coverage: 90%.

(6) Lot width, lot depth, perfect square: none required.

(7) Height: Height shall be determined by each individual panel measured to the grade level beneath the panel and shall not exceed 18 feet from the preexisting natural grade.

C. For Solar parking canopies shall be allowed when parking is permitted in Industrial Zones shall be in accordance with requirements defined in Section 6.2. For solar parking canopies in Business Industrial shall be allowed by special permit.

(1) Setbacks: Solar parking canopies of any size in any zone shall meet setback requirements for accessory structures in under-laying zone.*

(2) If parking canopy abuts a Residential Zone additional setbacks may be required at the discretion of site plan review.*

(3) Height: Height shall be determined by each individual panel measures to the grade level beneath the panel and shall meet height requirements in the under-laying zone. Minimum height should be 14’ at the lowest point to allow for vehicles to pass below.

(D) *Setbacks for ground mount solar may be increased or reduced if, in the opinion of the Planning Board

based on evidence submitted by applicant, existing and/or proposed screening will not or will be adequate to minimize visual impact (as described in § 300-19.10D). Under no circumstance will setbacks be reduced to less than the dimensional requirements for the zoning district.

§ 300-19.8 **Appurtenant structures.**

All appurtenant structures to large-scale ground-mounted solar photovoltaic installations, including, but not limited to, equipment shelters, storage facilities, batteries or other electric storage, transformers and substations, should be screened from view from abutting properties and public ways by vegetation and/or joined or clustered, as determined by the Planning Board, to avoid adverse visual impacts on abutting properties or public ways.

§ 300-19.9 **Design standards.**

A. 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 shielded from abutting properties. Lighting of the solar photovoltaic installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

B. Signage. Signs on ground-mounted solar photovoltaic installations shall comply with the sign bylaw (Article 13), except that one additional sign no more than one square foot in area shall be required to identify the owner and provide a twenty-four-hour emergency contact telephone number. Solar photovoltaic installations shall not be used for displaying any advertising except for identification of the manufacturer or operator of the solar photovoltaic installation.

C. Utility connections. All utility connections from the solar photovoltaic installation shall be underground; provided, however, that the Planning Board may waive this requirement as part of its site plan approval based on soil conditions, shape, and topography of the site and/or any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

§ 300-19.10 **Safety and environmental standards.**

A. Emergency services. The ground-mounted solar photovoltaic installation owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the Fire Chief. The owner or operator shall coordinate and train local emergency services and develop an emergency response plan that includes a twenty-four-hour per day, seven days a week contact. The means to shut down the solar photovoltaic installation will be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

B. 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 ground-mounted solar photovoltaic installation or otherwise prescribed by applicable laws, regulations, and bylaws. Herbicides shall only be applied by properly licensed personnel. Mowing, grazing, or using geotextile materials underneath the solar arrays may be permissible alternatives and require Planning Board approval as part of the site plan review.

C. Impact on agricultural and environmentally sensitive land. The facility shall be designed to minimize stormwater, temperature and other environmental impacts to agricultural and environmentally sensitive land, including abutting parcels, and to be compatible with continued agricultural use of the land whenever possible.

D. Visual impact. Structures shall be shielded from view by vegetation and/or joined and clustered to minimize adverse visual impacts. Landscaping, natural features, opaque fencing and other suitable methods shall be utilized. Large-scale ground-mounted solar photovoltaic installations permitted under this Bylaw are bound by the buffer requirements found in Article 6 of this Bylaw for parcels that adjoin residential districts. Additionally, a screening plan shall be submitted ensuring that the solar arrays and any appurtenant structures do not create a glare concern for adjacent residences and are screened from roads and from adjacent lots by a minimum twenty-five-foot-wide buffer strip and shall contain a screen of plantings not less than five feet in width and six feet in height at the time of operation of the facility or such greater height as required by the Planning Board depending on the location of the site. The Planning Board may alter or waive this requirement if such screening would have a detrimental impact on the operation and performance of the array, or would prove to be ineffective for the site. A diversity of plant species shall be used, with a preference for species native to New England. Use of invasive plants, as identified by the most recent copy of the "Massachusetts Prohibited Plant List" maintained by the Massachusetts Department of Agricultural Resources, is prohibited.

E. Noise. Noise generated by ground-mounted solar photovoltaic installations and associated equipment and machinery shall conform to applicable state noise regulations, including the DEP's Division of Air Quality noise regulations, 310 CMR 7.10.

F. Security. Installation of fencing and or other access control measures shall be employed to limit access to the solar photovoltaic installation to facility personnel and emergency responders. Outdoor access control measures shall be compatible with the character of the area in which they are installed and shall be approved by the Planning Board as part of the site plan review. In the application, the applicant shall provide a description of all access control measures planned for the proposed installation.

§ 300-19.11 **Monitoring and maintenance.**

A. Solar photovoltaic installation conditions. The ground-mounted solar photovoltaic installation owner or operator shall maintain the facility in very good condition. Maintenance shall include, but not be limited to, painting, structural repairs, trash removal, pest control, and integrity of security measures. Site access shall be maintained to a level acceptable to the Town Public Safety Officials. 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.

B. Modifications. Any modifications to a solar photovoltaic installation made after issuance of the required building permit shall require approval by the Planning Board in accordance with § 300-14.12.

C. Removal requirements.

(1) Any ground-mounted solar photovoltaic installation which has reached the end of its useful life or has

been abandoned consistent with Subsection **D** of this Section 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.

(2) Decommissioning shall consist of:

(a) Physical removal of all 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 and revegetation 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. Otherwise, the site shall be brought back to its original condition or better with new trees planted.

