

**Changes to 3580 Large-Scale Ground Mounted Solar Photovoltaic Installations
proposed by the Solar/Battery Storage Moratorium Committee**

3580.00. LARGE-SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC INSTALLATIONS

3580.10. Purpose. The purpose of this bylaw is to promote the creation of new large-scale ground-mounted solar photovoltaic installations (LSGMSPI) **including conventional and dual use**, defined as those with a minimum nameplate capacity of 250 kW or greater or covering 1 acre or more of land, 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 LSGMSPI proposed to be constructed or materially altered after the effective date of this section **and shall follow the guidelines set forth in the MA DOER/MA DEP/Mass CEC Clean Energy Results Ground Mounted Solar PV Systems dated June 2015, as amended to the most current guideline**. To the extent that any particular provision of this bylaw is determined to be invalid, such invalidation shall not affect the validity of any other provision.

Smaller scale ground or building-mounted solar electric installations which are an accessory structure to an existing residential or non-residential use do not need to comply with this Section, but must comply with the other provisions of Carver's Zoning Bylaws as applicable.

3580.15 Exemptions. Notwithstanding any other Zoning Bylaw provisions to the contrary, the following types of solar uses and structures are exempt from the provisions of Section 3580 and are considered as allowed uses and structures and customarily accessory and incidental to permitted principal uses, subject to Planning Board Site Plan Review:

- a. Roof-mounted solar electric installations on a new non-residential building within the GBP District; provided, however, that such uses and structures above shall comply with the other provisions of the Carver Zoning Bylaws as applicable, and with health and safety requirements of the Building Inspector and Fire Chief, and/or his/her designee.

3580.20. General Requirements for all Large-Scale Solar Power Generation Installations. The following requirements are common to all LSGMSPI to be sited in designated locations:

3580.21. Site Plan Review. All LSGMSPI shall undergo site plan review prior to construction or modification by the Planning Board, prior to issuance of a building permit to ensure conformity with all applicable bylaws.

3580.21.1. General. All plans and maps shall be prepared, stamped and signed by a Professional Engineer and Professional Land Surveyor licensed to practice in Massachusetts.

3580.21.2. Required Documents. Pursuant to the site plan review process, the project proponent shall provide a site plan showing:

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Surveyed Plans and engineered drawings of the Commercial Solar Energy Facility signed and stamped by a Registered Land Surveyor and by a Professional Engineer licensed to practice in Massachusetts, showing the proposed layout of the system;

- A. Existing Conditions: showing property lines and physical features including, but not limited to: wetlands and related buffer zones, rivers and associated riverfront areas, land subject to flooding, vernal pools, FEMA flood plains, logging or access roads, forested areas, forest density, existing vegetation, priority and estimated habitats;**
- B. Proposed changes to the landscape of the site including: grading, vegetation clearing, pollarding, as well as boundaries of proposed vegetative buffer;**
- C. Locations of public water supply as well as abutting properties' wells and septic systems;**
- D. Proposed surveyed layout of the system/facility and related structures, including final stormwater and other site management devices, fences, and the location of 20-foot wide access roads, including emergency vehicle turnarounds. Potential shading from nearby trees or structures should also be included;**
- ~~E~~ **E) Blueprints or drawings of the solar photovoltaic installation, and one or three line electrical diagrams detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and over current devices signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system**
- ~~D~~ **F) Documentation of the major system components to be used, including makes and models of the PV panels, transformer, inverter, mounting system, and chemicals for cleaning and maintenance of equipment;**
- G. Landscape plan(s) pursuant to 12.3.8.7 detailing the proposed natural vegetative buffer and visual screen. Boundaries of existing vegetation shall be shown in lighter lines beneath;**
- H. Diagrams of sight lines from abutting residential and commercial structures and public ways, and visualizations of views of the site from which the facility would be visible;**
- I. Construction stormwater management and erosion control;**
- J. Post-installation stormwater management plan;**
- K. Prior to the issuance of a Building Permit the applicant shall provide to the Building Inspector and to the Special Permit Granting Authority Safety Data Sheet (SDS)/Materials Data Sheets (MDS) for all components of (internal and external), and products for, construction of the Solar Energy Facility.**
- ~~E~~ **L) Name, address, and contact information for proposed system installer, the project proponent (s), and property owners if different;**
- ~~F~~ **M) The name, contact information, signature of any agents representing the project proponent; and**
 - i) Documentation of actual or prospective access and control of the project site (see also Section 3580.22);
 - ii) An operation and maintenance plan (see also Section 3580.23);
 - iii) 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);
 - iv Proof of liability insurance; and
 - v) Description of financial surety that satisfies Section 3580.53.

