

Planning Board Report: Zoning Amendments

Article 24: Solar Energy Systems



**Annual Town Meeting
May 2, 2017**

Planning Board Members:

Jason Grimshaw, Chair
Debra Friedman, Vice-Chair
Alaa AbuSalah
Andrew Kularski
Robyn Zwicker, Associate Member

Town Planner:

Michelle R. Buck, AICP

Planning Board Recommendation, Article 24:

The Planning Board recommends approval of Article 24. The proposed amendments to Leicester's regulation of commercial-scale ground-mounted solar energy systems include the following improvements:

- increased setbacks from residential structures and residential zoning districts
- better protection of natural resources
- expanded screening and landscaping requirements
- special permits required in residential districts

Small-scale ground-mounted solar energy systems to power residential homes (and roof-mounted systems of any size) would continue to be allowed with only a building permit.

A detailed summary of the proposed amendments is provided on page 2.
The full text of the proposed amendments starts on page 3.

Article 24: Summary/Explanation

Summary of Existing Zoning Bylaw:

- Size is defined by nameplate capacity (large ≥ 250 kw DC). 250 kw is equivalent to roughly 40,000 square feet, and allowed as follows:

Size	Zoning District					
	SA	R1 & R2	NB	CB	RIB	B, HB-1, HB-2, BR-1, BI-A, and I
Small (under 250kw)	Y	Y	Y	Y	Y	Y
Large (over 250kW)	SPR	SP	SP	N	SP	SPR

Y= allowed by-right (building permit only), SPR = Site Plan Review required, SP = special permit required, N = prohibited

- Roof mounted solar panels are allowed by-right in all zoning districts
- There is no mandatory buffering/screening requirement except in some commercial districts where required for all commercial development

Summary of Proposed Changes:

- Roof and building mounted solar installations remain by-right in all zoning districts
- The name for solar facilities is changed from “solar photovoltaic installations” to “solar energy systems”
- Solar energy systems are defined by the size of surface area in square feet (rather than kW) and divided into 3 categories, regulated as summarized below:

Size	Zoning District					
	SA	R1 & R2	NB & CB	B & RIB	HB-1, HB-2, BR-1, BI-A, & I	Watershed Overlay District
Small (0 – 1,000 s.f.)	Y	Y	Y	Y	Y	Y
Medium (1,001 – 39,999 s.f.)	SP	SP	N	SPR ¹	SPR ¹	SP
Large (40,000s.f.+)	SP	N	N	SP	SPR ²	SP

Y= allowed by-right (building permit only), SPR = Site Plan Review Required, SP = special permit required, N = prohibited

¹ Site Plan Review not required for any project that occupies less than 3,000 square feet of surface area.

² Major Site Plan Review required (Section 5.2.03.3.B) for any project that occupies 240,000 square feet (5.5 acres) or more of surface area or involves 2 acres or more of tree clearing.

- Canopies over parking lots and driveways are included in definition of ground-mounted solar
- New dimensional requirements specific to solar facilities have been added (height limits, setbacks, etc.). Setbacks are increased in residential zoning districts and in commercial districts where abutting residential use.
- New sections have been added to minimize deforestation and destruction of significant habitat
- New screening and landscaping requirements have been added.

Article 24: Solar Energy Systems

The specific text changes proposed by this article are below (new text underlined, deleted text shown with ~~strikethrough~~).

1. Amend Section 5.14., Large-Scale Ground-Mounted Solar Photovoltaic Installations, as shown below:

5.14 Large-Scale Ground-Mounted Solar Photovoltaic Installations **Ground-Mounted Solar Energy Systems**

[STM 11-8-2011]

1.0 Purpose

The purpose of this bylaw is to ~~promote the creation of new large-scale ground-mounted solar photovoltaic installations~~ facilitate and appropriately regulate the creation of ground-mounted solar energy systems by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on scenic, natural and historic resources and to provide adequate financial assurance for the eventual decommissioning of such installations.

2.0 Definitions

~~**Large-Scale Ground-Mounted Solar Photovoltaic Installation:** A solar photovoltaic system that is structurally mounted on the ground and is not roof-mounted, and has a minimum nameplate capacity of equal or greater than 250 kW DC.~~

~~**Small-Scale Solar Photovoltaic Installation:** A solar photovoltaic system that has a minimum nameplate capacity of less than 250 kW DC.~~

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

Solar Energy System: Any solar collector or other solar energy device, including appurtenances, mounted on a building or on the ground, the primary purpose of which is to provide for the collection, storage, conversion and distribution of solar energy for space heating or cooling, water heating or generation of electricity.

Ground-Mounted Solar Energy System: A solar energy system that is structurally mounted to the ground in any manner, including but not limited to ground anchored pole, rack, or rail installations, non-ground penetrating ballasted installations, or canopy installations above parking lots or driveways; not roof or wall mounted installations.

Large-Scale Ground-Mounted Solar Energy System: A ground-mounted solar energy system that occupies 40,000 square feet or more of surface area.

Medium-Scale Ground-Mounted Solar Energy System: A ground-mounted solar energy system that occupies more than 1,000 but less than 40,000 square feet of surface area.

Small-Scale Ground-Mounted Solar Energy System: a ground-mounted solar energy system that occupies 1,000 square feet of surface area or less.

3.0 Applicability

This section applies to ~~large-scale ground-mounted solar photovoltaic installations~~ ground-mounted solar energy systems proposed to be constructed after the effective date of this section. Roof or wall mounted solar energy systems are not subject to this bylaw. This section also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment.

4.0 General Requirements

~~Ground-mounted large-scale solar photovoltaic installations with 250 kW or larger of rated nameplate capacity shall undergo site plan review by the Planning Board prior to construction, installation or modification as provided in this section. Large-scale ground-mounted solar photovoltaic installations shall require a special permit in the following districts: Residential 1 (R1), Residential 2 (R2) and Neighborhood Business (NB).~~

~~Applications for large-scale ground-mounted solar photovoltaic installations shall be filed in accordance with the Leicester Planning Board Rules and Regulations for Site Plan Review Applications and/or Special Permit Applications, as applicable. Where a special permit is required, the Planning Board shall use the general standards for Special Permit Approval contained in the Planning Board Rules and Regulations for Special Permit Applications.~~

Ground-mounted solar energy systems shall be allowed and permitted as described in the table below:

Y= allowed by-right with building permit, SPR = Site Plan Review Required (Section 5.2),

SP = special permit from Planning Board required, N = prohibited

<u>Size</u>	<u>SA</u>	<u>R1 & R2</u>	<u>NB & CB</u>	<u>B & RIB</u>	<u>HB-1, HB-2, BR-1, BI-A, and I</u>	<u>Watershed Overlay District</u>
<u>Small-Scale Ground-Mounted Solar Energy System</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>
<u>Medium-Scale Ground-Mounted Solar Energy System</u>	<u>SP</u>	<u>SP</u>	<u>N</u>	<u>SPR¹</u>	<u>SPR¹</u>	<u>SP</u>
<u>Large-Scale Ground-Mounted Solar Energy System</u>	<u>SP</u>	<u>N</u>	<u>N</u>	<u>SP</u>	<u>SPR²</u>	<u>SP</u>

¹ Site Plan Review not required for any project that occupies less than 3,000 square feet of surface area.

² Major Site Plan Review required (Section 5.2.03.3.B) for any project that occupies 240,000 square feet (5.5 acres) or more of surface area or involves 2 acres or more of tree clearing.

~~Applications for large-scale ground-mounted solar photovoltaic installations~~ medium-scale and large-scale ground-mounted solar energy systems shall be filed in accordance with the Leicester Planning Board Rules and Regulations for Site Plan Review Applications and/or Special Permit Applications, as applicable. Where a special permit is required, the Planning Board shall use the general standards for Special Permit Approval contained in the Planning Board Rules and Regulations for Special Permit Applications, any district-specific special permit requirements, and the additional standards contained herein.

5.0 Development Standards for Small-Scale Ground-Mounted Solar Energy Systems

Small-scale ground-mounted solar energy systems shall conform to the dimensional requirements of the applicable zoning district, except as follows:

- A. Height shall not exceed twelve (12) feet in height above finished grade.
- B. Building coverage limits shall not apply to solar energy systems.

- C. For the purposes of setback requirements, small-scale ground-mounted solar energy systems shall be considered accessory structures (Section 1.5, Accessory Buildings).

No solar energy system shall be constructed without first obtaining a building permit.

6.0 5.0 Development Standards for Large Scale Solar Photovoltaic Installations Medium-Scale and Large-Scale Ground-Mounted Solar Energy Systems

Unless otherwise expressly provided by this section of the bylaw all requirements of the underlying zoning district shall apply. In addition, the following standards shall apply to all ~~large-scale ground-mounted solar photovoltaic installations~~ medium-scale and large-scale ground-mounted solar energy systems:

6.1 5.1 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 buildings and fixtures forming part of a solar ~~photovoltaic installation~~ energy system shall be constructed in accordance with the State Building Code. No ~~large-scale ground-mounted solar photovoltaic installations~~ solar energy system shall be constructed, installed or modified as provided in this section without first obtaining a building permit.

6.2 5.2 Dimensional Requirements

~~Dimensional requirements (lot size, setback, etc.) shall follow the requirements of the applicable zoning district, except that minimum frontage shall be fifty (50) feet.~~

Dimensional requirements (lot size, setbacks, etc.) shall follow the requirements of the applicable zoning district (Section 4.2, Schedule of Dimensional Requirements), except as follows:

- A. The minimum frontage shall be fifty (50) feet
- B. Height shall not exceed fifteen (15) feet in height above finished grade. An increase in height may be granted in commercial districts by special permit.
- C. Building coverage limits shall not apply to solar energy systems.
- D. Setbacks shall be as specified below:

<u>Setback Type</u>	<u>SA, R1, R2</u>	<u>B & I</u>	<u>BI-A, HB-1, HB-2, RIB, & BR-1</u>
<u>Setback from all property lines</u>	<u>100</u>	<u>See Section 4.2¹</u>	
<u>Setback where abutting a lot with an existing residential use</u>	<u>100</u>	<u>50</u>	<u>50</u>
<u>Setback from Residential District (SA, R1, R2) Boundaries²</u>	<u>100</u>	<u>50</u>	<u>100</u>

¹ Dimensional Requirements applicable to commercial structures shall apply in the BI-A, BR-1, RIB, and I districts.

² Where a parcel is split by a residential district boundary, the setback shall be measured from the property line on the relevant side(s) of the parcel.

6.3 5.3 Utility Notification

No ~~large-scale ground-mounted solar photovoltaic installation~~ medium-scale or large-scale ground-mounted solar energy system shall be constructed until evidence has been given to the Planning Board that the utility company that operates the electrical grid where the installation is to be located has been informed of the solar ~~photovoltaic installation~~ energy system owner or operator's intent to install an inter-connected customer-owned generator. Off-grid systems shall be exempt from this requirement.

Reasonable efforts, as determined by the Planning Board, shall be made to place all utility connections from the solar photovoltaic installation energy system 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.

6.4 5.4 Accessory Structures

Accessory structures to large-scale ground-mounted solar photovoltaic installations, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other. Inverters shall be installed as far from abutting structures as feasible to mitigate potential noise impacts. Whenever reasonable, structures should be shaded from view by vegetation and/or joined or clustered to avoid adverse visual impacts.

6.5 5.5 Lighting

Lighting of solar photovoltaic installations solar energy systems shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as accessory structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar photovoltaic installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

6.6 5.6 Signage

Signs on large-scale ground-mounted solar photovoltaic installations shall comply with Leicester's sign bylaw. A sign shall be required to identify the owner and provide a 24-hour emergency contact phone number. Solar photovoltaic installations energy systems shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar photovoltaic installation energy system.

6.7 5.7 Emergency Services

The large-scale ground-mounted solar photovoltaic installations solar energy system owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to local emergency services. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar photovoltaic installation energy system shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

6.8 5.8 Land Clearing, Habitat Protection, and Screening Requirements

A. Land Clearing:

Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the large-scale ground-mounted solar photovoltaic installations solar energy systems or otherwise prescribed by applicable laws, regulations, and bylaws. Solar energy systems, to the maximum extent feasible, shall be located on previously-disturbed sites that do not require tree clearing. Existing vegetation shall remain in required setback areas except where such vegetation would shade the solar energy system. However, in no event shall clearing of existing vegetation in setbacks exceed half the required setback width. Adequate erosion control measures shall be provided for all proposed land clearing.

B. Protection of Natural Resources and Habitat

Medium-scale and large-scale ground-mounted solar energy systems shall be designed to minimize impacts to agricultural and environmentally sensitive land and to be compatible with continued agricultural use of the land whenever possible. Such systems shall not be located on permanently protected land subject to conservation, preservation, agricultural preservation, and watershed preservation restrictions under MGL Chapter 184, Sections 31-33; Priority Habitat and Bio Map 2 Critical Natural Landscape Core Habitat mapped by the Natural Heritage and Endangered Species Program (NHESP); or "Important Wildlife Habitat" mapped by the DEP. Access driveways shall be constructed to minimize grading, removal of stone walls or roadside trees, and to minimize impacts to environmental or historic resources.

C. Screening/Buffering:

Medium-scale and large-scale ground-mounted solar energy systems shall be screened year round from all adjoining properties in residential use in all zoning districts and from public and private ways in residential districts (SA, R1, and R2). Such screening shall be provided in the required setback areas and where existing vegetation in setbacks is insufficient for year-round screening purposes shall consist of dense vegetative screening, fencing, berms, or other methods to adequately screen the facility, depending on site specific conditions. Landscaping shall be maintained and replaced as necessary by the owner/operator of the solar energy system.

6.9 5.9 Monitoring and Maintenance

~~The large-scale ground-mounted solar photovoltaic installations~~ **solar energy system** owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to the local Fire Chief and Emergency Medical Services. The owner or operator shall be responsible for the cost of maintaining the solar ~~photovoltaic installation~~ **energy system** and any access road(s), unless accepted as a public way.

6.10 5.10 Abandonment or Decommissioning

A. Removal Requirements

~~Any large-scale ground-mounted solar photovoltaic installations~~ **medium-scale or large-scale ground-mounted solar energy system** which has reached the end of its useful life or has been abandoned shall be removed. When the facility is scheduled to be decommissioned, the applicant shall notify the town by certified mail of the proposed date of discontinued operations and plans for removal. The owner/operator shall physically remove the solar facility no more than 150 days after the date of discontinued operations. At the time of removal, the solar facility site shall be restored. More specifically, decommissioning shall consist of:

1. Physical removal of all ~~large-scale ground-mounted solar photovoltaic installations~~ **solar energy systems**, structures, equipment, security barriers and transmission lines from the site.
2. Disposal of all solid and hazardous waste in accordance with local and state waste disposal regulations.
3. Stabilization or re-vegetation of the site as necessary to minimize erosion. The Planning Board may allow the owner to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation

B. Abandonment

Absent notice of a proposed date of decommissioning, the facility shall be considered abandoned when the facility fails to operate for more than one year without the written consent of the Planning Board. The Planning Board shall determine in its decision what proportion of the facility is inoperable for the facility to be considered abandoned. If the applicant fails to remove the solar facility in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the town shall have the authority to enter the property and physically remove the facility at the owner's expense. The Town may, at its option, impose a lien on the property according to statute for the removal of the solar facility.

C. Financial Surety

~~The Planning Board may require the applicant for large-scale ground-mounted solar photovoltaic installations to provide~~ **The applicant for large-scale ground-mounted energy systems shall provide, prior to commencement of site work, and thereafter maintain** a form of surety, either through escrow account, bond or otherwise, to cover the cost of removal **and site restoration** in the event the town must remove the facility, of an amount and form determined to be reasonable by the Planning Board. **The Planning Board may require such surety for medium-scale ground-mounted solar energy systems.** Such surety will not be required for municipally or state-owned facilities. **The applicant shall submit a fully inclusive estimate of the costs associated with**

removal, prepared by a qualified engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation. The owner shall increase or replenish the surety as necessary to maintain an adequate an adequate amount, as determined by the Planning Board in accordance with the requirements of this bylaw.

6.11 Special Permit Criteria for Ground-Mounted Solar Energy Systems

Where a special permit is required for a medium-scale or large-scale ground-mounted solar energy system, the Board shall consider Site Plan Approval standards, special permit criteria for the applicable district, and the following additional requirements:

- A. The proposed project shall conform to all requirements for ground-mounted solar energy systems
- B. Land clearing has been minimized to the greatest extent feasible and impacts of clearing have been mitigated.
- C. In the case of a residential district location, the visual impact of the installation on its immediate abutters and the nearby neighborhood has been effectively neutralized through appropriate design, landscaping, fences, berms, etc.
- D. In the case of a commercial district location, that the visual impact of the installation on abutting residential uses has been sufficiently mitigated through appropriate design, landscaping, fences, berms, etc.

6.12 Zoning Protection for Approved Projects

The amendments to Section 5.14 adopted at the May 2, 2017 Town Meeting shall not apply to any medium-scale or large-scale ground-mounted solar energy system that received Site Plan Approval from the Planning Board before March 21, 2017 except where any such project fails to obtain a building permit within one (1) year from the date of said Site Plan Approval and commence construction of solar arrays authorized under the building permit within six (6) months of the issuance of the building permit.

2. Amend Section 3.2.05, Transportation, Communication, Utility, as shown below:

3.2.05 TRANSPORTATION, COMMUNICATION, UTILITY		SA	R1	R2	B	CB	I	BI-A	HB-1 & HB-2
7.	Large-Scale Ground-Mounted Solar Photovoltaic Installation <u>Energy System</u>	Y <u>SP</u>	SP	SP	Y <u>SP</u>	N	Y	Y	Y
<u>8.</u>	<u>Medium-Scale Ground-Mounted Solar Energy System</u>	<u>SP</u>	<u>N</u>	<u>N</u>	<u>Y</u>	<u>N</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>
8. <u>9.</u>	Small-Scale Ground-Mounted Solar Photovoltaic Installation <u>Energy System</u>	Y	Y	Y	Y	Y	Y	Y	Y

3. Amend Section 3.30, Business Residential-1 (BR-1) Zone, as follows:

~~kk. Solar Photovoltaic Installations~~ Ground-Mounted Solar Energy Systems

4. Amend Section 3.32, Residential Industrial Business (RIB) Zone, by adding sub-paragraphs l and m, as follows:

- l. Small-Scale and Medium-Scale Ground-Mounted Solar Energy Systems
- m. Large-Scale Ground-Mounted Solar Energy Systems by Special permit from the Planning Board.

5. Amend Section 4.2.03, as follows:

4.2.03 The limitations on height of buildings shall not apply in any district to chimneys, ventilators, towers, spires, roof-mounted solar energy systems, or other ornamental features of buildings which features are in no way used for living purposes.

6. Amend Section 5.6.02, Allowed Uses [in Neighborhood Business District], by inserting the following after subsection 5.6.02.2.J.:

K. Small-Scale Ground-Mounted Solar Energy Systems (Medium-Scale and Large-Scale Ground-Mounted Solar Energy Systems are prohibited.)

7. Amend Section 5.2.02.1, Projects Requiring Site Plan Review, by amending subparagraph g. as follows:

~~g. Large-Scale Ground-Mounted Solar Photovoltaic Installations~~ Medium-Scale Ground-Mounted Solar Energy Systems that occupy 3,000 square feet or more of surface area and Large-Scale Ground-Mounted Solar Energy Systems.

8. Amend Section 5.2.03.4.B, Major Site Plan Review Applications, as follows:

B. Major Site Plan Review Applications: Site Plan Review applications for projects involving new construction or expansion of more than 30,000 square feet of gross floor area, Large-Scale Ground-Mounted Solar Energy Systems that occupy 240,000 square feet (5.5 acres) or more of surface area or Ground-Mounted Solar Energy Systems that involve more than two (2) acres of tree clearing shall require a Planning Board public hearing. Such public hearing shall follow the procedures of MGL, Ch.40A regarding special permits with regard to scheduling, notification, and deadline for a decision. The public hearing shall be scheduled within sixty-five (65) days after the application has been submitted to the Planning Board. Failure of the Planning Board to take final action within ninety (90) days of the close of the public hearing shall be deemed to be approval of the application. These time limits may be extended by written agreement between the applicant and the Planning Board in accordance with the Site Plan Review Rules and Regulations.

9. Amend Section 7.1, Water Resources Protection Overlay District, subsection 7.1.04.2.), Special Permit Uses, by adding the following text after subparagraph c.:

d. Medium-scale or large-scale ground-mounted solar energy systems