**NEEDHAM PLANNING BOARD**
**Thursday, March 14, 2024**
**7:00 p.m.**

**Charles River Room**
**Public Services Administration Building, 500 Dedham Avenue**
**AND**
**Virtual Meeting using Zoom**
Meeting ID: **880 4672 5264**
(Instructions for accessing below)

**To view and participate in this virtual meeting on your phone, download the "Zoom Cloud Meetings" app in any app store or at www.zoom.us. At the above date and time, click on "Join a Meeting" and enter the following Meeting ID: 880 4672 5264**

**To view and participate in this virtual meeting on your computer, at the above date and time, go to www.zoom.us click "Join a Meeting" and enter the following ID: 880 4672 5264**

**Or to Listen by Telephone: Dial (for higher quality, dial a number based on your current location): US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128 or +1 253 215 8782 Then enter ID: 880 4672 5264**

**Direct Link to meeting:** https://us02web.zoom.us/j/88046725264

1. Public Hearing:

   7:00 p.m. Article 1: Amend Zoning By-Law – Solar Energy Systems

2. Report from Planning Director and Board members.

3. Correspondence.

*(Items for which a specific time has not been assigned may be taken out of order.)*

PLANNING & COMMUNITY DEVELOPMENT
PLANNING DIVISION

**LEGAL NOTICE**
**Planning Board,**
**TOWN OF NEEDHAM**
**NOTICE OF HEARING**

In accordance with the provisions of M.G.L. c.40A, s.5, the Needham Planning Board will hold a public hearing on Thursday, March 14, 2024 at 7:00 p.m. in the Charles River Room, Needham Public Services Administration Building, 500 Dedham Avenue, Needham, MA, as well as by Zoom Web ID Number 880 4672 5264 (further instructions for accessing by zoom are below), regarding proposed amendments to the Needham Zoning By-Law. The proposed amendments concern the Zoning By-Law's regulation of solar energy systems. The proposed amendments include new definitions of multiple varieties of solar energy systems, and new regulations addressing the use, siting, and permissible dimensions (including setbacks, height, and maximum lot coverage) of solar energy systems throughout the Town, including on residential, commercial, and industrially zoned property.

The complete text of the proposed amendments to the Zoning By-Law is available on the Town's website at www.needhamma.gov/planning and in the Planning Department office at 500 Dedham Avenue, Needham, MA, 02492.

**To view and participate in this virtual meeting on your phone, download the "Zoom Cloud Meetings" app in any app store or at www.zoom.us. At the above date and time, click on "Join a Meeting" and enter the following Meeting ID:** 880 4672 5264

**To view and participate in this virtual meeting on your computer, at the above date and time, go to www.zoom.us click "Join a Meeting" and enter the following ID:** 880 4672 5264

**Or to Listen by Telephone: Dial (for higher quality, dial a number based on your current location): US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128 or +1 253 215 8782 Then enter ID:** 880 4672 5264

**Direct Link to meeting:** https://us02web.zoom.us/j/88046725264

Interested persons are encouraged to attend the public hearing and make their views known to the Planning Board. Members of the public attending this meeting virtually will be allowed to make comments if they wish to do so, during the portion of the hearing designated for public comment through Zoom or through calling in, or by attending the in-person meeting. You may also send comments in advance of the public hearing to planning@needhamma.gov.

Persons interested are encouraged to call the Planning Board office (781-455-7550) for more information.

This legal notice is also posted on the Massachusetts Newspaper Publishers Association's (MNPA) website at (http://masspublicnotices.org/).

---

Needham Hometown Weekly, February 29, 2024 and March 7, 2024.

**ARTICLE 1: AMEND ZONING BY-LAW – SOLAR ENERGY SYSTEMS**

To see if the Town will vote to amend the Zoning By-Law as follows:

1. In Section 1.3 Definitions, by adding the following terms and definitions in the appropriate alphabetical location as follows:

   "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 Energy Systems include the following system types:

   1. A Solar Energy System, Active: A solar energy system whose primary purpose is to harvest solar energy into another form of energy or to transfer heat from a collector to another medium using mechanical, electrical, or chemical means. Active Solar Energy Systems include, but are not limited to, the following installation types:

      a) Solar Energy System, Building-mounted: An Active Solar Energy System that is structurally mounted to a building or structure.

      b) Solar Energy System, Roof-mounted: A special application of a Building-mounted Solar Energy System that is structurally mounted to the roof of a building or structure.

      c) Solar Energy System, Building-mounted Canopy: A special application of a Building-mounted Solar Energy System that is installed on top of a building with a flat roof that maintains the function of the area beneath the canopy.

      d) Solar Energy System, Ground-mounted: An Active Solar Energy System that is structurally mounted to the ground.

      e) Solar Energy System, Small-Scale Ground-mounted: A Ground-mounted Solar Energy System that occupies 1,500 square feet of surface area or less.

      f) Solar Energy System, Medium-Scale Ground-mounted: A Ground-mounted Solar Energy System that occupies more than 1,500 square feet, but less than 40,000 square feet of surface area.

      g) Solar Parking Canopy: A special application of a Ground-mounted Solar Energy System that is installed on top of a parking surface or paved surface that maintains the function of the area beneath the canopy.

      h) Solar Energy System, Building-integrated Photovoltaic (BIPV): An Active Solar Energy System that consists of integrating solar photovoltaic (PV) modules into the surface of a building or structure, where the solar panels themselves function as, or are integrated into, a building material (i.e., roof shingles, siding, windows, skylights) or structural element (i.e., façade). The generation of solar energy is secondary to the function of the building material or structural element.

      i) Solar Energy System, Surface-integrated: An Active Solar Energy System that is not building-mounted and is integrated into a ground level surface, such as a driveway, walkway, patio surface, path, or parking area, where the solar panels themselves function

as, or are integrated into, the surface material. The generation of solar energy is secondary to the function of the surface element.

2. Solar Energy System, Passive: A Solar Energy System that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger."

2. Amend Section 6, Special Regulations, by adding a new Subsection 6.13 Accessory Uses – Solar Energy Systems, to read as follows:

"6.13 Accessory Uses – Solar Energy Systems

6.13.1 Basic Requirements

a) Roof-mounted Solar Energy Systems shall be permitted in all use districts as-of-right. The installation of Roof-mounted Solar Energy Systems that: (i) comply with the regulations provided in this section; (ii) are located on properties with nonconforming uses or structures; and (iii) do not increase the nonconformity of such nonconforming uses or structures except with respect to the dimensions of the Roof-mounted Solar Energy System in question shall not be considered a change, extension or alteration that requires a finding by the Zoning Board of Appeals per M.G.L. c.40A s.6.

b) In residential districts: Small-scale Ground-mounted Solar Energy Systems shall be permitted in rear and side yards as-of-right at the District-level setback as defined in Section 6.13.2.c)4). Small-scale Ground-mounted Solar Energy Systems may be permitted in the front yard by a Special Permit from the Board of Appeals at the applicable District-level setback as defined in Section 6.13.2.c)4). Screening or landscaping of such systems from view from abutting lots or from a street, by plantings, walls, fences or other devices shall be provided. Solar Parking Canopies shall be permitted in rear and side yards as-of-right. Medium-scale Ground-mounted Solar Energy Systems shall be permitted in the rear and side yards as-of-right subject to site plan review by the Planning Board.

c) In nonresidential districts: Small-scale Ground-mounted Solar Energy Systems shall be permitted in rear and side yards as-of-right. Medium-scale Ground-mounted Solar Energy Systems and Solar Parking Canopies are permitted in the rear and side yards as-of-right subject to site plan review by the Planning Board. The same regulations shall apply in residential districts for uses allowed by operation of M.G.L. c.40A s.3, or other state and federal statutes.

d) In the New England Business Center (NEBC) District, Mixed Use-128 (MU-128) District and in the portion of the Highland Commercial-128 (HC-128) District located a) north of Highland Avenue and b) south of Highland Avenue and west of Second Avenue: Solar Energy Building-mounted Canopy Systems are permitted as-of-right subject to site plan review by the Planning Board. In the Business (B), Chestnut Street Business (CSB), Center Business (CB), Avery Square Business ASB), Hillside Avenue Business (HAB), Neighborhood Business (NB), Elder Services (ES), Industrial (I), Industrial-1 (IND-1), Highway Commercial 1 (HC-1), and Institutional (I) districts Solar Energy Building-mounted Canopy Systems are permitted by special permit subject to site plan review by the Planning Board.

e) BIPV Solar Energy Systems and Surface-integrated Solar Energy Systems shall be permitted as of right as part of any use or site otherwise allowed in any zoning district.

6.13.2 Dimensional Requirement

a) Maximum Percentage (%) Lot Coverage

1) For the purpose of regulating lot coverage, the area of Active Solar Energy Systems shall count toward the Maximum Percentage (%) Lot Coverage as defined and regulated in the Dimensional Regulations provided in Section 4 of the Needham Zoning By-Laws.

2) An Active Solar Energy System's contribution toward Maximum Percentage (%) Lot Coverage shall be calculated as the total area of the system's panels. For example, if a system includes ten (10) panels that are each three (3) feet by five (5) feet, the system's contribution to Maximum Percentage (%) Lot Coverage would equal 150 square feet.

3) Such part of a Building-mounted Solar Energy System or Solar Parking Canopy that extends beyond the impervious area over which it is placed shall count toward Maximum Percentage (%) Lot Coverage.

4) For Ground–mounted Solar Energy Systems, the total surface area of the Solar Energy System shall count toward Maximum Percentage (%) Lot Coverage.

5) To avoid double counting, the surface area of any Active Solar Energy System that is above an existing impervious surface shall not be included in the calculation of Maximum Percentage (%) Lot Coverage (i.e. the addition of a Roof-mounted Solar Energy System shall not increase the calculated Maximum Percentage Lot Coverage on a lot because it will be located within a surface area - the building's footprint - that is already counted).

b) Height

1) Building-mounted Solar Energy Systems:

| System Type | Roof Pitch | Siting | Maximum Height |
|---|---|---|---|
| Roof mounted Solar Energy System | Pitch is greater than or equal to 3.2:12 (a fifteen (15) degree angle) | All districts | Roof-mounted Solar Energy Systems may extend up to one (1) foot above the roof surface on which the system is installed beyond applicable building height limits. Systems shall be surface-mounted and installed parallel to the roof surface. |

| | | | |
|---|---|---|---|
| Roof-mounted Solar Energy System | Pitch is less than 3.2:12 (a fifteen (15) degree angle) | All districts | Roof-mounted Solar Energy Systems may extend up to three (3) feet above the roof surface on which the system is installed beyond applicable building height limits. If the surface on which the system is to be mounted is below maximum building height, the Roof-mounted Solar Energy System may extend up to six (6) feet above the roof surface on which the system is installed, provided it does not exceed building height limits by more than three (3) feet; and provided further that any Roof-mounted Solar Energy System that extends more than three (3) feet above the roof surface on which the system is installed must be installed at least three (3) feet from the roof's edge. |
| Building-mounted Canopy Solar Energy System | Flat Roof with predominately zero pitch | NEBC, MU-128 & HC-128 districts<br><br>Municipal buildings in all districts | May extend up to fifteen (15) feet above the roof surface on which the system is installed beyond applicable building height limits. |
| Building-mounted Canopy Solar Energy System | Flat Roof with predominately zero pitch | B, CSB, CB, ASB, HAB, NB, ES, IND, IND-1, HC-1 &I districts | May extend up to fifteen (15) feet above the roof surface on which the system is installed up to the applicable building height limit of the district. |
| Other Building-mounted Solar Energy System (e.g., awnings) | Not Applicable | All districts | No greater than the highest point of the roof. |

2) Ground-mounted Solar Energy Systems:

| System Type | Siting | Maximum Height |
|---|---|---|

| | | |
|---|---|---|
| Small-Scale Ground-mounted Solar Energy System | SRB & GR districts<br><br>All other districts | Eight (8) vertical feet from grade.<br><br>Ten (10) vertical feet from grade. |
| Medium-Scale Ground-mounted Solar Energy System | SRB & GR districts<br><br>All other districts | Eight (8) vertical feet from grade.<br><br>Ten (10) vertical feet from grade. |
| Solar Parking Canopy | All districts | Seventeen (17) vertical feet from grade. |

c) Setbacks

1) Ground-mounted Solar Energy Systems that move along an axis, unfold, or open shall be located so that the entirety of the equipment's reach at all angles falls within the setback requirements.

2) Solar Parking Canopies in residential districts shall meet setback requirements for Accessory Structures.

3) Solar Parking Canopies and Surface-integrated Solar Energy Systems in non-residential zones shall be allowed where parking is permitted in accordance with the requirements defined in Section 5.1.3, Parking Plan and Design Requirements. The requirements for the planting of trees in landscaped strips within the parking area as defined in Section 5.1.3, Paragraphs (k) Landscape Areas and Paragraph (l) Trees may be met elsewhere on the lot. Landscaping for parking lots located under a canopy shall be designed to manage runoff from the panels and to be shade tolerant.

4) All other Ground-mounted Solar Energy Systems shall meet the requirements for Setbacks of principal structures as defined in Section 1.3 and Section 4.2 of the Needham Zoning By-Laws, as regulated for each use district in Section 4 ("District-level setback") provided, however, that a Small-Scale Ground-mounted Energy System in the Rural Residence-Conservation, Single Residence A, Single Residence B, and General Residence Districts located in a side or rear yard may instead meet the setback requirements applicable to accessory structures under Section 4.2.9. A Small-Scale Ground mounted Solar Energy System constructed nearer to any lot line than the Setback applicable to a principal structure pursuant to the forgoing provision shall require screening or landscaping of such systems from view from abutting lots and/or from a street, by plantings, walls, fences or other devices with said screening having a minimum height of six feet.

5) Any extension of a Building-Mounted Solar Energy System shall comply with the setback requirements for that building.

6.13.3 Supplemental Regulations

a) BIPV Solar Energy Systems and Surface-integrated Solar Energy Systems shall be subject to any requirements in the Needham Zoning By-Laws that relate to the material or structural element into which the system is integrated or functions as. For example,

solar roofing would be subject to regulations for roofing; solar pavement would be subject to regulations for pavement.

b) The impervious portion of Ground-mounted Solar Energy Systems and Surface-integrated Solar Energy Systems shall be subject to any requirements in the Needham Zoning By-Laws that relate to paving, including impervious lot coverage requirements within the Aquifer Protection District. The systems shall also comply with regulations identified in the Town of Needham's Stormwater By-Law, Article 7 of the General By-Laws.

6.13.4 Site Plan Review

a) Site Plan Review: Medium-scale Ground-mounted Solar Energy Systems in all districts, Solar Parking Canopies in non-residential districts, and Solar Energy Building-mounted Canopy Systems in the New England Business Center, Mixed Use 128, and Highland Commercial-128 districts, are subject to site plan review by the Planning Board prior to construction, installation or modification as provided in this section and in accordance with Section 7.4 Site Plan Review. In reviewing a Special Permit application under Section 6.13.1 b) the Board of Appeals shall also apply the Site Plan Review Document Requirements of Section 6.13.4 b) and the Site Plan Review Design Standards of Section 6.13.3 c). In reviewing a Special Permit application under Section 6.13.1 d) the Planning Board shall also apply the Site Plan Review Document Requirements of Section 6.13.4 b) and the Site Plan Review Design Standards of Section 6.13.3 c).

b) Site Plan Review Document Requirements: The project proponent shall provide a Final Site Plan to the Planning Board in compliance with Section 7.4 Site Plan Review, Subsection 7.4.4.Procedure. In addition, applicants shall submit the following:

1) Name, address, and contact information for proposed system installer.

2) Name, address, contact information and signature of the project proponent, as well as all co-proponents or property owners, if any.

3) The name, contact information and signature of any agents representing the project proponent.

4) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures.

5) Blueprints or drawings of the solar energy system showing the proposed layout of the system, any potential shading from nearby structures, the distance between the proposed solar collector and all property lines and existing on-site buildings and structures, and the tallest finished height of the Solar Energy System.

6) All submitted plans must be stamped by electrical, civil, and structural engineers or architects and landscape architects for their respective scope of work. Systems that are installed on existing structures must have a structural analysis stamped by a Professional Engineer that demonstrates the structure can handle the additional deadloads of the system as well as uplift wind loads per the local and state building codes.

7) Ground mounted solar structures must include geotechnical reports and engineering of any foundations associated with the new solar system per local and state building codes.

8) Plans must include stormwater analysis with erosion control plans for proposed solar systems as well as stormwater control measures. Site modifications must meet the current stormwater by-laws for stormwater infiltration requirements. Impervious areas will include all impervious surfaces associated with the new solar system.

9) Documentation of the major system components to be used, including the panels, mounting system, and inverter.

10) Operation and Maintenance Plan including measures for maintaining safe access to the installation, stormwater controls, as well as general procedures for operational maintenance of the installation.

11) Locations of active farmland, permanently protected open space, Priority Habitat Areas and BioMap 2 Critical Natural Landscape Core Habitat mapped by the Natural Heritage & Endangered Species Program (NHESP) and "Important Wildlife Habitat" mapped by the Massachusetts Department of Environmental Protection (MassDEP) in relation to the site.

c) Site Plan Review Design Standards: The Planning Board shall consider the following criteria and standards, in addition to those listed in Section 7.4.6, Review Criteria for Site Plan Review when reviewing site plan submittals made under this section:

1) Utility Notification: No solar photovoltaic system shall be installed until evidence has been given to the Planning Board that the owner has submitted notification to the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.

2) Utility Connections: Reasonable efforts, as determined by the Planning Board, 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.

3) Safety: The owner or operator shall provide a copy of the Site Plan Review application to the Needham Fire Department and shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar installation shall be clearly marked. The owner or operator shall identify a person responsible for responding to municipal officials, throughout the life of the installation.

4) Height and Layout: The Planning Board shall also review the height and physical layout of the Solar Energy Systems, utility connections, and appurtenant infrastructure as it relates to the convenience and safety of emergency vehicles, private vehicles and pedestrian movement on the site.

5) Visual Impact: Reasonable efforts, as determined by the Planning Board, shall be made to minimize visual impacts by preserving natural vegetation, screening abutting properties, or other appropriate measures.

6) 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 ground-mounted solar energy systems or as otherwise prescribed by applicable laws, regulations, and By-Laws.

7) Stormwater: The Planning Board shall review the existing and post stormwater analysis to meet the current stormwater by-law infiltration requirements.

8) Lighting: The Planning Board shall review the physical lighting of the site, including the methods of exterior lighting for convenience, safety and security within the site, and in consideration of impacts of neighboring properties and excessive light pollution. Where feasible, lighting of the Solar Energy System shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution."

3. Amend Section 4.2 Dimensional Regulations for Rural Residence-Conservation, Single Residence A, Single Residence B, General Residence, and Institutional Districts, Subsection 4.2.8 Height Limitation Exceptions, by deleting from the second sentence of the first paragraph the phrase "solar panels," so that the sentence shall now read as follows:

"In the case of schools and other municipal buildings, structures erected on a building and not used for human occupancy, such as chimneys, heating-ventilating or air-conditioning equipment, mechanical equipment, mechanical flues or exhausts, elevator housings or equipment, generators, roof access, stairway enclosures, skylights, and the like may exceed the maximum building height provided that no part of such structure or equipment shall project more than 15 feet above the maximum allowable building height and the total horizontal coverage of all of such structures or projections on the building does not exceed thirty-three percent (33%) of the total roof area of the building."

4. Amend Section 4.2 Dimensional Regulations for Rural Residence-Conservation, Single Residence A, Single Residence B, General Residence, and Institutional Districts, Subsection 4.2.8 Height Limitation Exceptions, by deleting the fourth sentence of the first paragraph which reads as follows:

"Further provided, subject to the 15-foot maximum height limitation cited above, solar panels shall also be allowed on rooftops of schools and other municipal buildings with no limitation on the roof area coverage provided such panels are set back from the edge of the roof a distance at least equal to the height of the panel."

5. Amend Section 4.5 Dimensional Regulations for Highland Commercial-128, Subsection (3), by deleting from the fourth sentence of said subsection the phrase "solar or photovoltaic panels," so that the sentence shall now read as follows:

"Structures erected on a building and not used for human occupancy, such as chimneys, heating-ventilating or air-conditioning equipment, elevator housings, skylights, cupolas, spires and the like may exceed the maximum building height provided that no part of such structure shall project more than 15 feet above the maximum allowable building height, the total horizontal coverage of all of such structures on the building does not exceed 25 percent, and all of such structures are set back from the roof edge by a distance no less than their height."

6. Amend Section 4.8 Dimensional Regulations for NEBC, Subsection (1), by deleting from the fourth sentence of said subsection the phrase "solar or photovoltaic panels," so that the sentence shall now read as follows:

"Structures erected on a building and not used for human occupancy, such as chimneys, heating-ventilating or air-conditioning equipment, elevator housings, skylights, cupolas, spires and the like may exceed the maximum building height provided that no part of such structure shall project more than 15 feet above the maximum allowable building height, the total horizontal coverage of all of such structures on the building does not exceed 25 percent, and all of such structures are set back

from the roof edge by a distance no less than their height, provided that the Planning Board may by Special Permit increase the height limit by not more than 5 additional feet."

7. Amend Section 4.9 Dimensional Regulations for Mixed-Use 128, Subsection (1), by deleting from the fourth sentence of said subsection the phrase "solar or photovoltaic panels," so that the sentence shall now read as follows:

   "Structures erected on a building and not used for human occupancy, such as chimneys, heating-ventilating or air conditioning equipment, elevator housings, skylights, cupolas, spires and the like may exceed the maximum building height provided that no part of such structure shall project more than 15 feet above the maximum allowable building height, the total horizontal coverage of all of such structures on the building does not exceed 25 percent, and all of such structures are set back from the roof edge by a distance no less than their height."

Or take any other action relative thereto.