

# Town Meeting Warrant Article

## **Warrant Article:**

Identifier: (to be determined by office) Article # \_\_\_\_\_

## **Title:**

### **Zoning By-Law Amendments:**

**Article 5 Section 590 Solar Energy Generation Facilities, Article 3 Section 320 Use Table, and Article 16 Definitions**

## **Warrant Article:**

To see if Town Meeting will delete Article 5 Section 590 of the Wareham Zoning By-Laws in its entirety and to replace it with the version of the Article 5 Section 590 Solar Energy Generation Facilities bylaw as presented and to make revisions as presented to Article 3 Section 320 Use Table and Article 16 Definitions of the Wareham Zoning By-Laws as necessary and related to Article 5 Section 590 or to take any action relative thereto.

## **Motion:**

I move that Town Meeting vote to delete Article 5, Section 590 of the Wareham Zoning By-Laws in its entirety and to replace it with the version of Article 5 Section 590 Solar Energy Generation Facilities bylaw as presented and to make revisions as presented to Articles 3 Section 320 Use Table and Article 16 Definitions of the Wareham Zoning By-Laws as necessary and related to Article 5 Section 590.

## **Explanation:**

Revisions to Section 590 and other supporting bylaw sections of the Wareham Zoning By-Law have been made by the Solar Bylaw Study Committee after careful consideration and significant community input.

The Committee, comprised of seven Wareham citizens of diverse backgrounds, has aimed to balance the rights of landowners to use their land to develop solar energy systems while being committed to protecting the health, safety and welfare of our diverse communities including but not limited to the environmental justice and elderly populations and to preserve the natural environment.

The goal is to encourage the responsible use of solar energy generation facilities, encourage construction and operation of Large-Scale Ground-Mounted Solar Photovoltaic Installations in previously disturbed areas to minimize adverse ecological impacts, to provide standards for the placement, design, construction, monitoring and modification of large-scale ground-mounted solar energy facilities that address public safety, minimize impacts such that no person is deprived of the freedom from excessive or unnecessary glare or noise, scenic, natural and historic resources of the Town and provide adequate financial assurance for decommissioning.

Revisions to Section 590 of the Wareham Zoning By-Law encourages the use of solar energy systems and protects solar access consistent with Massachusetts General Laws Chapter 40A Section 3 and Section 9B (Solar Access) and Green Communities Act M.G.L. Chapter 25A Section 10. This section of the Wareham Zoning By-Law is consistent with Wareham's 2020 Master Plan (page 76) and 2017-2024 Open Space and Recreation plan (pages 88-90) as they recognize the need to protect water and wildlife habitat resources while providing opportunities to increase resiliency from the effects of climate change with green infrastructure and conservation of forests and farmland..

Revisions to Section 590 incorporate the MA state model by-law and Department of Energy Resources SMART program guidance (225 CMR 20.00 September 22, 2021) that strongly discourages siting such projects in areas of important habitat. They strongly discourage locations that result in significant loss of natural resources and encourage rooftop siting, as well as locations in industrial and commercial districts, on farms where appropriate and on vacant, previously disturbed land. Section 590 of the Wareham Zoning By-Law recognizes that significant tree cutting is problematic because of the important water management, cooling, and climate benefits trees provide.

Submitted by: Solar By-Law Study Committee; Nancy McHale Chair

Date: March 9, 2022; revised March 24, 2022

Reference Information:

Article Inserted by Board of Selectmen at the request of: Solar By-Law Study Committee

## 590 Solar Energy Generation Facilities

### 591. Purpose

The purpose of section 590 of the Wareham Zoning By-Law is to encourage the responsible use of solar energy generation facilities, encourage construction and operation of Large-Scale Ground-Mounted Solar Photovoltaic Installations in previously disturbed areas to minimize ecological impacts, to provide standards for the placement, design, construction, monitoring, modification and removal of large-scale ground-mounted solar energy facilities that address public safety, minimize impacts on environmental justice communities such that no person is deprived of the freedom from excessive or unnecessary glare or noise, scenic, natural and historic resources of the Town and provide adequate financial assurance for decommissioning.

Section 590 of the Wareham Zoning By-Law aims to balance the rights of landowners to use their land to develop solar energy systems while protecting the health, safety, and welfare of the public by protecting the Plymouth/Carver sole source aquifer upon which all residents rely for drinking water, the abundant small streams that feed the watersheds and estuaries leading to Buzzards Bay.