D. 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 six months 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 take appropriate enforcement action, including pursuing all available civil or criminal penalties.

E. Financial surety. Proponents of ground-mounted solar photovoltaic projects shall provide a form of surety, either through escrow account, bond or otherwise, to cover the cost of decommissioning and remediation of the landscape as defined in Subsection **C** in an amount and form determined to be reasonable by the Planning Board. The project proponent shall provide an estimate of the cost of decommissioning as defined by Subsection **C**. The Planning Board may consult with an expert at the applicant's cost to determine the size of the surety, taking into account prevailing wages. Such surety shall remain in force for so long as the project is in existence, and the owner shall annually provide the Planning Board with proof that the surety continues in effect. Lapse of surety shall be a violation of this Bylaw and the Town may take appropriate enforcement action. 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.

F. Failure to comply with regulation. If an applicant fails to comply with the requirements of this regulation the Town may elect to enforce the regulation by revoking the license granted to the applicant, by entering the property and removing the installation, which expenses shall be paid by the applicant or landowner within 30 days of notice by the Town. If such expenses are not paid in full, the Town may impose a lien. In addition, the applicant or landowner shall be liable jointly and severably for all

expenses the Town incurs in obtaining judicial enforcement of this Article.

§ 300-19.12 **Contents of application.**

A. Prior to the issuance of a building permit, plans for the proposed facilities shall be submitted to the Planning Board for site plan review. In addition to the requirements of § 300-14.12 for site plan approval, applications for a large-scale solar photovoltaic facility shall also include:

(1) A site plan showing:

(a) Property lines and physical features, including access roads for the project site.

(b) A locus map showing the site in relationship to the properties, easements, and roadways in reasonable proximity thereto, including buildings, structures driveway openings, off-street parking and all public or private ways.

(c) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation and structures.

(d) Elevations and/or photo simulations of the proposed facility from the nearest public way and possibly other locations at the discretion of the Planning Board.

(e) 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.

(f) 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.

(g) A stormwater runoff evaluation that includes water and temperature impacts to receptors and a stormwater management plan to mitigate impacts.

(h) An erosion and sedimentation control plan.

(i) Documentation of the major system components to be used, including the PV panels, mounting system, and inverter.

(j) Name, address, and contact information for proposed system installer.

(k) Name, address, telephone number and signature of the project proponent, as well as all co-proponents and/or property owners, if any.

(l) The name, contact information and signature of any agents representing the project proponent.

(2) Documentation of actual or prospective access and control of the project site.

(3) An operation and maintenance plan.

(4) Documentation of the major system components to be used, including the electric generating photovoltaic panels, mounting system, inverter, etc. shall be provided [including applicable material safety data sheets (MSDS)].

(5) A list of any hazardous materials proposed to be located on the site in excess of household quantities and a plan to prevent their release to the environment, as appropriate, [including applicable material safety data sheets (MSDS)].

(6) A decommissioning plan in compliance with § 300-19.11C.

(7) Zoning district designation for the parcel(s) of land comprising the project site [submission of a copy of a Zoning Map with the parcel(s) identified is suitable for this purpose].

(8) Proof of liability insurance.

(9) Description of financial surety as required by § 200-19.11E.

(10) Photometric plan for any required site lighting with specific cutsheet details.

(11) A rendering or photo simulation showing the proposed project at completion.

(12) Locations of wetlands and priority habitat areas defined by the Natural Heritage and Endangered Species Program (NHESP); the applicant shall provide evidence of compliance with these regulations.

(13) Plans showing provision of water, including that needed for fire protection.

(14) Plans showing existing trees of six inches' caliper or larger.

B. The Planning Board may waive documentary requirements as it deems appropriate. All waiver requests must be written on the site plan.

§ 300-19.13 **Review of application.**

A. Notice of application to Planning Board shall be filed by the applicant with the Town Clerk, who shall date stamp it and forward a copy of the notice to the Planning Board. Upon receipt of an application, the Town Planner shall review it for completeness and file a determination of completeness or a notice of missing items with the Town Clerk within 21 days of the date stamped on the notice by the Town Clerk unless an extension of time is agreed to in writing by the applicant. A copy of this notice shall also be sent to the applicant.

B. Following the procedures and review criteria of § 300-14.12 and the requirements of this Article, the Planning Board shall review the application and file its site plan decision with the Town Clerk within 120 days of a determination of completeness by the Town Planner. Failure by the Planning Board to take final action and file its decision with the Town Clerk within the allotted time, unless an extension

of time is agreed to in writing by the applicant, shall be deemed to be approval of the site plan.

§ 300-19.14 **As-built plans.**
Engineer-stamped as-built plans shall be submitted to the Building Commissioner before a certificate of completion or occupancy may be issued.

§ 300-19.15 **Changes in ownership.**
The Building Commissioner and Planning Board shall be notified at least 30 days in advance of any proposed change in the owner or operator of a ground-mounted solar photovoltaic installation, which notice shall include the contact information of the proposed new owner/operator. A change in ownership shall require advance approval by the Planning Board. Such approval shall not be unreasonably withheld and shall be based principally on the experience and financial strength of the proposed new owner.

§ 300-19.16 **Annual reporting.**
The owner or operator of the installation shall submit an annual report to the Building Inspector and the Planning Board which certifies compliance with the requirements of this Bylaw and their approved site plan, including control of vegetation, stormwater, noise standards, emergency response and adequacy of road access, by January 15 of each year.

§ 300-19.17 **Severability.**
If any provision herein is determined to be unlawful, it shall be severed from this Article and all remaining provisions shall remain in force and effect.