

MAY 2013 ATM
Proposed Zoning Amendment
Ground-Mounted Solar
03/12/2013
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F. Ground-Mounted Solar Photovoltaic Installations

- (1) Purpose. The purpose of this By-Law is to provide a permitting process for ground-mounted solar photovoltaic installations and standards with respect to the placement, design, construction, operation, monitoring, modification and removal of such installations. These standards are designed to: a) address public health, safety, and welfare concerns; b) minimize impacts on scenic, natural, agricultural, and historic resources; and c) provide adequate financial assurance for the eventual decommissioning of such installations if necessary.
- (2) Applicability. This section applies to all ground-mounted solar photovoltaic installations proposed to be 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.
 - (a) As-of-Right Siting: Solar photovoltaic installations that are ground-mounted and that occupy less than ¼ acre of land are allowed As-of-Right in all zoning districts upon issuance of a building permit by the Building Inspector.
 - (b) As-of-Right Siting with Site Plan Review: Solar photovoltaic installations that are ground-mounted and that occupy at least ¼ acre of land but less than two (2) acres of land are allowed As-of-Right subject to Site Plan Review by the Planning Board and upon issuance of a building permit by the Building Inspector.
 - (c) Special Permit Siting: Any ground-mounted solar photovoltaic installation occupying two (2) acres of land or more on one or more adjacent parcels either in common ownership or included in one solar photovoltaic project application, including parcels separated by a roadway, shall require a Special Permit in accordance with the Zoning By-Laws of the Town of Newbury prior to obtaining a building permit. For purposes of this By-Law, the _____ is the Special Permit Granting Authority.
- (3) Definitions.

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 may be subject to Site Plan Review to determine conformance with local zoning ordinances or by-laws. Such projects cannot be prohibited, but can be reasonably regulated by the Building Inspector and the Planning Board.

Ground-Mounted Solar Photovoltaic Installation: A solar photovoltaic system that is structurally mounted on the ground and is not roof-mounted.

Net Metered Solar Photovoltaic Installation: A solar photovoltaic installation of 60kW or less for the primary purpose of providing electricity on-site that is interconnected with the

electric grid, which allows the owner/operator to feed surplus electricity into the electric grid.

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

Solar Photovoltaic Array: An arrangement of solar photovoltaic panels.

Solar Photovoltaic Installation: A device, structure, or structural design feature, a substantial purpose of which is to provide for the collection, storage, and distribution of solar energy for space heating or cooling, generation of electricity, or water heating. This includes appurtenant equipment for the collection, storage, and distribution of electricity to buildings or to the electric grid.

- (4) General Requirements. The following requirements are common to all ground-mounted solar photovoltaic installations permitted ~~by the Table of Uses in Article III of under~~ this ~~Zoning~~ By-Law, unless otherwise noted:
- (a) Project Siting: The Massachusetts Department of Energy Resources (DOER) discourages applicants from selecting locations for ground-mounted solar photovoltaic installations which require significant tree cutting, due to the important water management, cooling, and climate benefits that trees provide. Applicants are therefore encouraged to site installations on vacant, disturbed land in a manner which will minimize tree cutting to the greatest extent reasonably possible.
 - (b) Compliance with Laws, Ordinances and Regulations: The construction and operation of all ground-mounted solar photovoltaic installations shall be consistent with all applicable local, state and federal requirements, including, but not limited to, all applicable safety, construction, electrical, communications, and environmental requirements, including stormwater management. All buildings and fixtures forming part of a ground-mounted solar photovoltaic installation shall be constructed in accordance with the State Building Code.
 - (c) Building Permit and Fees: No ground-mounted solar photovoltaic installation shall be constructed, installed or modified as provided in this section without first obtaining a building permit. The application for such a permit shall be accompanied by the required building permit fee.
- (5) Installations Requiring Site Plan Review.
- (a) Applicability: Ground-mounted solar photovoltaic installations occupying at least ¼ acre of land but less than two (2) acres of land shall undergo Site Plan Review by the Planning Board prior to the issuance of a building permit for construction, installation or modification.
 - (b) Procedure: An application for Site Plan Review of an applicable ground-mounted solar photovoltaic installation shall be submitted and will be reviewed in accordance with the provisions of § 97-9.A. Site Plan Review of Newbury's Zoning By-Law.
 - (c) Submission Requirements: The Applicant shall submit a site plan containing all

data, detail, and supporting information listed below in Paragraph (6)(c)02d) “Site Plan Contents” under Special Permit. The Planning Board may waive one or more of the Site Plan Contents requirements upon written request by the applicant if the small scale or simplicity of the project warrants such a waiver. Such determination to waive one or more of the requirements shall be in the sole discretion of the Planning Board.