Section 590 of the Wareham Zoning By-Law encourages the use of solar energy systems and protects solar access consistent with Massachusetts General Laws Chapter 40A Section 3 and Section 9B (Solar Access) and Green Communities Act M.G.L. Chapter 25A Section 10. This section of the Wareham Zoning By-Law is consistent with Wareham's 2020 Master Plan and 2017-2024 Open Space and Recreation plan as they recognize the need to protect water and wildlife habitat resources while providing opportunities to increase resiliency from the effects of climate change with green infrastructure and conservation of forests and farmland.

Section 590 of the Wareham Zoning By-Law seeks to satisfy the MA state guidance that strongly discourages siting such projects in forested areas such as the globally rare Pine Barrens.

Section 590 of the Wareham Zoning By-Law strongly discourages locations that result in significant loss of ecosystem values and natural resources, including farm and forest land, and encourages rooftop siting, as well as locations in industrial and commercial districts, or on vacant, previously disturbed land.

Section 590 of the Wareham Zoning By-Law recognizes that significant tree cutting is problematic because of the important water management, cooling, and climate benefits trees provide. According to Tufts.edu, forests pull about one-third of all human-caused carbon dioxide emissions from the atmosphere each year. Researchers have calculated that ending deforestation and allowing mature forests to keep growing could enable forests to take up twice as much carbon.<sup>1</sup>

### 592. Applicability

All Large-Scale Ground-Mounted Solar Photovoltaic Installations proposed to be constructed after the effective date of Section 590 of the Wareham Zoning By-Law will be subject to Site Plan Review in accordance with Article 15 of this Zoning By-Law and the additional standards of this section.

Section 590 of the Wareham Zoning By-Law also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment that occur after the effect date.

The provisions set forth in section 590 of the Wareham Zoning By-Law shall take precedence over all other sections when considering applications related to the construction, operation, and/or repair of Large-Scale Ground-Mounted Solar Photovoltaic Installations unless there is a

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<sup>1</sup> <https://now.tufts.edu/articles/curb-climate-change-easy-way-don-t-cut-down-big-trees#:~:text=Forests%20pull%20about%20one%2Dthird,up%20twice%20as%20much%20carbon.>

conflict within provisions of Section 590, the MORE RESTRICTIVE section shall take precedence.

592.1 Compliance with Laws, Ordinances and Regulations

The construction and operation of all Large-Scale 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, and communications requirements.

All Large-Scale Ground-Mounted Solar Photovoltaic Installations must meet all the Land Use and Siting Criteria, per 225 CMR 20.05(5)(e).

592.2 Special Permit Granting Authority (SPGA)

The Planning Board shall be the Special Permit Granting Authority for **Large-Scale** Ground-Mounted Solar Photovoltaic Installations requiring a Special Permit under this by-law.

592.3 Site Plan Review Authority

The Planning Board shall be the Site Plan Review Authority for **Large-Scale Ground-Mounted Solar Photovoltaic Installations** under this by-law.

593. Application for Site Plan Review

Application for Site Plan Review with Special Permit shall require the filing of a Site Plan Review with Special Permit application and site plan in accordance with Article 15 of the Wareham Zoning By-Law.

No Large-Scale Ground-Mounted Solar Photovoltaic Installations shall be approved or constructed until evidence has been given to the permit granting authority that the utility company that operates the electrical grid where the installation is to be located has been informed of the large ground-mounted solar energy facilities owner or operator's intent to install an interconnected customer-owned generator.

Off-grid systems shall be exempt from this requirement.

Such plans shall contain the following specific information for an application to be considered complete:

- 593.1 Landscape plan including sizes, types and numbers of plantings and details. Existing vegetation and other unique land features shall be preserved where feasible.
- 593.2 Proposed changes to the landscape of the **project area** grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures.
- 593.3 Plans of the Large-Scale Ground-Mounted 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.
- 593.4 Certification from a professional engineer that the construction of the Large-Scale Ground-Mounted Solar Photovoltaic Installation meets the Performance Standards set forth 225 CMR 20.05(5)(e)6.
- 593.5 A stormwater management plan detailing the existing environmental and hydrological conditions of the project area, proposed alterations of the **project area** and all proposed components of the drainage system and any measures for the detention, retention, or infiltration of water, for the protection of water quality and protection from flooding. Specific attention shall be paid to the potential for negative effects on streams and wetlands such as silting from runoff.

