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FINAL REPORT AND RECOMMENDATION OF THE PLANNING BOARD TO AMEND THE ZONING BYLAW TO CREATE GROUND-MOUNTED SOLAR PHOTOVOLTAIC SYSTEM REQUIREMENTS

DATE OF PUBLICATION OF PUBLIC HEARING: July 20, 2016
July 27, 2016

DATE OF PUBLIC HEARINGS: August 8, 2016

VOTE: On September 12, 2016, the Planning Board voted (5-0) to support the following amended language to Town Meeting:

NEED AND JUSTIFICATION:

Massachusetts General Laws (Chapter 40A §3) states that "No zoning by-law shall prohibit or unreasonably regulate the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, **except where necessary to protect the public health, safety or welfare."** Therefore, the Town cannot prohibit the construction of solar energy systems but can establish **reasonable** regulations.

A solar energy system is defined in G.L. c. 40A, Section 1A:
"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 generating, or water heating.

Plymouth's Zoning Bylaw provides no guidance relative to regulating solar energy systems. The term solar energy systems or even the word solar do not appear in the zoning bylaw. It is not listed as an allowed, special permit or prohibited use in any district (commercial, industrial or residential).

Recently, the Town has permitted a growing number of commercial-scale, ground-mounted solar facilities but currently we have no standards covering the proper installations of such facilities. In the total absence of any guidance, the Planning Board is forced to deal with each case on an ad hoc basis.

This amendment establishes reasonable standards and protections for neighboring residential areas and the Town as a whole which may reduce exposure to costly litigation.

The amendment includes provisions that

- Only apply to ground mounted facilities;

- Require site plan review by the Planning Board on projects within residential zones.
- Prohibit large scale commercial solar facilities (over fifteen acres);
- Establishes natural vegetated buffers and screening measures;
- Establishes removal and decommissioning provisions; and
- Includes stormwater standards.

The following solar facilities are exempt from this amendment:

- Rooftop systems;
- Ground mounted system under 1,500 square feet in size
- Systems located on agricultural land and used for energy generation for the agricultural use; and
- Systems located on commercial and industrial districts.

INTENT:

The intent of this bylaw is to promote the generation of solar energy while preserving the natural environment and supporting reduction of Plymouth's carbon footprint.

PROPOSED AMENDMENT:

To be inserted:

205-3 Definitions

ACTIVELY OCCUPIED – As applied to the site of a GMSPS, that portion of a Development Site that contains the solar array, accessory structures, interconnection infrastructure and internal vehicle access roads.

DISTURBED AREA – Land which, due to human activity or as a result of natural forces, including but not limited to fire or flooding, is devoid of significant naturally occurring vegetation, the topography of which has been significantly altered or destabilized by any means.

GRID – Power transmission system used to transfer electricity from generation facilities to commercial and residential electric loads.

GROUND-MOUNTED – A solar energy system installed directly on the ground through various ground-mounting technologies which may include fixed, passive tracking or active tracking metal racking.

GROUND-MOUNTED SOLAR PHOTOVOLTAIC SYSTEM (GMSPS) – A ground-mounted, solar energy system that is either:

1. Located on land in agricultural use as defined in G. L. c.128, § 1A and used primarily for the accessory generation of energy for the operation of the agricultural use, or:
2. Installed for the principal purpose of selling generated electricity to the grid.

205-77. Ground-Mounted Solar Photovoltaic Systems

A. **Intent.** The intent of this bylaw is to promote, by-right, subject to Site Plan Review, in all Districts, the generation of solar energy and to minimize the impacts of solar facilities on the character of neighborhoods, on property values, on the scenic, historic and environmental resources of the Town; and to protect health and safety, while allowing solar energy technologies to be utilized.

B. **Location and Area Requirements.**

Except as otherwise provided herein, GMSPS are allowed by right in all zoning districts subject to Site Plan Review under Section 205-32.

1. Site Plan Review is not required for a GMSPS that:

   a. Actively occupies 1,500 square feet or less of land and has a total GMSPS height of less than 8 feet from final grade, subject to Section C.2.e.; or

   b. is located on agricultural land, and used primarily for the accessory generation of energy for the operation of the agricultural use; or

   c. is located on a Development Site consisting primarily of Disturbed Area and, if located within any of the following Districts, provided a minimum 200-foot Buffer is in place along each Lot line that abuts a Residential District:

      I. Airport (AP)
      II. Arterial Commercial (AC)
      III. General Commercial (GC)
      IV. Highway Commercial (HC)
      V. Light Industrial (LI)
      VI. Light Industrial/Waterfront (LI/WF)
      VII. Mixed Commerce (MC)
      VIII. Parking Lots
      IX. Power Line Utility Easements

2. Prohibited.

   a. A GMSPS that actively occupies more than Fifteen acres in area.

   b. GMSPS are not allowed on parcels in R20-SL, R20-MD, R20-MF, R25, R40 and RR zones that have been previously disturbed (i.e. cleared or substantially cleared of natural vegetation by other than natural forces such as fire or flood) for a period of five years from the date of disturbance.

C. **Standards.** The following standards apply to all GMSPS:

1. **Setback** – A GMSPS site and construction thereon shall conform to the dimensional and intensity requirements set forth in Table 5 of the Zoning Bylaw.

2. **Design** –

   a. **Lighting** – High efficiency lighting, such as LED, or equivalent, shall be limited to that required for safety and operational purposes, and shall comply with the requirements of §205-65 Prevention of Light Pollution.

   b. **Utility Connections** – Cabling and utility connections within the GMSPS shall be placed underground.

   c. **Security** – The GMSPS must be physically secured by measures including, but not limited to, appropriate fence material, construction, locking devices and surveillance equipment.

   d. **Signage** –

      i. Required: A sign complying with Sign bylaw §205-19 shall identify the owner and operator, if not the same, and provide the following information: business name for any company or other entity owning and/or operating the installation, with the business address and name of a contact person for each; electric utility or other safety warnings and a 24-hour emergency contact phone number.

      ii. Prohibited: Any advertising display.

   e. All emergency vehicle access ways shall conform to dimensional requirements of the Plymouth Fire Department.

   f. Screening, as defined in §205-3, shall be installed to shield residences from a GMSPS.

   g. Buffers as defined in §205-3 are required as follows:

      i. A minimum of 75 feet for 1 to 2 MW DC systems;

      ii. A minimum of 150 feet for systems greater than 2 MW DC.

3. **Land Clearing, Soil Erosion and Habitat Impacts.**

   a. Clearing of native vegetation on any undeveloped or land in its natural state shall be limited to that necessary for the construction, operation and maintenance of the GMSPS. Effective internal storm water management and erosion control features shall be maintained at all times during and post-construction. Installed fencing shall maintain a minimum distance of 8 inches from final grade for small wildlife passage.

   b. Stormwater management controls shall comply with Plymouth's Stormwater Design Guidelines. Percolation tests will be required if no stormwater system controls are provided.

   c. Management of all vegetated areas within the GMSPS shall be maintained throughout the life of the project through mechanical means and without the use of chemical herbicides.

4. **Information Required with Zoning Permit for all GMSPS.**

   a. **Landscape Plan** – A landscape plan prepared by a Registered Landscape Architect is required and shall include location of existing significant trees, shrubs and grasses to remain and all proposed additions, identified by specimen size and species at installation. Low growth vegetation shall be planted and maintained in areas under GMSPS rack equipment.

   b. **Materials** – Manufacturer's specifications for a proposed GMSPS shall be provided for all equipment and attendant facilities and include documentation of the major system components to be used, including panels, mounting system, rated name plate capacity, colors, inverter and interconnection details.

   c. **Safety** – The GMSPS Owner or Operator shall submit a copy of the project summary, electrical schematic, and Development Site plan to the Building Commissioner, with a copy for review by the Fire Chief. Instructions to de-energize the system shall be made available to public safety personnel. The owner or operator shall identify a responsible person for public inquiries throughout the life of the GMSPS.

   d. Financial Surety – Except for a municipally owned GMSPS, a project designed to generate in excess of 2MW shall require a performance guarantee in the form of a cash bond in an amount approved by the Building Commissioner to cover the cost of GMSPS removal in the event the town must remove the installation and stabilize the Development Site with loam and seed.

5. **Other Requirements.**

   a. **Notification** – At least 60 business days prior to the commencement of work on a project, the GMSPS Owner/Operator shall notify abutters within 300 feet of when work will commence and that site plans are available for public review at Town Hall.

   b. **Modification** – A substantial modification to a GMSPS shown on an approved Site Plan shall require Site Plan modification in compliance with the standards and procedures applicable to the original application.

   c. **Segmentation** – Adjacent parcels in the same ownership or control shall be deemed to be one parcel for purpose of calculating the area limitation of §B.2 above.

   d. **Abandonment** – A GMSPS shall be deemed abandoned when its operations are discontinued for more than one year without the written consent of the Building Commissioner; or if the Building Commissioner has determined that the installation is a hazard to public safety and the conditions have not been corrected within three months. A GMSPS must be removed by its owner and the site restored when it has been abandoned as provided herein.

e. **Site Restoration** – A GMSPS must be removed by its owner within 150 days from the date of discontinuation of operations. The owner or operator shall notify the Building Commissioner by certified mail of the proposed date of discontinuation and provide detailed plans and schedule for GMSPS removal and restoration of the site to a function approved by the Building Commissioner or to a natural vegetative state.

f. **Exemption** – This Section 205-77 shall not apply to a GMSPS for which a zoning permit was issued and was still in effect as of July 20, 2016 [the first publication date of notice of the August 8, 2016 Planning Board public hearing], but the record owner of the land shall have the right to waive this exemption, in which case this Section 205-77 shall apply.

TOWN OF PLYMOUTH

Timothy Grandy, Chairman

Kenneth Buechs

Robert Bielen

Malcolm MacGregor

Paul McAlduff

BEING A MAJORITY OF THE PLANNING BOARD

DATE SIGNED BY THE PLANNING BOARD: September 12, 2016

DATE FILED WITH TOWN CLERK: September 13, 2016

cc: Town Clerk
Board of Selectmen
Advisory and Finance Committee