

5.8 Solar Photovoltaic ~~Overlay District~~Facilities

5.8.1 The purpose of this Section 5.8 is to facilitate the creation of Solar Photovoltaic Facilities by providing standards for the size, placement, design, construction, operation, maintenance, monitoring, modification and removal of such facilities, which standards address public safety and minimize impacts on scenic, natural and historic resources; providing adequate financial assurance for the eventual decommissioning of such facilities; and to promote the creation of new ~~large~~Large-scale-Scale Ground-Mounted Solar Photovoltaic Facilities by: establishing a Solar Photovoltaic Facility Overlay District for construction of a Large-Scale Ground-Mounted Solar Photovoltaic Facility; ~~providing standards for the placement, design, construction, operation, monitoring, modification and removal of such facilities, which standards address public safety and minimize impacts on scenic, natural and historic resources; and providing adequate financial assurance for the eventual decommissioning of such facilities.~~

5.8.2 Definitions. As used in this Section, the following terms shall have the meanings indicated:

**Roof-Mounted Solar Photovoltaic Facility.** A solar photovoltaic system that is structurally mounted to the roof of a building or structure and has a nameplate capacity of no more than 25 kW DC. Notwithstanding the above, if a higher electrical demand for the permitted uses on the lot is documented to the satisfaction of the Building Commissioner, the nameplate capacity of a Roof-Mounted Solar Photovoltaic Facility may be more than 25 kW DC, but no more than will meet the documented onsite demand.

**Accessory Ground-Mounted Solar Photovoltaic Facility.** A solar photovoltaic system and all associated equipment and structures which has a nameplate capacity of no more than 25 kW DC that is structurally mounted on the ground, is not larger than 3,000 square feet in aggregate, is accessory to the principal use on the lot, and that benefits and supports the principal use on the same lot.

**Community Ground-Mounted Solar Photovoltaic Facility.** A solar photovoltaic system and all associated equipment and structures which has a nameplate capacity of more than 25 kW DC and no more than 75 kW DC that is structurally mounted on the ground, is not larger than 9,000 square feet in aggregate, has three or more participants who shall be Carlisle residents at the time of the granting of a building permit, and is primarily designed and operated to provide benefits including electricity, net metering credits, and/or return on investment to the participants.

**Medium-Scale Ground-Mounted Solar Photovoltaic Facility.** A solar photovoltaic system and all associated equipment and structures which has a nameplate capacity of more than 75 kW DC and less than 250 kW DC that is structurally mounted on the ground, and is not larger than 30,000 square feet in aggregate.

**Large-Scale Ground-Mounted Solar Photovoltaic Facility** ~~or "Facility"~~. A solar photovoltaic system and all associated equipment and structures which has a minimum nameplate capacity of 250 kW DC that is structurally mounted on the ground, and is not larger than 1.5 acres in aggregate.

**Rear Yard.** For purposes of this section, the portion of a lot beyond the furthest point of the principal structure opposite the street frontage.

5.8.3 Modifications. All provisions of this Section also pertain to physical modifications that materially alter the type, configuration, or size of a Ground-Mounted Solar Photovoltaic Facility.

5.8.4 Roof-Mounted Solar Photovoltaic Facilities are permitted as-of-right in General Residence District A and in General Residence District B as an accessory use, subject to all generally applicable dimensional requirements including the maximum building height set forth in Section 4.6, and provided further that the facility is mounted to a building or structure that has been primarily designed and constructed for a use otherwise permitted under zoning, and is actually used as such. The exception to the maximum building height set forth in Section 4.7 shall not apply to Roof-Mounted Solar Photovoltaic Facilities.

5.8.4.1 In accordance with the foregoing, in the event that the Building Commissioner determines that the design or construction of a building or structure is driven primarily by the solar use, the proposed solar facility shall be subject to the permitting requirements applicable to the corresponding (based on size and capacity) class of Ground-Mounted Solar Photovoltaic Facility.

5.8.4.2 If both a Roof-Mounted Solar Photovoltaic Facility and an Accessory Ground-Mounted Solar Photovoltaic Facility are permitted on the same lot, the total nameplate capacity of the systems combined shall not exceed 25 kW DC or that which will meet the documented onsite demand, whichever is higher. The presence of a Roof-Mounted Solar Photovoltaic Facility on a particular lot shall not affect eligibility for Ground-Mounted Solar Photovoltaic Facilities pursuant to Sections 5.8.6, 5.8.7 or 5.8.8, nor shall the presence of such a Ground-Mounted Facility on a particular lot affect eligibility to construct a Roof-Mounted Facility otherwise allowed herein.

5.8.5 Accessory Ground-Mounted Solar Photovoltaic Facilities are permitted as-of-right in General Residence District B, but not in General Residence District A, subject to the provisions of Section 7.6.1, provided that the lot on which a Facility is located conforms with all generally applicable dimensional requirements for new lots in Residence District B. For all lots containing a principal structure, Accessory Ground-Mounted Solar Photovoltaic Facilities shall be installed in the rear yard to the extent practicable.

5.8.6 Community Ground-Mounted Solar Photovoltaic Facilities may be authorized by special permit by the Planning Board in the General Residence District B, but not in General Residence District A, subject to the provisions of Section 7.2, provided that there are no other ground-mounted solar photovoltaic facilities on the lot on which a Facility is located and the lot is a minimum of 3 acres in area and conforms with all other generally applicable dimensional requirements for new lots in Residence District B. For all lots containing a principal structure, Community Ground-Mounted Solar Photovoltaic Facilities shall be installed in the rear yard to the extent practicable.

5.8.7 A Medium-Scale Ground-Mounted Solar Photovoltaic Facility may be authorized by special permit by the Planning Board in General Residence District B, but not in General Residence District A, subject to the provisions of Section 7.2, provided that there are no other ground-mounted solar photovoltaic facilities on the lot on which it is located and the lot is a minimum of 5 acres in area and conforms with all other generally applicable dimensional requirements for new lots in Residence B. For all lots containing a principal structure, Medium-Scale Ground-Mounted Solar Photovoltaic Facilities shall be installed in the rear yard to the extent

practicable.

~~5.8.4–8~~ Location.—Large-Scale Ground-Mounted Solar Photovoltaic Facility. The Solar Photovoltaic Facility Overlay District shall consist of an area of approximately 7 acres comprised of Assessor's Map 21 Parcels 10 & 11 and a 200 ft x 200 ft portion of Map 20 Parcel 1 along its boundaries with Map 21 Parcels 10 & 9, which shall be shown on a map entitled “Property Maps, Carlisle, Massachusetts.” The location of renewable energy generation facilities in the form of a Large-Scale Ground-Mounted Solar Photovoltaic Facility shall be permitted as of right in this district.

~~5.8.5–8.1~~ Site Plan Review. No building permit shall be issued for a Large-Scale Ground-Mounted Solar Photovoltaic Facility and no modifications as described in Section 5.8.3 above shall be allowed without prior approval by the Board of Selectmen Planning Board pursuant to the Site Plan Review process set forth in Section 7.6 of these Bylaws. Notwithstanding Section 7.6.2 of these Bylaws, ~~(1) the Board of Selectmen shall not take final action on an application for a Ground-Mounted Solar Photovoltaic Facility until it has received a report and recommendation from the Planning Board and (2) a Site Plan for a Large-Scale Ground-Mounted Solar Photovoltaic Facility~~ shall be deemed constructively approved if not acted upon within one year after submission of complete plans and other materials required by Section 7.6 of these Bylaws.

~~5.8.5–19~~ Applications for Site Plan Review or Special Permit shall include evidence that the utility company that operates the electrical grid where the Facility is to be located has been informed and consents to the Ground-Mounted Solar Photovoltaic Facility owner's or operator's plan to connect to the electrical grid. Off-grid systems are exempt from this requirement.

~~5.8.6–10~~ Compliance with Laws. The construction and operation of a Ground-Mounted Solar Photovoltaic Facility shall be consistent with all applicable local, state, and federal requirements, including but not limited to the need to obtain the approval of the Historical Commission pursuant to Article IX of the General Bylaws, where applicable, and all applicable safety, construction, electrical, and communications requirements. All buildings and fixtures forming part of or associated with a Ground-Mounted Solar Photovoltaic Facility shall be constructed in accordance with the State Building Code.

~~5.8.7–11~~ Dimensional and Other Requirements. The height of all structures comprising a Ground-Mounted Solar Photovoltaic Facility shall not exceed 12 feet above the pre-existing natural grade.

5.8.11.1 For an Accessory or Community Ground-Mounted Solar Photovoltaic Facility, all setbacks from lots lines shall be at least 40 feet. The Planning Board may require, as a condition of a site plan approval, larger setbacks where appropriate for screening provided, however, that such larger setbacks shall not have the effect of rendering an Accessory Ground-Mounted Solar Photovoltaic Facility infeasible.

5.8.11.2 For a Medium-Scale Ground-Mounted Solar Photovoltaic Facility, all setbacks from lots lines shall be at least 100 feet. The Planning Board may require, as a condition of a special permit, larger setbacks where appropriate for screening.

5.8.11.3 For a Large-Scale Ground-Mounted Solar Photovoltaic Facility, all setbacks from lots lines shall be at least 40 feet. As part of Site Plan Review, the Board of Selectmen Planning Board may require larger setbacks if appropriate for screening, provided, however, that such larger setbacks shall not have the effect of rendering a Large-Scale Ground-Mounted Solar Photovoltaic Facility infeasible.

5.8.7.411.4 In addition to the special dimensional requirements included in Section 5.8.10.1-5.8.10.3, ~~All~~ all structures included within a Ground-Mounted Solar Photovoltaic Facility 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 structures, including but not limited to equipment shelters, storage facilities, transformers, and substations shall be architecturally compatible with each other. All structures associated with the Ground-Mounted Solar Photovoltaic Facility shall be reasonably~~Whenever reasonable, structures should be~~ screened from view by vegetation and/or joined or clustered to minimize adverse visual impacts.

5.8.7.211.5 All utility connections to the Ground-Mounted Solar Photovoltaic Facility shall be via underground lines. Electrical transformers for utility interconnections may be above ground if required by the utility provider; however, they shall be screened from view.

5.8.7.311.6 Lighting of a Ground-Mounted Solar Photovoltaic Facility shall be consistent with local, state, and federal law. Lighting of other parts of the Facility, 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 Facility shall be directed downward and away from residential structures and shall incorporate full cut-off fixtures to reduce light pollution.

5.8.7.411.7 A sign at ~~the a~~ Ground-Mounted Solar Photovoltaic Facility shall be required to identify the owner and operator of the Facility and provide a 24-hour emergency contact phone number. The Facility shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the Facility.

5.8.7.511.8 The Facility owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the Carlisle Fire Department. Upon request, the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the Facility shall be clearly marked. The owner or operator shall identify and provide the Town with contact information for a responsible person for public inquiries throughout the life of the Facility.

5.8.7.611.9 Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the Ground-Mounted Solar Photovoltaic Facility, or otherwise prescribed by applicable laws, regulations, and bylaws.

5.8.11.10 Additional Findings for Special Permits. In addition to the findings required pursuant to Section 7.2.1, a special permit authorizing a Community or Medium-Scale Ground Mounted Solar Photovoltaic Facility shall require the Board to find as follows:

5.8.11.10.1 The visibility impact to all abutting properties has been adequately addressed through natural screening, landscaping, fencing, or otherwise;

5.8.11.10.2 The site provides the solar access necessary to make the project feasible as proposed; and

5.8.11.10.3 Site clearing and tree removal will be kept to a minimum, and other impacts to the environment will be avoided or adequately managed.

5.8.8-12 Maintenance. The owner, operator, successors, and assigns of the Ground-Mounted Solar Photovoltaic Facility shall maintain the Facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and ensuring the integrity of security measures, and otherwise shall be maintained as set forth in any Operations and Maintenance Plan approved pursuant to Site Plan Review by the Planning Board. Site access shall be maintained by the owner or operator of the Facility at its sole cost, unless any access road(s) are accepted as a public way.

#### 5.8.9-13 Abandonment or Decommissioning

5.8.913.1. Removal Requirements: Any Ground-Mounted Solar Photovoltaic Facility that has reached the end of its useful life or has been abandoned consistent with sub-section 5.8.913.2 of this section shall be removed. The owner or operator shall physically remove the Facility no more than 180 days after the date of discontinued operations. The owner or operator shall notify the Building Commissioner by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning of the Facility shall consist of:

Physical removal of the Facility and all associated structures, equipment, security barriers, cables, and transmission lines from the site;

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

Stabilization or re-vegetation of the site as necessary to minimize erosion. With prior written authorization from the Board of Selectmen Planning Board, the owner or operator of the Facility may leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

5.8.913.2 Abandonment: Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the Facility shall be considered abandoned when it fails to operate for more than one year without the written consent of the Board of Selectmen Planning Board. If the owner or operator of the Facility fails to remove the Facility in accordance with the requirements of this section within 180 days of abandonment or the proposed date of decommissioning, the Town may enter the property and physically remove the Facility.

5.8.913.3 Financial Surety: The owner or operator of ~~the~~ a Medium-Scale or Large-Scale Ground-Mounted Solar Photovoltaic Facility shall provide a form of surety acceptable to the ~~Board of Selectmen Planning Board~~, either through escrow account, bond or otherwise, to cover the cost of removal in the event the Town must remove the Facility and restore the landscape, in an amount and form determined to be reasonable by the ~~Board of Selectmen 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. Such surety will not be required for a municipally- or state-owned Facility. The project owner or operator shall submit a fully inclusive estimate of the costs associated with removal of the Facility, prepared by a qualified engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation. Upon a showing of good cause, the Planning Board may accept a surety that is effective for a fixed term of less than the anticipated useful life of the project, subject to a special permit condition specifically requiring that a substitute surety, otherwise acceptable and consistent with this section, is provided before the surety expires, so that the Town's surety remains effectively uninterrupted.