- 593.6 A description of the Solar Photovoltaic Installation and the technical, economic and other reasons for the proposed location and design shall be prepared and signed by a registered professional engineer.
- 593.7 Confirmation prepared and signed by a registered professional engineer that the Solar Photovoltaic Installation complies with all applicable Federal and State standards.
- 593.8 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 over current devices.
- 593.9 Documentation of the major system components to be used, including the photovoltaic panels, mounting system, inverters, on-site accessory battery storage, and any other associated equipment.
- 593.10 Documentation of the sound generated by equipment used in the production of electrical energy, including any proprietary documentation.
- 593.11 An operation and maintenance plan (see also section 596 on decommissioning). Such plan should include:
1. Regular (not less than annual) inspection of the property, the visual screening, the fencing, and all other equipment installed as part of the project. The inspection shall identify all repairs and maintenance required to maintain the fencing, noise buffering and visual screening. A plan and timeline for effecting the maintenance must be submitted to the SPGA.
  2. Regular (windblown, litter, etc) trash and debris removal from the site.
  3. A description of property and landscape maintenance plan, including all required vegetative plantings and screening.
  4. The operations and management plan must include active maintenance of the vegetation for the duration of the project. Use of herbicides and pesticides shall be prohibited for the maintenance of the project site except where necessary in dual use agriculture in accordance with the Pesticide Control Act. Landscape Requirements should include all requirements listed in Article 10 of the Zoning Bylaw.
- 593.12 An assessment of the impact on the environment formatted in a before / after method so that it is easy to measure and understand the changes that the proposed Solar Photovoltaic Installation will have on the property and the property abutters. Such reports will be conducted by a party mutually agreed upon by the Planning Board and the prospective developer.
- 593.13 An evaluation of the impact on the wildlife, habitat, and endangered species to determine potential harm to wildlife and habitat by the proposed Solar Photovoltaic Installation. The evaluation will be conducted by a party mutually agreed upon by the SPGA and the prospective developer.
- 593.14 Line of Sight study to determine visual impact from all directions. All panels and equipment associated with the Solar Photovoltaic Installation should be invisible to any residential home in Wareham, as well as from any public or private road. The Study will be conducted by a party mutually agreed upon by the SPGA and the prospective developer
- 593.15 All applicants must provide a historical and cultural heritage evaluation on the potential impact of the Solar Photovoltaic Installation. The evaluation(s) will be conducted by a party mutually agreed upon by the SPGA and the prospective developer
- 593.16 An alternative use analysis that addresses other siting options with various environmental impacts. Financial impacts are not sufficient reason for approval of project with significant environmental impact

## 594. Siting

No Solar Photovoltaic Installation shall be constructed, installed or modified without first obtaining a building permit.

### 594.1 Prohibited Siting

Solar Photovoltaic Generation Units sited on the following types of parcels are not allowed:

1. Permanently protected open space, categorized under Article 97 of the Massachusetts Constitution,
2. A Wetland Resource Area, not including Buffers, unless authorized by the regulatory body, such as an Order of Conditions issued by the local Conservation Commission; or
3. State Historic Register properties
4. Land that is Priority Habitat, Core Habitat, Estimated Habitat, and/or Critical Natural Landscape or where at least 50 percent of the parcel's area is designated as Priority Habitat, Core Habitat, and/or Critical Natural Landscape
5. Large-Scale Ground-Mounted Solar Photovoltaic Installations sized greater than 5,000kW DC.

### 594.2 As-of-Right Siting

The following types of solar facilities are allowed anywhere or as noted:

1. Small-Scale Ground-Mounted Solar Photovoltaic Installations (less than 250 kW DC) are permitted as-of-right in all districts when connected behind the meter.
2. Roof-mounted or building-mounted solar energy facilities are permitted as-of-right in all districts when connected behind the meter.

### 594.3 Restricted Siting

Large-Scale Ground-Mounted Solar Photovoltaic Installations sized between 250kw and 5,000kW are allowed, subject Site Plan Special Permit, in the R-130, R-60, CG, CS, IND, CR districts or as noted:

1. Ground-mounted solar energy facilities sited on a Brownfield,
2. Ground-mounted solar energy facilities sited on Eligible landfills,
3. Ground-mounted solar energy facilities sited on sand and/or gravel pits,
4. Canopy mounted solar energy facilities,
5. Public Utility solar energy facilities,
6. Ground-mounted solar energy facilities within a farm or existing agricultural land,
7. Ground-mounted solar energy facilities sited on land that has been previously disturbed.

## 595. Design Standards.

Unless otherwise expressly provided by Section 590 of the Wareham Zoning By-Law requirements of the underlying zoning district shall apply, except and in addition, the following design standards which shall apply.

### 595.1 Large-Scale Ground-Mounted Solar Photovoltaic Installations shall meet the following standards:

1. No such installation shall be segmented or broken into separate ownerships so as to avoid the prohibitions of the by-law.

2. Meet the requirements and standards for industrial uses found in Article 7: Design Standards and Guidelines of this Zoning By-Law.
3. The distance shall be 75 feet from the residential property line which may be increased to reduce or eliminate visibility and noise at the discretion of the SPGA.
4. Required separation in commercial and industrial districts, the distance shall be 25 feet which may be increased to reduce visibility and noise at the discretion of the SPGA
5. The front, side, and rear yard depth shall be in accordance with Article 6 of the Wareham Zoning By-Law; provided, however, that where the lot abuts or is across the street from a Residential Neighborhood, the front yard setback for all structures including fencing and vegetated buffer shall not be less than 75 feet, and may be more, as determined at the sole discretion of the SPGA, depending on visibility of the facility because of the density of vegetation and/or topography.
6. Earthen berms and landscape plantings will be required according to Article 10: Landscaping, of this Zoning By-Law.
7. Significant regrading of the site is prohibited. Any and all soil removal must be approved and consistent with Article III, Earth Removal Regulations of the Town By-Law.
  - No removal of all field soils;
  - Existing leveled field areas left as is without disturbance;
  - Where soils need to be leveled and smoothed, such as filling potholes or leveling, this shall be done with minimal overall impact with all displaced soils returned to the areas affected.
8. Landscaping:
  - No removal of all field soils,
  - All vegetative screening will be designed with plants that include a diversity of native species, including deciduous and evergreen plants.
  - A mix of native species including evergreen and deciduous trees, as well as native bushes and plants to be used as ground cover sufficient to maintain soil integrity and minimize soil erosion must be established and maintained for the life of the project.
  - Appropriate use of geotextile fabrics,
  - The SPGA will consider the quality of the landscape plan and the methods used to provide a visual buffer and noise barrier between the PV array and the residences around it.
9. Ballasts, screw-type, or post driven pilings and other acceptable minimal soil impact methods that do not require footings or other permanent penetration of soils for mounting are required, unless the need for such can be demonstrated; the use of chemically treated timbers to mount solar panels is prohibited.
10. Any soil penetrations that may be required for providing system foundations necessary for additional structural loading or for providing system trenching necessary for electrical routing shall be done with minimal soils disturbance, with any displaced soils to be temporary and recovered and returned after penetration and trenching work is completed;
11. No concrete or asphalt in the mounting area other than ballasts, poles for mounting solar panels, or other code required surfaces, such as transformer or electric gear pads;

12. Address existing soil and water resource concerns that may be impacted to ensure the installation does not disturb an existing soil and water conservation plan or to avoid creating a negative impact to soil and water conservation best management practices, such as stimulating erosion or water run-off conditions;
13. All large-scale ground-mounted solar energy facilities shall be required to be fenced only if necessary for public safety. Any fencing used shall be permeable to allow small wildlife to pass through, and designed to blend into the surrounding landscape.
14. All appurtenant structures, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other and shall be screened from the view of public rights-of-ways and persons not on the parcel, in all residential districts.
15. Battery storage systems may be included in a project only when accessory to the PV array collection system utilized for solar power generated as part of the approved project. Hazards associated with the battery storage will be identified and addressed in the system's operation and management plan as a requirement for the Special Permit. The items to address in the operation and management plan shall include; noise, fire, and hazardous material management.
16. Access roads and driveways shall be designed to limit visibility into the site with minimum disturbance necessary to gain appropriate access to and around the arrays. Setbacks shall not be disturbed by access roads, except where allowed by the permit granting authority for access to the site.
17. Lighting of solar energy facilities shall be consistent with state and federal law. Lighting of 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 photovoltaic installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution. Lighting shall be Night Sky program compliant.
18. There shall be no signs, except announcement signs, no trespassing signs or any signs required to warn of danger. A sign is required that identifies the owner and operator with an emergency telephone number where the owner and operator can be reached on a twenty-four hour basis.
19. All utility connections shall be underground except to the extent that underground utilities are not feasible in the reasonable determination of the board review.
20. Inverters and transformers shall be sited so as to minimize sound impact to residences. Noise levels at the nearest residential receptors will be determined for all equipment in combination, and must be at background levels for the district in which the receptors are located, and if not, will require mitigation that must be approved as conditions of the Special Permit issued by the SPGA.
21. Solar photovoltaic panels should be positioned so as not to cast glare to abutting uses by providing screening methods. Setbacks shall provide for adequate screening of noise and glare from abutting uses and structures. Techniques such as dense natural vegetated plantings of native plants, earthen berms and/or increased setbacks will be required, depending upon site specific conditions. Setbacks shall not be disturbed by access roads, except where allowed by the permit granting authority for access to the site. Setbacks shall not be used for any purpose other than natural vegetation or other screening required by the reviewing board. Setbacks from property lines shall be as provided above for the type of large ground-mounted solar energy facilities.
22. The Solar Photovoltaic Installation owner, operator or their successors shall provide a copy of the project summary, electrical schematic, and site plan to the applicable fire



chief. Upon request the Solar Photovoltaic Installation owner, operator or their successors shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the large ground-mounted solar energy facilities shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

23. The Solar Photovoltaic Installation owner, operator or their successors shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures and planting and maintaining healthy native plants for vegetative visual screening.
24. Site access shall be maintained to a level acceptable to the applicable fire chief and Emergency Medical Services. The Solar Photovoltaic Installation owner, operator or their successors shall be responsible for the cost of maintaining the large ground-mounted solar energy facilities and any access road(s), unless accepted as a public way.

#### 596. Abandonment or Decommissioning

The Solar Photovoltaic Installation owner, operator or their successors in interest shall remove any ground-mounted solar energy facility which has reached the end of its useful life or has been abandoned. 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 permit granting authority by certified mail 60 days prior to the proposed date of discontinued operations and plans for removal.

596.1 Decommissioning shall consist of but not limited to:

1. Physical removal of all below-grade foundations, mounting structures, supports, solar energy 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 and re-vegetation of the site as necessary to minimize erosion. The SPGA may allow the Solar Photovoltaic Installation owner, operator or their successors to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

596.2 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 permit granting authority. If the Solar Photovoltaic Installation owner, operator or their successors fail 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.

596.3 Proponents of Solar Photovoltaic Installations 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, equivalent to 200 percent of the cost of removal and compliance with the additional requirements set forth herein.

The amount of the cost of removal and reconditioning shall not be reduced by any expected or estimated amounts to be recovered through the re-sale or recycling of materials. Such surety will not be required for municipal- or state-owned facilities.

The Proponent shall submit a fully inclusive estimate of the costs associated with removal and reconditioning, prepared by a qualified engineer. The submission shall include a mechanism for calculating and adjusting the increased value of the surety removal costs

due to inflation and a regular review (not less than every five-years) and adjustment of the estimate shall be conducted. In no case will the surety be reduced.

597. Criteria for Special Permit Review and Approval

- 597.1 A Special Permit may be granted under this section if the SPGA finds that each of the design review standards set forth above have been met and that the location of the ground-mounted solar energy facilities is suitable and that the size and design are the minimum necessary for that purpose.
- 597.2 The SPGA shall also impose, in addition to any applicable conditions specified in this section, such conditions as it finds reasonably appropriate to safeguard the neighborhood, public or otherwise serve the purposes of this section, including, but not limited to: screening, lighting, noise, fences, modification of the exterior appearance of the structures, limitation upon size, method of access or traffic features, parking, removal upon cessation of use or other requirements. Such conditions shall be imposed in writing and the applicant may be required to post bond or other surety for compliance with said conditions in an amount satisfactory to the SPGA.
- 597.3 The Special Permit shall lapse if substantial use or construction has not commenced within two years of the date of issuance, except for good cause shown (including but not limited to appeals of the grant of the site plan or litigation enjoining the construction under the permit), and provided further that such construction, once begun, shall be actively and continuously pursued to completion within a reasonable time.

## **Article 16 Revisions to 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 requires a building permit and may be subject to site plan review to determine conformance with local zoning ordinances or bylaws. Projects cannot be prohibited, but can be reasonably regulated where necessary to protect public health, safety or welfare by the Inspector of Buildings, the Select Board, or the Planning Board.

**Battery Energy Storage Management System:** An electronic system that protects energy storage systems from operating outside their safe operating parameters and disconnects electrical power to the energy storage system or places it in a safe condition if potentially hazardous temperatures or other conditions are detected.

**Battery Energy Storage System:** A battery energy storage system (BESS) is an electrochemical device that charges (or collects energy) from the electrical grid or an electricity generating facility, such as but not limited to a Large-Scale Ground-Mounted Solar Photovoltaic Installation, and then discharges that energy at a later time to provide electricity or other grid services when needed.

**Environmental Justice Communities:** A neighborhood is defined as an Environmental Justice population if one or more of the following four criteria are true: 1) the annual median household income is not more than 65 per cent of the statewide annual median household income; 2) minorities comprise 40 per cent or more of the population; 3) 25 per cent or more of households lack English language proficiency; or 4) minorities comprise 25 per cent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 per cent of the statewide annual median household income.

**Large-Scale Ground-Mounted Solar Photovoltaic Installation / Large-Scale Ground Mounted Solar Energy Systems:** A solar photovoltaic system that is structurally mounted on the ground and has a minimum nameplate capacity of 250 kW DC.

**On-Site Solar Photovoltaic Installation:** A solar photovoltaic installation that is constructed at a location where other uses of the underlying property occur. This would include Dual-Use installations as defined in the Massachusetts SMART program.

**Off-Grid System:** A solar photovoltaic installation where all energy generated on the installation site is consumed on that site and does not send any energy into the electrical grid for distribution.

**Permanently protected open space:** Areas shown on the BioMap2 image layer of the MassGIS database, further described at <https://www.mass.gov/service-details/biomap2-conserving-biodiversity-in-a-changing-world>

**Pine Barrens:** Consist of outwash from the last glacial maximum, which left thick glacial deposits of sand and gravel, providing the geologic foundation for a rare pine barren ecosystem. This forest and its fire-dependent pitch pine, the endangered Plymouth red-bellied turtles and other globally rare plant communities on top of deep deposits of glacially-deposited sands which filter and protect the Plymouth/Carver Sole Source Aquifer.

**Previously Developed Areas or Previously Disturbed Areas including agricultural land:** Land is disturbed if it has been the subject of human activity that has changed the land's surface, being changes that remain clear and observable

Includes the built environment such as impermeable surfaces like large rooftops, parking lots, as well as land that was subject to earth removal and land in active agricultural use.

Does not include wetlands, bogs or associated forested upland.

Priority Habitat, Core Habitat, Estimated Habitat, and/or Critical Natural Landscape: Areas shown on the BioMap2 image layer of the MassGIS database, further described at <https://www.mass.gov/service-details/biomap2-conserving-biodiversity-in-a-changing-world>

Project Area: The land under the Solar Photovoltaic including all areas within any fencing, all components of the system including all supporting structures, buffers, setbacks, access ways, vegetative screening, and any other land disturbed during installation.

Rated Nameplate Capacity: The maximum rated output of electric power production of the solar photovoltaic system in Direct Current (DC).

Residential neighborhoods: shall consist of at least 3 [three] occupied houses with at least one common lot line and a common street for access

Small-Scale Ground-Mounted Solar Photovoltaic Installation: A solar photovoltaic system that is structurally mounted on the ground and has a minimum nameplate capacity of under 250 kW DC and less than one acre in size.

Solar Energy: Radiant energy received from the sun that can be collected in the form of heat or light by a solar energy system.

Solar Energy System: A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage, and distribution of solar energy for space heating or cooling, electricity generation, or water heating.

Solar Photovoltaic Array: An arrangement of solar photovoltaic panels.

Solar Photovoltaic Generation Units: An arrangement of solar photovoltaic panels.

Solar Photovoltaic Installation: A solar energy system that converts solar energy directly into electricity through an arrangement of solar photovoltaic panels.

Solar Photovoltaic Installation Site Plan [or Special Permit] Review: A review by the site plan reviewing authority [or special permit granting authority] to determine conformance with the town's zoning bylaws.

State Historic Register: the Inventory of Historic and Archeological Assets, maintained by the Massachusetts State Historic Preservation Office

Wetland Resource Area: those resources identified in 310 CMR 10.00 et seq.

**Article 3 – Revisions to Use Table**

PRINCIPAL USE	R130	R60	R43	R30	MR30	WV1	WV2	OV1	OV2	CS	CG	CP	CNF	MAR	INS	IND
Large ground-mounted solar energy	SPR	SPR	N	N	N	N	N	N	N	N	SPZ	SPZ	N	N	N	N

Change the Row For: “Large ground-mounted solar energy to read: “Large-Scale Ground-Mounted Solar Photovoltaic Installations”

And in the 'CG' and 'CP' columns change the 'SPZ' to 'SPP' allowed by Special Permit from the Planning Board

And in the 'IND', and 'CS' columns change the “N” to ‘SPP’ allowed by Special Permit from the Planning Board