- (d) Pre-application Review: Prior to submission of an application for a ~~Special Permits~~ Site Plan Review for a ground-mounted solar photovoltaic installation ~~of two or more acres in accordance with F.(5)(a) above~~, the applicant shall request a pre-application review with the Planning Board. The Planning Board shall invite the Conservation Agent, the Health Agent, the Building Inspector, the Director of Public Works, the Fire Chief, the Police Chief, and representatives from the Board of Selectmen, the Open Space Committee, the Historical Commission, and the Agricultural Commission. The purpose of a pre-application review is to clarify and expedite the permitting process for the applicant and minimize the applicant’s costs of engineering and other technical experts.
- (e) Decision: The Planning Board’s final decision in writing shall consist of one of the following actions based on a simple majority vote:
 - 01) Approval of the site plan based upon determination that the proposed plan will constitute a suitable development and is in compliance with the standards set forth in the Zoning By-Laws;
 - 02) Approval of the site plan subject to any conditions, modifications, or restrictions as required by the Board which will ensure that the project meets the standards set forth in the Zoning By-Laws.

(6) Installations Requiring a Special Permit:

- (a) Applicability: Ground-mounted solar photovoltaic installations occupying two (2) or more acres of land shall require a Special Permit in accordance with the provisions of § 97-11.C. Special Permit Procedures – Public Hearing of Newbury’s Zoning By-Law.
- (b) Special Permit General Requirements:
 - 01) Ground-mounted solar photovoltaic installations that require a special permit must obtain such special permit prior to the issuance of a building permit, as provided in this section.
 - 02) Special Permit Granting Authority: The _____ is hereby established as the Special Permit Granting Authority (SPGA) for the issuance of special permits to construct and operate ground-mounted solar photovoltaic installations occupying two (2) or more acres of land. No ground-mounted solar photovoltaic installation of this size shall be erected, constructed, installed, or modified as provided in this section without first obtaining a permit from the SPGA. The construction of a ground-mounted solar photovoltaic installation of two acres or more shall be permitted subject to the issuance of a Special Permit and provided that the use

complies with all requirements set forth ~~in Sections~~ herein. All such solar photovoltaic installations shall be constructed and operated in a manner that minimizes any adverse visual, safety, and environmental impacts. No special permit shall be granted unless the SPGA finds in writing that the criteria listed in Section (06)(d) below have been met.

03) Pre-Application Review: Prior to submission of an application for a Special Permit for a ground-mounted solar photovoltaic installation of two or more acres, the applicant shall request a pre-application review meeting with the SPGA. The review meeting shall include the Town Planner, the Conservation Agent, the Health Agent, the Building Inspector, the Director of Public Works, the Police Chief, the Fire Chief, and representatives from the Board of Selectmen, the Planning Board, the Open Space Committee, the Historical Commission, and the Agricultural Commission. The purpose of a pre-application review is to clarify and expedite the permitting process for the applicant and minimize the applicant's costs of engineering and other technical experts.

(c) Submission Requirements:

01) General:

a) The application for a ground-mounted solar photovoltaic installation of two (2) acres or more shall be filed in accordance with the rules and regulations of the _____ as the SPGA.

b) Each application for a special permit shall be filed by the Application with the Town Clerk pursuant to Section 9 of Chapter 40A of the Massachusetts General Laws.

02) Required Documents: The Applicant shall provide the SPGA with nine (9) copies of the application. All plans and maps shall be prepared, stamped, and signed by a professional engineer licensed to practice in Massachusetts. Included in the application shall be:

a) Name, address, phone number, and original signature of the applicant and any co-applicants. Co-applicants may include the landowner of the subject property or the operator of the solar installation.

b) If the applicant or co-applicant will be represented by an agent, the name, address, and telephone number of the agent, as well as a written document with original signature of the applicant and co-applicant(s) authorizing the agent to represent them;

c) Documentation of the Applicant's legal right to use the proposed site, including the requirements set forth in _____ of this section.

d) A site plan showing:

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 and any pruning of existing vegetation required to prevent shading;
- 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 in the form of shop drawings or catalogue cuts 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;
- ii. Documentation of actual or prospective access and control of the project site (see also Section _____);
- iii. An operation and maintenance plan (see also Section _____);
- iv. 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);
- e) Proof of liability insurance acceptable to the Town;
- f) Description of financial surety that satisfies Section _____.
- g) A public outreach plan, including a project development timeline, which indicates how the project proponent will meet the required Special Permit notification procedures and otherwise inform

abutters and the community.

