

NEW SECTION OF ZONING BYLAWS

SECTION XIV: LARGE-SCALE GROUND-MOUNTED SOLAR ELECTRIC GENERATING INSTALLATIONS

14-1 Purpose.

The purpose of this bylaw is to facilitate the creation of new Large-Scale Ground-Mounted Solar Electric Generating Installations (see Section 14-3 Definitions) by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on environmental, 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, repair and/or removal of Large-Scale Ground-Mounted Solar Electric Installations occupying more than 1,000 square feet of land.

14-2 Applicability

This section applies to Large-Scale Ground-Mounted Solar Electric Generating Installations occupying more than 1,000 square feet of land. This section shall also pertain to physical modifications that materially alter the type, configuration, or size of Large-Scale Ground-Mounted Solar Electric Generating Installations or related equipment.

- a) Large-Scale Ground-Mounted Solar Electric Generating Installations shall require a Special Permit and Site Plan Review in accordance with the Zoning Bylaws of the Town in addition to meeting the requirements of this Section XIV. An installation may be permitted on one or more adjacent parcels existing as of the date of the adoption of this bylaw (including those separated by a roadway) up to a maximum of 5 acres in the Rural Residential, Commercial, Historic Industrial, and Industrial Districts in accordance with Section IV: Use Regulations.
- b) Large-Scale Ground-Mounted Solar Electric Generating Installations covering more than 5 acres are not allowed anywhere in Town.
- c) Small-scale (occupying 1,000 square feet or less) ground-mounted solar electric generating installations which are an accessory structure to a residential or non-residential use do not need to comply with this section, but are subject to Site Plan Review, require a building permit, and must comply with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, and communications requirements and other provisions of the Zoning Bylaws, such as setback requirements.

14-3 Definitions

Large-Scale Ground-Mounted Solar Electric Generating Installation: A solar electric system that is structurally mounted on the ground and is not attached to a roof or wall of a structure, and occupies more than 1,000 square feet of land.

Rated Nameplate Capacity: The maximum rated output of electric power production of the Electric system in Alternating Current (AC) or Direct Current (DC).

Site Plan Review: Review by the Planning Board to determine conformance with the Zoning Bylaws.

14-4 General Requirements for all Large-Scale Solar Ground-Mounted Solar Electric Generating Installations

The following requirements are common to all Large-Scale Ground-Mounted Solar Electric installations.

a) Compliance with Laws, Bylaws and Regulations

The construction and operation of all Large-Scale Ground-Mounted Solar Electric 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 electric installation shall require a building permit and shall be constructed in accordance with the Massachusetts State Building Code.

14-5 Site Plan Review

Large-Scale Ground-Mounted Solar Electric Installations shall undergo Site Plan Review (see Section XII) by the Planning Board prior to construction, installation or modification as provided in this section.

a) General

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

b) Required Documents

The project proponent shall provide the following documents in addition to or in coordination with those required for Site Plan Review (see Section XII).

1. A site plan showing:

- a. Property lines, map and lot number from the Assessor's records, and physical features, including roads and topography, for the project site;
- b. Proposed changes to the landscape of the site including grading, vegetation clearing and planting, exterior lighting, screening, and new structures, including their height;