~~A) Property lines and physical features, including roads, for the project site;~~

~~B) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;~~

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- ~~C) Blueprints or drawings of the solar photovoltaic installation, and one or three line electrical diagrams detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and over current devices signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system~~
- ~~D) Documentation of the major system components to be used, including makes and models of the PV panels, transformer, inverter, mounting system, and chemicals for cleaning and maintenance of equipment;~~
- ~~E) Name, address, and contact information for proposed system installer, the project proponent (s), and property owners if different;~~
- ~~F) The name, contact information, signature of any agents representing the project proponent; and~~
- ~~i) Documentation of actual or prospective access and control of the project site (see also Section 3580.22);~~
- ~~ii) An operation and maintenance plan (see also Section 3580.23);~~
- ~~iii) 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);~~
- ~~iv) Proof of liability insurance; and~~
- ~~v) Description of financial surety that satisfies Section 3580.53.~~

The Planning Board may require additional information, data or evidence as it deems necessary pursuant to the site plan review process.

3580.22. Site Control. The project proponent shall submit documentation of prospective access and control of the project site sufficient to allow for construction and operation of the proposed LSGMSPI.

3580.23. Operation & Maintenance Plan. The project proponent shall submit a plan for the operation and maintenance of the LSGMSPI, which shall include measures for maintaining safe access to the installation, **repair or replacement of nonfunctioning panels**, storm water controls, as well as general procedures for operational maintenance of the installation. A ground fuels maintenance plan shall be submitted during the site plan review process and be approved by the Fire Chief. The approved plan shall become a condition of the general site maintenance requirements outlined in section 3580.40.

3580.24. Utility Notification. No proposed LSGMSPI shall be submitted for review until evidence has been given to the Planning Board that the utility company that operates the electrical grid to which the installation is to be connected has been informed of the LSGMSPI owner or operator's intent to install an interconnected customer-owned generator, and that the electrical grid can safely transmit the proposed power output of the installation.

3580.25. Dimension and Density Requirements.

3580.25.1. Setbacks. For LSGMSPI, front, side, and rear setbacks shall be at least 50 feet on the applicant's property; provided, however, that where the lot is located in a Residential-Agricultural district, the setbacks shall not be less than 200 feet on the applicant's property. LSGMSPI shall be provided with 200 foot setbacks on all lot lines abutting the Residential-Agricultural district, regardless of the zoning designated for the proposed site. Vegetated screening shall be provided for a minimum of 50% of the specified setback.

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Every abutting property shall be visually and acoustically screened from the installation through either existing vegetation or new plantings of not less than 8 feet in height at the time of planting staggered at a spacing of no more than 8 feet apart throughout the required setback dimensions. All required plantings shall be maintained throughout the project's life, and replaced as necessary. As an alternate to providing the required screening through vegetation, it is acceptable to increase the setback to 600 feet on the applicant's property while providing an acceptable alternate screening such as a stockade fence and single row of vegetation in close proximity to the project.

The provided screening shall obscure from view on all sides at least 50% or 100% if the project is located in the Residential-Agricultural zoning district, of the project from adjacent properties, including upper levels of existing structures at the time of construction, within three years of the start of construction or earthwork activities. Security fences, roadways, and equipment shall not be placed within the required setback, except for that which is required to access the site from an adjacent roadway, or to transmit the generated power to the grid. Access roads and transmission lines shall be placed in such a manner as to not create an unobstructed view of the project from adjacent property lines.

~~a) Reduced setbacks for large-scale ground-mounted solar photovoltaic installations ("LSGMSPI") to a minimum of 50 feet, provided standard setbacks and screening requirements are waived in writing by all direct abutters in a Residential-Agricultural (RA) zoning district. An affidavit signed by all owners of record of all direct abutters within a Residential-Agricultural (RA) zoning district must be on file with the Planning Board and referenced in the Special Permit Decision.~~

a) Direct abutters to large-scale ground mounted solar photovoltaic installations (LSGMSPI) have the option of reducing the setbacks to a minimum of 50' along their common border of the project in a Residential-Agricultural (RA) zoning district by providing a signed affidavit that waives standard setback and screening requirements. The Applicants are required to contact all direct abutters affected to establish their willingness to enter into an agreement to waive the requirements. Signed affidavits must be on file with the Planning Board and referenced in the Special Permit decision.

b) Setbacks to be reduced to a minimum of 12.5 feet by right where **abutting** arrays are proposed in **a joint Application by owners, mutual partnership/ownership or common ownership of abutting properties.** ~~that transcend existing lot lines.~~

c) Other Setbacks: Large Solar Energy Facilities shall be sited at least one hundred fifty feet (150') from abutting properties' wells and septic systems.

3580.25.2. Maximum Site Density. For projects with 10-20 acres within the security fence or the inner limits of screening if no security fence, no more than 50% of the receiving lot may be developed. For projects greater than 20 acres, up to 66% of the receiving lot may be developed. The developed area shall include the area of the project within the security fence of inner limits of screening if no security fence, plus all other existing and proposed structures throughout the site.

When one project is proposed on multiple contiguous parcels, only one single application is required.

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3580.25.3. Appurtenant Structures. All appurtenant structures to LSGMSPI shall be subject to regulations concerning the bulk and height of structures, lot area, setbacks, open space, parking and building coverage requirements contained elsewhere within the zoning bylaws. All such appurtenant structures shall be architecturally compatible with each other and be shaded from view by vegetation and/or joined or clustered to avoid adverse visual impacts. The project shall be designed so that the transformer (s) and inverter (s) are sited in the most remote location practical.

3580.26. Design Standards

3580.26.1. Lighting. Lighting of LSGMSPI 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, shall be shielded to eliminate glare from abutting properties, shall be directed downward, and shall incorporate cut-off fixtures to reduce light pollution.

3580.26.2. Signage. Signs on LSGMSPI shall comply with the Town of Carver's sign bylaw, Section 3500. Signage at all site entrances shall be required to identify the owner and provide a 24-hour emergency contact phone number. LSGMSPI shall not be used for the display of any advertising.

3580.26.3. Utility Connections. All utility connections from the LSGMSPI shall be placed underground, unless soil conditions, shape, or topography of the site as **verified by the Town's Consulting Engineer** ~~and any requirements of the utility provider~~ dictate above ground installation. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

3580.26.4. Hazardous Materials. Hazardous materials stored, used, or generated on site shall not exceed the amount for a Very Small Quantity Generator of Hazardous Waste as defined by the DEP pursuant to Mass DEP regulations 310 CMR 30.000, and shall meet all requirements of the DEP including storage of hazardous materials in a building with an impervious floor that is not adjacent to any floor drains to prevent discharge to the outdoor environment. If hazardous materials are utilized within the LSGMSPI, including the photovoltaic panels or transformer (s), then impervious containment areas capable of controlling any release to the environment and to prevent potential contamination of groundwater are required.

Glare: The solar PV modules shall be positioned in such a way that minimizes glare to greatest practicable extent on a residence or public way at any time during the day

3580.30. Safety and Environmental Standards.

3580.31. Emergency Services. The LSGMSPI owner or operator shall provide a copy of the project summary, electrical schematic, as built plans, and site plan to the Fire Chief and Emergency Management Director. Upon request, the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the LSGMSPI shall be clearly marked, and training required to allow emergency response personnel to safely shut down the LSGMSPI in event of an emergency provided at no cost to the Town as requested by the Town.

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The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation, all changes shall immediately be brought to the attention of the Town. Site access to LSGMSPI shall be conducive to emergency vehicle travel to allow for unimpeded access around the site at all times. Access requirements, not limited to gating, road widths and surfaces, etc. will be reviewed during the site plan review process, with approval being at the discretion of the Fire Chief.

3580.32. Land Clearing, Soil Erosion and Habitat Impacts **Pre-Construction Conference**. Prior to any site disturbance and construction, the limits of the approved buffer zones and any other approved site disturbances, shall be surveyed and clearly marked by a Professional Land Surveyor. Upon completion of the survey, the Professional Land Surveyor shall verify to the Planning Board, in writing, that the limit of work, as shown on the approved site plans, has been established on site.

Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the LSGMSPI or otherwise prescribed by applicable laws, regulations, and bylaws. **Not more than 30% of forested land up to a maximum of five acres per lot shall be deforested for any one LSGMSPI**

Mitigation Measures

(b) Mitigation for Loss of Forest Habitat within the Installation If forestland is proposed to be converted to a LSGMSPI, the plans shall show mitigation measures that create a wildflower meadow habitat, pollinator species within and immediately around the LSGMSPI and a successional forest habitat in the surrounding areas managed to prevent shading until the installation is decommissioned and the site restored to forest. The special permit may be conditioned to effect and make enforceable this requirement.

No clearing or site work can begin prior to a Preconstruction Conference held with the applicant, their contractor(s) and Town Staff including the Building Commissioner, Conservation Agent and Town Planner.

3580.33. Control of Vegetation. Mowing or the use of pervious pavers or geo-textile materials underneath the LSGMSPI is the preferred method of vegetation control. Herbicides may only be used where it can be demonstrated that no danger is posed to groundwater supplies, or to local agricultural activities. **Use of chemical herbicides or pesticide is limited to those approved by the Department of Agriculture Pesticide Bureau** ~~The Agricultural Commission and Board of Health are to approve all proposed herbicides.~~

3580.34. Panel Maintenance. Any and all materials used for maintenance of the LSGMSPI or other structures shall be properly disposed of and no harmful chemicals shall be used **or stored onsite**.

3580.40. Monitoring and Maintenance.

3580.41. Large-Scale Solar Photovoltaic Installation Conditions. The LSGMSPI owner or operator shall maintain the facility in good condition, including but not be limited to, snow removal, painting, structural repairs, **repair or replacement of nonfunctioning panels**, maintenance of landscaping and required screening, and integrity of security measures. Site access shall be maintained to a level

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acceptable to the local Fire Chief and Emergency Medical Services. The owner or operator shall be responsible for all maintenance.

3580.42. Modifications. All material modifications to a LSGMSPI made after issuance of the required building permit shall require site plan review and approval by the Planning Board for continued compliance of all applicable bylaws.

3580.43. Annual Reporting. The owner or operator of the LSGMSPI shall submit an Annual Report demonstrating and certifying compliance with the Operation and Maintenance Plan and the requirements of this bylaw and their approved site plan including control of vegetation, maintenance of screening, adequacy of road access, information on the maintenance completed during the course of the year, and the amount of electricity generated by the facility. 6 copies of the report shall be submitted to the Board of Selectmen no later than 45 days after the end of the calendar year.

3580.50. Change of ownership: Abandonment or Decommissioning

3580.51 Ownership Changes. If the owner of the LSGMSPI changes or the owner of the property changes, the special permit shall remain in effect, provided that the successor owner or operator assumes in writing all of the obligations of the special permit, site plan approval, and decommissioning plan. A new owner or operator of the LSGMSPI shall notify the Building Commissioner of such change in ownership or operator within 14 days of the ownership change. A new owner or operator must provide such notification to the Building Commissioner in writing and meet with any permitting authority from which the original applicant received a permit.

3580.52. Removal Requirements. Any LSGMSPI which has reached the end of its useful life, or has been abandoned consistent with Section 3580.52 of this bylaw, shall be removed no more than 120 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:

3580.52.1. Physical removal of all LSGMSPI, structures, equipment, security barriers, and transmission lines from the site.

3580.52.2. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

3580.52.3. Stabilization or re-vegetation of the site as necessary to minimize erosion and runoff. **Including the use of pollinator species and cranberry plants especially for Dual Use installations.**

3580.53. Abandonment. Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the LSGMSPI shall be considered abandoned when it fails to operate for more than sixty days without the written consent of the Board of Selectmen. As a condition of approval, if the owner or operator of the LSGMSPI fails to remove the installation in accordance with the requirements of this section within 120 days of abandonment or the proposed date of decommissioning, the Town may enter the property and physically remove the installation. The costs for the removal may be charged to the property owner.

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3580.54. Financial Surety. Proponents of LSGMSPI shall provide a form of surety through an escrow account to cover the cost of removal in the event the Town must remove the installation and remediate the landscape, in an amount determined to be reasonable by the Planning Board and form determined to be reasonable by the Treasurer, but in no event to be less than 75 percent nor to exceed more than 125 percent of the cost of removal and compliance with the additional requirements set forth herein. 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 expert, which shall include a mechanism for calculating increased removal costs due to inflation.

The financial surety may also be used to replace and maintain all required landscaping and vegetative screening when in the opinion of the Planning Board the owner/operator has failed to do so. All costs incurred by the Town for maintenance activities shall be paid by the property owner within 90 days, or the maintenance costs may be charged to the property owner.

3580.60. Special Permit for LSGMPI. In the event that a Special Permit is required for a LSGMPI, the planning board may grant a Special Permit if the following conditions are met:

1. Such use will not nullify or substantially derogate from the intent or purpose of this bylaw;
2. Such use will not constitute a nuisance;
3. Such use will not adversely affect the neighborhood in which it is sited;
4. Such use complies with the standards for site plan review as spelled out in this bylaw;
5. The Planning Board may also provide for other conditions that it deems necessary.

3580.70. Dual Use Large Scale Ground-Mounted Solar Photovoltaic Installations
("LSGMPI")

2a) Required setbacks and screening for SMART/Dual Use Arrays:

SMART/Dual Use Array

	Array Height	Setback	% Screening in Setback	Abutters Notification
Residential - Agricultural	8' +	200' *	100% **	300'

* Planning Board may reduce setbacks, but in no instance shall setbacks be less than ~~25'~~ **50'** when abutting a Residential/Agricultural district.

** 100% screening shall be attained from the greater of abutting street grade or yard grade. Topographical situations may require flexibility in either setback or screening decisions.

2b) To allow setbacks of a minimum of 12.5 feet if arrays are abutting a bog or other agricultural use as defined in G.L. c. 128, § 1A provided standard setbacks and screening requirements are waived in writing by all direct abutters in a Residential-Agricultural (RA) zoning district.

2c) To allow setbacks of a minimum ~~25~~ **50** feet provided standard setbacks and screening requirements are waived in writing by all direct abutters in a Residential-Agricultural (RA) zoning district.

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TOWN MEETING AND ATTORNEY GENERAL APPROVALS**

Adopted: July 26, 1963

Revised: April 27, 1998

Revised: June 16, 2003

STM December 6, 2012 (Art. 10) – Approved March 13, 2013

ATM June 16, 2014 (**Art. 23,**) – Approved October 20, 2014 landfill district

ATM April 24, 2018 (Art. **9**) – Approved September 7, 2018 & December 3, 2018 Battery Storage

ATM April 23, 2019 (Art. **23,24**) – Approved August 15, 2019 Solar Setbacks and Dual Use

ATM April 12, 2022 (Art. **14**) – Approved September 19, 2022 (1) exempt small-scale and building and roofmounted solar installations from Section 3580.00's provisions (2) to add a new Section 3580.15. that exempts roof-mounted solar installations on new non-residential buildings in the Town's GBP District.