- h) Plans and documents as required by the Town's Stormwater Management and Illicit Discharge and Erosion Control By-Law and Rules and Regulations.

(d) Special Permit Review Criteria:

- 01) Open Space and Agricultural Impact: Consistent with the Town's open space preservation goals, the owner of the land on which a large-scale ground-mounted solar photovoltaic installation is proposed to be situated must submit to the SPGA a report on the open space impacts of the installation, including but not limited to:
 - a) A general description of the installation site, including proximate natural features, flora, fauna, wetlands, and waterways;
 - b) Any trees or wildlife to be displaced by the installation;
 - c) Any efforts to mitigate groundwater management issues caused by increase in impervious surface;
 - d) The suitability of the installation location for agriculture, including information about soil grade and any history of agriculture uses on the site within ten (10) years prior to special permit or site plan review; and
 - e) Any environmental remediation efforts that the owner or operator anticipates will be necessary for installation, maintenance, or removal of the installation.
 - f) In determining whether to issue a special permit, the SPGA shall consider the Open Space and Agricultural Impact report and the corresponding impacts.
 - g) 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 proscribed by applicable laws, regulations, and by-laws, including the Code of the Town of Newbury, Chapter 87, Stormwater Management and Illicit Discharge and Erosion Control. In determining whether to issue a special permit, the SPGA shall consider such impacts and efforts to mitigate them. The Applicant may be required to replace up to 100% of any and all trees with a caliper six (6) inches or over that

are removed for the project.

- h) Operation and Maintenance Plan: The applicant shall submit a plan for the operation and maintenance of ground-mounted solar photovoltaic installation as called for in paragraph (8) below.
 - i) Site Condition Suitability: All 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 means of vegetation, fencing, or physical topography to the extent reasonable and practical considering the characteristics of the individual site. In determining whether to issue a special permit, the **SPGA** shall consider the sufficiency of the architectural compatibility of the structures and efforts to screen the structures from view.
- 02) The SPGA may grant a Special Permit only upon finding that the proposed use meets the standards specified in in § 97-11.C. of Newbury's Zoning By-Law and the following general standards:
- a) The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the area, or the public health, safety, and general welfare;
 - b) The nature and intensity of the intended operations will not discourage the appropriate development and use of adjacent land and buildings nor impair the value thereof;
 - c) All proposed traffic access ways shall be adequate (but not excessive) in number, adequate in width, grade, alignment and visibility, sufficiently separated from street intersections and places of public assembly, and shall meet similar safety considerations;
 - d) Adequate safe and accessible off-street parking and loading spaces shall be provided to avoid parking in public streets of vehicles belonging to persons connected with or visiting the site, including, at a minimum, parking for three (3) trucks and two (2) automobiles;
 - e) Adequate access to each structure for fire and emergency service equipment shall be provided; keys for access to all portions of the project shall be provided to the Fire Department and the Police Department.

- f) The proposed use and development will not result in the destruction, loss, or damage of any natural, scenic, or historic feature of significant importance;
- g) The entire project site shall be screened at all seasons of the year from the view of adjacent residential lots and streets or roadways and the general landscaping of the site shall be in character with that generally prevailing in the neighborhood;
- h) The volume of cut and fill, the number of removed trees that are six (6) inches or more in caliper, the area of wetland vegetation displaced, soil erosion, and threat of air and water pollution shall be held to a minimum set by the SPGA after consultation with the Conservation Commission;
- i) Adequate provisions shall be provided for stormwater management and other utilities consistent with the functional requirements of the Newbury ~~Subdivision~~ Stormwater Rules and Regulations, the Department of Environmental Protection, and the Massachusetts Stormwater Management Handbook (as revised);
- j) Obstruction of scenic views from publicly accessible locations shall be minimized;
- k) Glare from site lighting shall be minimized;
- l) Sound impacts from transformers, inverters, and other electrical equipment shall be mitigated with the use of enclosures, shielding, and placement of the sound-generating equipment on the site.
- m) Unreasonable departure from the character, materials, and scale of buildings in the vicinity, as viewed from public ways and places, shall be minimized; and
- n) The proposed development of the site shall be in compliance with the provisions of Newbury's Zoning By-Law, including parking, signs, landscaping, environmental standards and other pertinent sections.