- c. Locations of wetlands, Permanently Protected Open Space, Priority Habitat Areas and BioMap 2 Critical Natural Landscape Core Habitat mapped by the Natural Heritage & Endangered Species Program (NHESP) and "Important Wildlife Habitat" mapped by the DEP.
 - d. Locations of floodplains or inundation areas for moderate or high hazard dams;
 - e. Locations of local or National Historic Districts;
 - f. 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;
 - g. Blueprints or drawings of the solar electric 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;
 - h. One or three line electrical diagram detailing the solar electric installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices;
 - i. Documentation of the major system components to be used, including the electric generating components, transmission systems, mounting system, inverter, etc.;
 - j. Name, address, and contact information for proposed system installer;
 - k. Name, address, phone number and signature of the property owners and project proponent, as well as all co-proponents, if any;
 - l. The name, contact information and signature of any agents representing the project proponent;
 - m. Provision of water including that needed for fire protection; and
 - n. Existing trees 6" caliper or larger and shrubs.
2. An operation and maintenance plan (see Section 14-7 a);
 3. 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);
 4. Proof of liability insurance;
 5. Description of financial surety that satisfies Section 14-13 c);
 6. Sight line representation. A sight line representation shall be drawn from that portion of any public road within 300 feet of the solar electric generating installation that would have the clearest view of the proposed facility, and the closest facade of each residential building (viewpoint) within 300 feet of the highest point (visible point) of the solar electric generating installation. Each sight line shall be depicted in profile, drawn at one-inch equals 40 feet. The profiles shall show all intervening trees and buildings;
 7. Existing (before condition) and proposed (after condition) photographs. Each sight line shall be illustrated by one four-inch by six-inch color photograph of what can currently be seen from any public road within 300 feet of the solar electric generating installation. Each of the existing condition photographs shall have the proposed solar electric generating installation superimposed on it to

show what will be seen from public roads if the solar electric generating installation is built;

8. Landscape plan that satisfies 14-7 b); and
9. Documentation provided by a licensed professional acoustical engineer, approved by the Planning Board and paid for by the applicant, of projected noise levels to be generated by the installation.

14-6 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 electric installation.

14-7 Operation & Maintenance & Landscape Plans

a) Operation & Maintenance Plan

The project proponent shall submit a plan for the operation and maintenance of the Large-Scale Ground-Mounted Solar Electric Generating Installation, which shall include measures for maintaining safe access to the installation, storm water and vegetation controls, as well as general procedures for operational maintenance of the installation.

b) Landscape Plan

The project proponent shall submit a Landscape Plan detailing all proposed changes to the landscape of the site including: vegetation removal, temporary or permanent access roads, grading, exterior lighting and screening of structures. The Landscape Plan shall show the type and location of vegetation proposed to screen the installation including appurtenant structures from public ways and adjacent properties. The depth of the screen shall be 30 feet and shall be composed of native trees and shrubs staggered for height and density that shall be properly maintained. The owner/operator shall not remove any naturally occurring vegetation such as trees and shrubs unless it adversely affects the performance and operation of the solar installation.

14-8 Utility Notification

No Large-Scale Ground-Mounted Solar Electric Generating Installations 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 electric installation owner or operator's intent to install an interconnected facility. Off-grid systems shall be exempt from this requirement.

14-9 Dimension and Height Requirements

a) Setbacks

For Large-Scale Ground-Mounted Solar Electric Generating Installations, front, side and rear setbacks and setbacks from property lines shall be as follows:

1. Front yard: The front yard depth shall not be less than 50 feet.
2. Side yard. Each side yard shall have a depth of at least 50 feet.
3. Rear yard. The rear yard depth shall not be less than 50 feet.

The required setback areas should not be included in the maximum acre calculations for solar electric generating installations (see Section 14-2 b).

b) Appurtenant Structures

All appurtenant structures to Large-Scale Ground-Mounted Solar Electric Generating Installations shall be subject to the Town's Zoning Bylaw requirements concerning the bulk of structures, lot area, setbacks as specified in Section 14-9 a), 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. Structures shall be screened from view by vegetation and/or joined or clustered to avoid adverse visual impacts.

c) Height of Structures

The height of any structure associated with a Large-Scale Ground-Mounted Solar Electric Generating Installation shall not exceed 20 feet.

14-10 Design and Performance Standards

a) Lighting

Lighting of solar electric 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. Lighting of the solar electric installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution. In addition, such fixtures shall be "dark sky" compliant and meet International Dark Sky FSA certification requirements. The owner/operator shall be responsible for maintenance of lighting systems. Lighting shall not be kept on after 9:00 p.m. unless there is an emergency or is required for safety purposes as determined by the Buckland Emergency Management Director.

b) Signage

Signs on Large-Scale Ground-Mounted Solar Electric Generating Installations shall comply with the Town's sign regulations, Section 8-3 of the Zoning Bylaws. A sign consistent with Section 8-3 shall be required to identify the owner and provide a 24-hour emergency contact phone number.

Solar electric installations shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar electric installation.

c) Utility Connections

Reasonable efforts, as determined by the Planning Board, shall be made to place all utility connections from the solar electric 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.

d) Roads

Access roads shall be constructed to minimize grading, removal of stone walls or trees and minimize impacts to environmental or historic resources.

e) Control of Vegetation

Herbicides may not be used to control vegetation at the solar electric installation. Mowing, grazing, or the use of pervious pavers or geotextile materials underneath the solar array are possible alternatives.

f) 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 MassDEP 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 solar electric equipment then impervious containment areas capable of controlling any release of hazardous materials to the environment and to prevent potential contamination of groundwater are required. A list of any hazardous materials proposed to be located on the site and a plan to prevent their release shall be provided to the Planning Board and Fire Chief.

g) Noise

Noise generated by Large-Scale Ground-Mounted Solar Electric Generating Installations and associated equipment and machinery shall conform at a minimum to applicable state and local noise regulations, including the DEP's Division of Air Quality noise regulations, 310 CMR 7.10. In addition, for the purposes of this bylaw, a source of sound will be considered in violation of this bylaw if the source:

1. increases the broadband sound level by more than 5 db(A) above the pre-construction ambient noise level;
2. increases the broadband sound level by more than 5db(C) above the pre-construction ambient noise level;
3. produces a "pure tone" condition, when an octave band center frequency sound pressure level exceeds the two (2) adjacent center frequency sound pressure levels by three (3) decibels or more; or
4. results in sound or noise levels greater than 30 dBA.

Sound levels must comply with the above stated criteria, at both the property line and at the nearest inhabited residence. In addition, the said criteria shall be measured at any property line that is subject to sound elevations higher than ambient sound as a result of higher or lower topography in the opinion of the applicant's acoustical engineer. "Ambient" is defined as the background A-weighted sound level that is exceeded 90% of the time measured during the quietest part of the day or night. All testing required by this bylaw shall be done by a licensed professional acoustical engineer chosen by the Planning Board and paid for by the applicant. All testing shall be done in accordance with the professional standards of the appropriate accrediting agencies.

h) Visual Impacts

The solar electric generating installation shall be designed to minimize visual impacts, including preserving natural vegetation to the maximum extent possible, blending in equipment with the surroundings, and adding vegetative buffers to provide an effective visual barrier from adjacent roads and to screen abutting residential properties, whether developed or not. Landscaping shall be maintained by the owner/operator of the solar electric generating installation. Siting shall be such that the view of the solar electric generating installation from other areas of Town shall be as minimal as possible, in the judgment of the Planning Board.

14-11 Safety and Environmental Standards

a) Emergency Services

The Large-Scale Ground-Mounted Solar Electric Generating Installations owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local Fire Chief. The owner or operator shall cooperate with local emergency services to develop an emergency response plan. All means of shutting down the solar electric installation shall 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

The facility shall be designed to minimize impacts to agricultural land and should be compatible with continued agricultural use to the maximum extent possible. The facility shall be designed to minimize impacts to environmentally sensitive land. Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the Large-Scale Ground-Mounted Solar Electric Installation or otherwise prescribed by applicable laws, regulations, and bylaws. In no event shall clear cutting of forest exceed 5 acres. The design shall minimize the use of concrete and other impervious materials to the maximum extent possible. Locating Large-Scale Ground-Mounted Solar Electric Generating Installations on grades in excess of 15% shall be avoided to the maximum extent feasible.

c) Habitat Impacts

Large-Scale Ground-Mounted Solar Electric Generating Installations shall not be located on Permanently Protected Open Space or Priority Habitat and BioMap 2 Critical Natural Landscape Core Habitat areas mapped by the Natural Heritage and Endangered Species Program (NHESP) and shall be designed to minimize impacts to "Important Wildlife Habitat" mapped by the DEP to the maximum extent feasible.

14-12 Monitoring, Maintenance and Reporting

a) Solar Electric Generating Installation Conditions

The Large-Scale Ground-Mounted Solar Electric Generating Installation owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and maintaining the integrity of security measures. Site access shall be maintained to a level acceptable to the local Fire Chief and Emergency Management Director. The owner or operator shall be responsible for the cost of maintaining the solar electric generating installation and any access road(s).

b) Modifications

All material modifications to a solar electric generating installation made after issuance of the required building permit shall require approval by the Planning Board.

c) Annual Reporting

The owner or operator of the installation shall submit an Annual Report which certifies compliance with the requirements of this bylaw and the approved site plan, including control of vegetation, noise standards, and adequacy of road access. The Annual Report shall also provide information on the maintenance completed during the course of the year, the amount of electricity generated by the facility, and the amount of surety available for decommissioning or indemnification (see Section 14-13). The Annual Report shall be submitted to the Select Board, Planning Board, Fire Chief, Emergency Management Director, Building Inspector, Board of Health and Conservation Commission (if a Wetlands Permit was issued) no later than 45 days after the end of the calendar year.

14-13 Abandonment, Decommissioning, Financial Surety & Indemnification

a) Removal Requirements

Any Large-Scale Ground-Mounted Solar Electric Generating Installation which has reached the end of its useful life or has been abandoned consistent with Section 14-13 b) of this bylaw 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:

1. Physical removal of all Large-Scale Ground-Mounted Solar Electric Generating Installations, structures, equipment, security barriers and transmission lines from the site.
2. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.
3. 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.

b) Abandonment

Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar electric 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 Electric Generating 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 retains the right, after the receipt of an appropriate court order, to enter and remove an abandoned, hazardous or decommissioned Large-Scale Ground-Mounted Solar Electric Generating Installation. As a condition of Site Plan or Special Permit approval, the applicant and landowner shall agree to allow entry to remove an abandoned or decommissioned installation. The Town's cost for the removal will be charged to the property owner in accordance with the provisions of M.G.L. 139, Section 3A as a tax lien on the property.

c) Financial Surety

Proponents of Large-Scale Ground-Mounted Solar Electric Generating Installations shall provide a form of surety, either through an escrow account, bond or other form of surety approved by the Planning Board 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 and the Town. Such surety will not be required for municipal or state-owned facilities. The project proponent shall submit a fully inclusive estimate of the costs associated with removal, prepared by a licensed Professional Engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation.

d) Indemnification

The owner/operator shall indemnify and hold harmless the Town of Buckland and/or any of its citizens from any and all liabilities, losses and/or damages, including reasonable attorney fees, resulting from the failure of the owner/operator to comply with the terms of this by-law and/or negligence in the operations and maintenance of any structures built in accordance with it. Any surety provided for in this by-law shall be available for the aforementioned indemnification. The current owner is obligated to replenish the surety

to its original amount in the event that the surety is drawn down too low to meet indemnification as determined by the Planning Board.

Proposed changes to SECTION IV: USE REGULATIONS (proposed additions are in *italics* and deletions are [underlined and in brackets])

Y = Yes, the use is permitted by right in that zoning district.

N = No, the use is not permitted in that zoning district.

SP = The use is allowed in that zoning district only if a special permit has been granted by the Zoning Board of Appeals.

SPP = The use is allowed in that zoning district only if a special permit has been granted by the Planning Board.

VC = Village Commercial

VR = Village Residential

RR = Rural Residential

C = Commercial

I = Industrial

HI = Historic Industrial

INDUSTRIAL USES (CONT.)	VC	VR	RR	C	I	HI
Automotive Repair Garage which is not a Home Based Business	SP	N	N	SP	N	SP
Quarrying, Gravel Mining & Earth Removal	N	N	SP	N	N	N
<u>[Solar.]</u> Wind or Hydro Electric Generating Facilities	N	N	SP	SP	SP	SP
<i>Ground-Mounted Solar Electric Generating Installations occupying 1,000 square feet or less^{1, 2}</i>	<i>SPR</i>	<i>SPR</i>	<i>SPR</i>	<i>SPR</i>	<i>SPR</i>	<i>SPR</i>
<i>Large-Scale Ground-Mounted Solar Electric Generating Installations occupying more than 1,000 square feet up to 1 acre^{2, 3} (see Section XIV)</i>	<i>N</i>	<i>N</i>	<i>SPP</i>	<i>SPP</i>	<i>SPP</i>	<i>SPP</i>
<i>Large-Scale Ground-Mounted Solar Electric Generating Installations occupying more than 1 acre up to five acres provided that the business and/or residence on the property utilizes at least 51% of the electricity generated annually based on the documented average annual electricity consumption of the existing business or residence on the property over the previous 3 years (see Section XIV)^{2, 3}</i>	<i>N</i>	<i>N</i>	<i>SPP</i>	<i>SPP</i>	<i>SPP</i>	<i>SPP</i>
<i>Large-Scale Ground-Mounted Solar Electric Generating Installations occupying greater than 5 acres (see Section XIV)</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>
Other Non-Nuclear Electric Generating Facilities	N	N	N	N	SP	SP
<i>Transmission Lines, Substations and Switchyards</i>	<i>N</i>	<i>N</i>	<i>SP</i>	<i>SP</i>	<i>SP</i>	<i>SP</i>

Sawmill	N	N	SP	N	SP	N
Bulk Storage, Warehousing, or Storage Units	SP	N	SP	N	SP	SP

1 - Ground-Mounted Solar Electric Generating Installations occupying 1,000 square feet or less¹ which are an accessory use to a residential or non-residential use are allowed “by right” (Yes) but require Site Plan Review.

2- Solar power generating facilities attached to a roof or wall of a structure are allowed “by-right” but require a building permit and must comply with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, and communications requirements.

3 - Requires Site Plan Review (see Section XII)

Proposed changes to SECTION XII: SITE PLAN REVIEW

- a) Purpose. The purpose of Site Plan Review is to ensure that new development is designed in a manner which reasonably protects the environmental and scenic qualities of the neighborhood and the Town.
- b) Site Plan Review Process. The Site Plan Review process will be conducted by the Planning Board.
- c) Applicability. Site Plan Review shall be required for Cluster Developments (see Section 6-2) and may be required for Cluster Developments for Commercial Uses (see Section 6-3). *Site Plan review shall also be required for all Ground-Mounted Solar Electric Generating Facilities.*
- d) Procedures. An applicant for Site Plan Review shall file a completed application with the Town Clerk. The Town Clerk shall acknowledge receipt of the plans by signing and dating the application form. The application submitted to the Town Clerk shall include seven (7) copies each of an application form, Preliminary Plan for the *project* [Cluster Development], and any narrative documents as outlined in the submittal requirements. Upon receipt of the application, the Town Clerk shall transmit copies of the application to the Planning Board, Zoning Board of Appeals, Conservation Commission, Board of Health, the Highway Superintendent, Historical Commission, the Fire Chief and the Police Chief. These Town Boards and municipal officials shall have 45 days from the date the completed application is received by the Town Clerk to report to the Planning Board their findings and recommendations, and they can attend the public hearing(s). No building permits for projects requiring Site Plan Review shall be issued until the Planning Board has approved the Site Plan or unless the required time period for taking action on a Site Plan has lapsed without action from the Planning Board. The applicant is also responsible for obtaining all applicable permits or approvals that may be required for the *project* [Cluster Development] from other Town Boards or municipal officials.
- e) Public Hearing. The Planning Board shall hold a public hearing within 65 days after the filing of a completed application and shall take final action on an application for Site Plan Review within 90 days of the close of the public hearing. Notice and posting of the public hearing shall comply with the provisions of M.G.L. Chapter 40A, Section 11, regarding

notice for public hearings. To the extent permitted by law, the public hearing should be coordinated with any other public hearing required [for a definitive subdivision plan].