~~03)~~ Final Action: A Special Permit shall be granted by the SPGA after it finds in writing that all conditions described in (6)(d)02) items a) through n) have been satisfied.÷

(7) 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.

- (8) **Operation & Maintenance Plan:** The project proponent shall submit a plan for the operation and maintenance of the ground-mounted solar photovoltaic installation, which shall include measures for maintaining safe access to the installation, stormwater controls, as well as general procedures for operational maintenance of the installation.
- (9) **Notification:** No ground –mounted solar photovoltaic installation shall be constructed until evidence has been given to the Town that the owner or operator of said installation has notified the utility company that operates the electrical grid where the installation is to be located of his or her intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
- (10) **Dimension and Density Requirements.**
 - (a) **Setbacks:**
 - 01) For ground-mounted solar photovoltaic installations which occupy less than ¼ acre of land, setbacks shall be in accordance with the minimum setback requirements for the zoning district in which the installation is located.
 - 02) For all other ground-mounted solar photovoltaic installations, front, side and rear setbacks shall be as follows:
 - a) Front yard: The front yard depth shall be at least 25 feet;
 - b) Side yard: Each side yard shall have a depth of at least 25 feet;
 - c) Rear yard: The rear yard depth shall be at least 25 feet;
 - (b) **Height:** No ground-mounted solar photovoltaic installation or structure appurtenant thereto shall be more than 15 feet in height measured from the adjacent grade.
 - (c) **Appurtenant Structures:** All appurtenant structures to 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 screened from view by means of vegetation, fencing, or physical topography to the greatest extent reasonable and/or joined or clustered to avoid adverse visual impacts.
- (11) **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 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.

- (b) **Signage:** Signs on ground-mounted solar photovoltaic installations shall comply with the Town of Newbury's Sign By-Law. A sign consistent with Newbury's sign by-law 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.
- (c) **Utility Connections:** Reasonable efforts, as determined by the Building Inspector and, for installations of two (2) acres or more, the SPGA, 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.
- (d) **Noise:** Transformers, inverters, and other noise-producing electrical equipment shall be located on the site, shielded, and/or enclosed to minimize sound impacts at the property line and on sensitive receptors. The noise level shall not be more than 10 dB above ambient at the project boundary.

(12) **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 local Fire Chief and Police Chief. 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 of the installation shall identify a responsible person for public inquiries throughout the life of the installation.
- (b) **Safety Disconnect:** The solar photovoltaic installation shall be designed to disconnect from the electrical utility's system in the event that the grid experiences a power failure.
- (c) **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 by-laws.
- (d) **Security Fencing:** Black vinyl-coated chain link fencing a minimum of 8 feet high with lockable gates shall be installed around the perimeter of the installation to prevent access by unauthorized individuals. Keys shall be provided to Newbury's Fire Chief and Police Chief.

(13) **Monitoring and Maintenance:**

- (a) **Solar Photovoltaic Installation Conditions:** The 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, Police 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), except for any accepted public way.

- (b) **Modifications:** All material modifications to a solar photovoltaic installation made after issuance of the required building permit shall require approval by the Building Inspector and, where appropriate, the SPGA.

(14) **Abandonment or Decommissioning:**

- (a) **Removal Requirements:** Any ground-mounted solar photovoltaic installation which has reached the end of its useful life or has been abandoned consistent with Section [\(14\)\(b\)](#) of this By-Law 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 Building Inspector by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

- 01) Physical removal of all ground-mounted solar photovoltaic installations, structures, equipment, security barriers and transmission lines from the site.
- 02) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.
- 03) Stabilization or re-vegetation of the site as necessary to minimize erosion. The Building Inspector 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 photovoltaic installation shall be considered abandoned when it fails to operate for more than one year without the written consent of the Building Inspector and, for installations of two (2) acres or more, the SPGA. If the owner or operator of the 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.

- (c) **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 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 Town, but in no event to exceed more than 125 percent of the estimated cost of removal and compliance with the additional requirements set forth herein, as determined by the project proponent or 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 qualified engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation.